Archaeological Excavation

Early Iron Age & medieval to modern settlement remains at Harvest Way Barnwell, Cambridge

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Early Iron Age and medieval to modern settlement remains at Harvest Way, Barnwell, Cambridge

Appendices B to E

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APPENDIX B. FINDS REPORTS

B.1 Pre-medieval and Medieval Pottery from Period 2

By Sue Anderson and Carole Fletcher

Introduction

B.1.1 Pottery with a total weight of 182.594 kg was recorded from 500 contexts assigned to Period 2, representing 42% of the total pottery assemblage by weight. Of this, small quantities (total 3.844kg) from 100 contexts were subject to only the most basic recording and spotdating (Fletcher 2015a); this material will not be considered further. Larger context groups (totalling 3769 sherds, 56.539kg) were selected for slightly more detailed recording during analysis (by Anderson), but only the pottery recovered from the evaluation, key groups in the excavation (wells, a quarry pit and clay-lined tanks; 5009 sherds, 122.211 kg) and a few other large features was fully recorded (by Fletcher and Anderson). Table B.1.1 shows the overall quantification of the fully recorded material by pot period.

Pot period	No.	Wt/g	MNV
Prehistoric	5	61	5
Roman	4	86	4
Late Saxon	63	833	55
Early medieval	388	4304	331
Medieval	6780	139785	3322
Late medieval	1427	31344	599
Post-medieval	62	1441	46
Modern	31	708	23
Unidentified	18	188	11
Totals	*8778*	*178750*	*4396*

Table B.1.1: *Pottery quantification by period*

B.1.2 This report presents a brief summary of the pottery types present across the whole site (for more detail see Fletcher (2015a)), based on the larger contexts which were more fully recorded, together with a more detailed analysis of the pottery from key groups.

Methodology

B.1.3 Quantification was carried out using sherd count and weight; estimated vessel equivalent (eve) was recorded for key groups only. 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. Methods follow MPRG recommendations (MPRG 2001) and form terminology follows MPRG classifications (1998). The results were input directly onto an MS Access database, which forms the archive catalogue. Late Saxon to late medieval wares were identified based on Spoerry (2016); post-medieval to modern fabrics are based on the authors' fabric series. Due to time constraints, it was not possible to check fabrics of many of the sandy and shelly coarsewares and most have been recorded using generic fabric groups (EMSHW, SHW, MSW, MSGW).

Pre-medieval Pottery

B.1.4 Five sherds of prehistoric pottery were recovered, all flint-tempered and all abraded and residual in medieval contexts. One possibly Neolithic bowl rim was identified and one other sherd with very coarse flint tempering may also be early prehistoric, but the other

sherds were likely to be Iron Age. Four sherds were of Roman date, all sandy wares. They included a Horningsea ware jar rim and a flat base fragment.

B.1.5 All pre-medieval pottery was heavily abraded and residual in Period 2 contexts, and the small quantity from both Periods 1 and 2 suggests that there was no significant activity on the site before the 10th/11th century.

Late Saxon Pottery

B.1.6 Table B.1.2 shows the quantities of Late Saxon pottery by fabric. Late Saxon pottery formed a small proportion (<1%) of the total Period 2 group. This is comparable with findings at other sites bordering Newmarket Road (Cessford *et al.* 2013; Fletcher 2015b and 2015c).

Description	Fabric	Date range	No	Wt/g	MNV
Thetford-type ware	THET	840-1100	19	252	15
Grimston Thetford-type ware	GTHET	1000-1150	4	61	4
Huntingdon Thetford-type ware	HTHET	840-1150	1	5	1
Stamford Ware(?)	STAM	875-1200	1	3	1
St. Neots Ware	NEOT	875-1100	37	507	33
Late Saxon shelly wares (general)	LSSH	850-1100	1	5	1
Total			*63*	*833*	*55*

Table B.1.2: *Late Saxon pottery*

B.1.7 The small Late Saxon assemblage was dominated by St Neots-type ware, with a slightly smaller component of sandy Thetford-type wares. Much of the latter group was in fabrics which are typical of Thetford itself, although a few sherds were in fabrics which probably represent other production sites (Huntingdon, Grimston?). One small sherd with yellow glaze externally, tentatively identified as Stamford ware, may be a whiteware of medieval date, possibly Brill/Boarstall ware.

B.1.8 It was possible to identify nine of the Late Saxon vessels to basic forms from their rims. Four were jars, four were bowls and there was one 'ginger jar'. Jar rim forms were generally rounded everted or parallel everted types. Nine bases were all sagging types. It is likely that this small assemblage dates to the 11th century and some or all of it may overlap with the use of early medieval wares at the site.

Early medieval pottery

B.1.9 Early medieval wares are generally defined as handmade wares which first appeared in the 11th century and continued to be made into the 13th century in rural parts of East Anglia. Sometimes pots were finished on a turntable and many have wheelmade rims luted onto handmade bodies. These handmade wares can be considered transitional between the Late Saxon and medieval wheelmade traditions, and their use overlaps with both period groups.

B.1.10 Table B.1.3 shows the quantities of early medieval wares by fabric. The total is approximately 2.4% of the whole Period 2 recorded assemblage by weight, which places it between the proportions recorded at Coldhams Lane (10%) and Newmarket Road (0.1%) (Fletcher 2015b and 2015c), although Harvest Way has produced the largest group of early medieval pottery from the area to date. As a result, the range of wares is slightly greater than at other Barnwell sites (Fletcher *ibid*; Spoerry 2016, table 5.3), but EMEMS tends to dominate all the groups.

B.1.11 The majority of EMSHW in this group is likely to be DNEOT – certainly most sherds appeared wheelmade – but due to time constraints it was not possible to check every sherd for the diagnostic fossils and consequently sherds have been recorded under the

more generic fabric group (some may also have been recorded as SHW, see below), as recommended by Spoerry (2016).

Description	Fabric	Date range	No	Wt/g	MNV
Developed St Neots type ware	DNEOT	1050-1250	79	836	71
Early Medieval Shelly ware	EMSHW	1050-1200	41	394	27
Early Medieval Hand-Made ware	EMH	11th-12th c.	1	5	1
Early Medieval wares	EMW	11th-12th c.	80	603	74
(South Cambs) Smooth Sandy ware	SCASS	1050-1225	25	295	23
South Cambs Grog-tempered Sandy ware	SCAGS	12th c.	8	114	7
South-west Cambs Sandy ware	SCAMSW	1050-1250	6	73	5
Hunts Early Medieval ware	HUNEMW	1050-1200	34	354	25
Hunts EMW/Fen Sandy Ware	HUNEMW/FSW	1050-1300	2	225	2
Early Medieval Silty Sandy Orange ware	EMSSO	1150-1250	2	12	1
Essex Early Medieval Sandy Shelly ware	ESEMSSH	1000-1300	15	166	12
Essex Early Medieval Shelly ware	ESEMSH	1000-1300	2	11	2
Early Medieval Essex Micaceous Sandy ware	EMEMS	1050-1225	90	1121	78
Early medieval ware gritty	EMWG	11th-13th c.	2	12	2
Paffrath-type ware	PAFF	1000-1200	1	83	1
Totals			*388*	*4304*	*331*

Table B.1.3: *Early medieval wares*

B.1.12 Based on rims, most identifiable vessels in this group were jars (MNV 27), with 17 bowls/dishes and one jug also represented. Rim forms were generally everted or upright, sometimes with beading at the tip, and one DNEOT dish rim was inturned. Most vessels had traces of soot and occasionally lime adhering to one or both surfaces, and the majority were probably cooking pots. One exotic ware, a Paffrath (FIemish blue-grey) ladle was also identified.

B.1.13 Decoration was minimal, with thumbing of rims being the most common type. One SCASS vessel, represented by body sherds only, had combed diagonal lines and applied thumbed strips and may be the remains of a curfew. Applied thumbed strips and incised or combed wavy or horizontal lines were present on a few other vessels. One vessel had rouletted lines, similar to HUNFSW examples (*e.g.* Spoerry 2016, pl. 9.45), but in a sandy fabric with no calcareous inclusions.

Medieval Wares

B.1.14 Medieval coarsewares are wheelmade wares which are generally of 12th to 14th-century date. Most in this group were well-fired and fully reduced to pale to dark greys, although oxidised wares were also found. This large group was dominated by coarsewares, the majority of which were unprovenanced. Table B.1.4 shows the quantifications of high medieval pottery.

B.1.15 The range of fabrics present during the high medieval period is broad, but many of the coarsewares in particular are currently unprovenanced. Of the local wares, Ely-type ware predominates, with SEFEN providing a much smaller proportion of the total. The two wares can appear very similar, however, and potentially some of this group has been wrongly attributed. Essex wares (including East Anglian redwares) are also common, with Hedingham ware being the most frequent of the sourced wares. There is a high proportion of medieval coarsewares which are similar to pottery frequently found in Bury St Edmunds and possibly made in Suffolk, as well as a range of greywares which may be from south Suffolk or Essex (in addition to the micaceous wares). Smaller quantities of pottery from surrounding counties (Norfolk, Suffolk, Beds, Bucks, Herts,

Lincs, Northants, London) are also present, and from further afield there are sherds of Scarborough ware and Saintonge ware.

Description	Fabric	Date range	No	Wt/g	MNV
Medieval Sandy ware	MSW	1150-1500	902	13279	602
Medieval Sandy Greyware	MSGW	1150-1500	69	721	46
Shelly wares	SHW	1150-1500	136	3347	63
Medieval Ely ware	MEL	1150-1350	704	18349	422
Medieval Ely ware	MEL/MEL+	1150-1400	63	2404	18
Medieval Ely ware+	MEL+	1300-1400	880	29498	216
South-east Fenland Late Medieval Calcareous Buff ware	SEFEN	1150-1450	304	9757	147
Huntingdonshire Fen Sandy ware	HUNFSW	1175-1300	102	1972	54
Colne Medieval ware	CONM	1200-1350	79	1258	19
Colne type ware from Caxton and Bourn	CONCAX	1300-1400	79	1580	19
Baston-type Oxidised ware	SLBTOX	1200-1400	1	8	1
Bourne-type Medieval wares	BOUA	1150-1450	3	50	3
Hedingham Coarseware	HEDIC	1150-1350	73	1071	68
Hedingham Fineware	HEDI	1150-1350	679	12596	340
Mill Green Coarseware	MGCOAR	1250-1400	3	72	3
Mill Green Fineware	MGF	1250-1400	85	1594	46
Colchester-type ware	COLS	1200-1400	110	1802	60
Medieval Essex-type micaceous sandy wares	MEMS	1200-1400	787	11090	424
Early Medieval/Medieval Essex-type micaceous sandy wares	EMEMS/MEMS	1050-1400	38	641	16
East Anglian Redwares	EAR	1200-1400	916	11477	496
East Anglian Redwares (?Harlow)	EAR (?21D)	1200-1400	46	1299	5
Grimston ware	GRIM	L.12th-14th c.	79	2070	42
?Yarmouth-type glazed ware	YARG	13th-15th c.	19	821	6
Unglazed Reduced Sandy wares (of Blackborough End type)	UGBB	1150-1300	6	84	6
Hollesley-type glazed ware	HOLG	13th-14th c.	3	37	2
Early Everton-type ware	ELEVER	1300-1400	56	846	8
Medieval Sandy Greyware/Early Everton Ware	MSGW/ELEVER	1300-1400	48	961	1
Brill/Boarstall ware	BRIL	1200-1500	135	3222	86
London-type ware	LOND	1100-1400	1	5	1
Lyveden A type ware	LYVA	1150-1400	211	5054	29
Lyveden/Stanion glazed ware (Lyveden B)	LYST	1225-1400	70	1731	32
Potterspury ware	POTT	1250-1500	5	68	2
Developed Stamford ware	DEST	1150-1300	2	75	2
Scarborough-type ware	SCAR	1250-1350	2	22	2
Saintonge ware	SAIN	1250-1400	3	22	3
Unprovenanced glazed wares	UPG	1200-1500	81	902	32
Totals			*6780*	*139785*	*3322*

Table B.1.4: *Medieval pottery*

B.1.16 Not surprisingly, high medieval wares dominate the Period 2 assemblage at 78% of the total weight. This is the largest medieval assemblage from the Barnwell area, although it is approximately half the size (by sherd count) of the contemporary central Cambridge Grand Arcade assemblage (Cessford and Hall 2007). At most of these sites Ely Ware is the most common fabric group, and at 36% the Harvest Way Period 2 site is no different. East Anglian redwares tend to form the next most frequent group (although they are the largest group at 132–136 Newmarket Road; Spoerry 2016, table 6.2), with sandy coarsewares being relatively frequent at most sites. Hedingham ware appears to be more frequent at this site than some of the others, and SEFEN also appears

relatively common (although whether it is more common on the outskirts of Cambridge than in the centre is yet to be established).

B.1.17 The identifiable forms present in the high medieval group comprised jars (MNV 146), bowls/dishes (MNV 76), jugs (MNV 178), two dripping dishes, two pipkins and a possible lamp. Many of the coarseware jar rims were sharply flat-topped everted types with no necks, most commonly found in Cambridgeshire, Essex, South Suffolk and Hertfordshire in the 13th/14th centuries. Examples of some of the more complete jugs are illustrated in Figs B.1.1–5 and Plates B.1.1–11 (see below for catalogue).

B.1.18 Decoration was generally typical of the fabrics on which it occurred. Few of the coarsewares were decorated, but some had incised line decoration, applied strips or rouletting. The glazed wares were sometimes decorated with applied slip strips (*e.g*. Brill, Grimston, Hedingham), or had white slip painted decoration (particularly the EARs and Mill Green ware). At least two face jugs were represented by fragments of applied 'arms', one in Grimston ware and the other CONCAX.

Late and post-medieval pottery

B.1.19 Table B.1.5 shows the quantities of late and post-medieval wares in the Period 2 assemblage. The late medieval group is dominated by East Anglian redwares, some of which are likely to be Essex products and appear similar to Colchester-type ware (which is also present). It is possible that some of the 'medieval' EAR was also of relatively late date. Only a few sherds are attributable to the LMT production sites to the east of Norfolk and Suffolk, or to sites in Cambridgeshire itself. Occasional sherds from surrounding counties are present, with Bourne 'D' ware being the most frequent of these. Foreign imports include a small group of German stonewares, possible Dutch-type redwares, some green-glazed Saintonge ware and a small sherd of a Spanish tin-glazed earthenware.

Description	Fabric	Date range	No	Wt/g	MNV
Late Medieval Ely ware	LMEL	1350-1500	49	1756	26
Late Medieval Colne ware	CONLM	1450-1550	5	31	1
Transitional Colne ware	CONC	1450-1550	1	11	1
Huntingdon Late Medieval Calcareous ware	HUNCAL	1300-1450	5	58	5
Late Medieval East Anglian Redwares	LEAR	1400-1500	664	14184	300
East Anglian Redware/Late East Anglian Redware	EAR/LEAR	1200-1500	35	963	8
Late East Anglian Redware calcareous	LEARC	13th-15th c.	90	1713	26
Late Medieval and Transitional (Norfolk/Suffolk)	LMT	1450-1600	70	1741	38
East Anglian Redware/LMT	EAR/LMT	1200-1500	15	327	3
East Anglian Redware Sgraffito	EARSG	1350-1500	10	96	8
Late Colchester-type ware	COLS (L)	1400-1550+	151	3821	16
Late Grimston-type ware	GRIL	1350-1500	4	46	2
Late Medieval Hertfordshire Glazed ware	HERTG	1350-1450	48	688	18
Late Medieval Reduced ware	LMR	1350-1500	34	640	19
Late Medieval Oxidised Sandy wares	OSW	1450-1550	23	566	13
Bourne 'D' ware	BOND	1430-1650	103	3524	43
Midland Purple ware	MP	1400-1750	1	28	1
Cistercian ware	CSTN	1470-1550	27	182	24
Surrey Whiteware: 'Tudor Green'	TUDG	1500-1600	18	100	14
Dutch-type redwares	DUTR	15th-17th c.	36	311	11
Siegburg stoneware	SIEG	1500-1630	3	235	2
Langerwehe Stoneware	LANG	1450-1500	1	30	1
Raeren stoneware	RAER	1480-1610	16	228	12

Description	Fabric	Date range	No	Wt/g	MNV
Saintonge late medieval ware	SAIL	1400-1650	17	61	6
Spanish tin-glazed earthenwares	STGE	1400-1600	1	4	1
Late medieval totals			*1427*	*31344*	*599*
Glazed Red Earthenware	GRE	1600-1800	26	601	22
Ely 'Babylon' ware/Post-medieval blackwares	BABEL/PMBL	1500-1700	1	7	1
Post-Medieval Redwares	PMR	1550-1800	30	755	18
Post-Medieval Slipwares	PMSW	16th-18th c.	2	33	2
Surrey-Hampshire Border Whiteware	BORD	1550-1700	1	30	1
Transitional Redwares	TRAN	1500-1600	1	13	1
Frechen Stoneware	FREC	1550-1700	1	2	1
Post-medieval totals			*62*	*1441*	*46*

Table B.1.5: *Late and post-medieval pottery*

B.1.20 Of the Period 2 recorded assemblage, 17.5% by weight is of late medieval date. This is a larger proportion than was found at adjacent sites (Cessford *et al*. 2013; Fletcher 2015b and 2015c), although it is likely that some of the later redwares will have been included with the medieval EARs, as they are difficult to identify with any certainty based on body sherds alone. A similar range of wares is present at all of the local sites.

B.1.21 Identifiable forms in the late medieval assemblage include *c*.70 jugs, 25 mugs, 18 bowls, 5 dishes, 13 jars, 11 pipkins, 9 dripping dishes, 7 chafing dishes, a lid, a cup, 3 cisterns, a costrel, a chicken feeder, and an alembic. Earthenware vessels were generally sparsely glazed with little decoration, although slip decoration was common on the East Anglia redware group, and some sgraffito examples were present. One Hertfordshire glazed ware had a relief applied flower on a small boss.

B.1.22 The much smaller post-medieval assemblage also contains a high proportion of red earthenwares of local or regional origin, plus a single German stoneware and a fragment of Surrey/Hampshire Border ware. Some or all of this material may be intrusive in Period 2 contexts. The post-medieval group contains 4 jugs, 3 mugs, 3 jars, 5 bowls, a cistern and a dripping dish.

Modern ceramics

B.1.23 Table B.1.6 shows the quantities of modern pottery recovered. This material is assumed to be intrusive in Period 2 contexts.

Description	Fabric	Date range	No	Wt/g	MNV
Bone China with underglaze transfer-printed and overglaze painted decoration	BCHIN TR6	1810-1900	1	5	1
Creamware	CREA	1740-1830	1	2	
English Porcelain	PORC	1745-1900	2	3	1
Horticultural ceramics	HORT	1700-1900+	9	458	4
Late blackwares	LBW	1800-1900	1	8	1
Late post-medieval redwares	LRW	18th-19th c.	4	103	4
Late slipped redware	LSRW	L.18th-19th c.	3	58	2
Nottingham Stoneware	NOTTS	1700-1900	1	8	1
Pearlware with transfer-printed decoration	PEARL TR	1770-1840	2	5	2
Refined Factory-made Whitewares	REFW	19th-20th c.	5	39	5
Staffordshire-type White Salt-Glazed Stoneware	SWSG	1720-1780	1	9	1
Yellow ware	YELL	L.18th-20th c.	1	10	1
Totals			*31*	*708*	*22*

Table B.1.6: *Modern pottery*

B.1.24 The small quantity of modern pottery includes sherds of slipped redware bowls, pieces of plant pot, English stonewares, fragments of refined whiteware table wares, and some fragments of decorated porcelain/bone china.

Pottery by plot

B.1.25 The Period 2 site has been divided into eight plots. Table B.1.7 shows the distribution based on sherd count.

Plot	1	2	3	4	5	6	7	8	0
Preh		2	1		1	1			
Rom	1			1		2			
LSax	5	5	9		16	14	1	13	
EMed	17	41	53	35	92	85	17	48	
Med	121	1036	663	448	803	2964	471	273	1
LMed	25	80	222	365	242	359	118	15	1
PMed		1	3	25	15	12	6	0	
Mod		4	11	3	1	8	2	2	
Unid		8	4	2		4			
Totals	**169**	**1177**	**966**	**879**	**1170**	**3455**	**615**	**351**	**2**
Wt (g)	*3782*	*23377*	*13450*	*13851*	*20538*	*79009*	*17159*	*7508*	*76*
MNV	*82*	*543*	*663*	*467*	*693*	*1487*	*218*	*241*	*2*

Table B.1.7: *Distribution of pottery by period and site area (sherd count) (0=Layer 2)*

B.1.26 This suggests that the greatest activity was concentrated in Plot 6, but this is probably partly due to the large area of the plot which was taken up by pits, together with the presence of at least three wells. Plots 2 and 5 also had large quantities of pits, plus two wells in the former and one in the latter. The southern half of Plot 1 was outside the excavated area, which probably accounts for the much smaller quantities from this plot, whilst very few medieval pits survived to the rear of Plots 7 and 8.

Plot 1

B.1.27 Pottery from three postholes (relating to Building 1) and nine pits was recorded. Small quantities of abraded medieval wares from the postholes of Building 1 are broadly of 13th-century date. The largest groups were from pits **1214** (47 sherds) and **3537** (45 sherds), with quarry pit **3499** containing only 26 sherds. Cross-links were noted between three vessels in pit **1255** and fill **1278** (pit **1528** plot 4).

B.1.28 The majority of pottery from this plot is of high medieval date, with only a few sherds of late medieval wares (14.8% of the total sherds), of which the majority represents a single vessel (a LEAR pipkin) in pit **3537**. Twenty-four Late Saxon to late medieval fabric groups are represented in this plot. The most common fabrics are SEFEN (37 sherds), MSW/MEMS (29 sherds), LEAR (23 sherds), MEL (15 sherds) and HEDI (14 sherds). Identified medieval vessel forms comprise three bowls, one dish, eight jars, and a jug. Late medieval forms are a jug and a pipkin.

Plot 2

B.1.29 Fifteen pits, an oven and two wells in this plot contained recorded pottery. Six postholes relating to Building 2 contained pottery, but none of this has been recorded. The largest groups are from the wells (see below). Eight pits produced between 27 and 72 sherds each, with the remainder producing only six sherds between them. The oven **3370** contained only two sherds of LYVA.

B.1.30 There are 45 different Late Saxon to late medieval fabric groups in this plot, including one late medieval import. Late medieval wares represent only 7% of the group by sherd

count. The most common fabrics are MEL/MEL+ (419 sherds), MSW/MSGW/MEMS (251 sherds), HEDI (135 sherds), and LEAR (67 sherds). Ten bowls, 30 jars, 23 jugs, and a lamp were identified from their rims in the 11th–14th-century group. Later wares include two bowls, two jars, a jug and two pipkins.

Plot 3

B.1.31 Pottery was recorded from 29 pits, a posthole, a ditch, a layer and a well. Two pits relating to Building 3 contained pottery of broadly 13th–15th-century date, with a few residual and intrusive fragments; six other features relating to this building contained 103g of pottery which has not been recorded. The largest group in this plot was recovered from pit **3451** (289 sherds), with nine other pits producing between 20 and 93 sherds each, the remainder having 18 sherds or less. The well in this plot produced only 60 sherds (see below). A number of cross-links were noted, but most were between fills within individual features, particularly in pit **3451**.

B.1.32 Fifty-six different fabric groups of Late Saxon to late medieval date were found in this plot, including four late medieval imported types (eleven vessels). Late medieval wares are more frequent in this group, representing 23% of the total. Medieval greywares are the most common fabric group (318 sherds), with MEL being represented by 72 sherds, EAR by 80 sherds, HEDI by 60 sherds and LEAR by 137 sherds. Medieval vessels comprise 15 bowls, 23 jars, 14 jugs and a dish; late medieval vessels include two bowls, a jar, seven jugs, a cup, three mugs, and a dripping pan.

Plot 4

B.1.33 Eighteen pits, a posthole, a layer, three tanks and a well were recorded in this plot. The largest groups are from the tanks and well (see below). Apart from pit **99** (41 sherds), all other features contained less than 25 sherds each. Three postholes of Building 4 contained 54g of pottery which has not been recorded. Cross-links were noted between adjacent pits **3093** and **3099**, between pit **3093** and pit **2725** (Plot 6), between pit **2219** and pit **2237** (Plot 6) and between pit **1520** and pit **1621** (Plot 5), as well as several links between the fills of individual pits.

B.1.34 Forty-three individual fabric groups of Late Saxon to late medieval date are present, only one of which is an imported type. This plot contained the highest proportion of late medieval wares (42%), the majority of which came from the well and one of the tanks. In terms of sherd count, COLS(L) is the most frequent fabric (146 sherds) but only 11 vessels are represented. LEAR is the next most frequent (139 sherds), followed by EAR (107 sherds). Medieval greywares are still relatively common (162 sherds), but MEL (39 sherds) and HEDI (38 sherds) are less frequent than in other plots. Identifiable vessel forms of medieval and earlier date comprise 13 bowls, 13 jars, 4 jugs and a dish. Late medieval forms include 6 bowls, 4 jars, 5 jugs, 3 dripping pans, 1 dish, two mugs and a pipkin.

Plot 5

B.1.35 Recorded pottery came from 21 pits, two ovens, a ditch, two layers, a tank, a well and a surface. The largest quantities of pottery were recovered from pits **1794** (273 sherds) (Fig B.1.1), **1741** (147 sherds) and **1621** (130 sherd), tank **2851** (146 sherds) and well **1463** (122 sherds). Other contexts contained less than 40 sherds each. Two postholes of Building 5 contained 26g of pottery which was not recorded. Cross-links were noted between pits **1794** and **1797**, and between pits **1621** and **1520** (Plot 4), as well as a number of cross-links within pit **1741**.

B.1.36 There are 46 individual fabric groups of Late Saxon to late medieval date, including three imported late medieval wares. Twenty-one percent of this plot group is late medieval. Medieval greywares are the most frequent fabric groups (330 sherds), followed by EAR and LEAR (112 and 89 sherds respectively), MEL (86 sherds) and HEDI (68 sherds). Late Saxon to medieval identified forms comprise 11 bowls, 33 jars, 19 jugs and a jar/pipkin. Late medieval vessels include a bowl, a jar, 14 jugs, 5 pipkins, 3 mugs, 2 dishes, 2 dripping pans, a chafing dish and a costrel.

Plot 6

B.1.37 Twenty-four pits, a ditch, a layer and four wells were recorded in this plot. By far the largest group was from well 10 (1869 sherds) and the other wells generally contained large quantities (see below). Pits **1940** and **2096** both contained more than 300 sherds each and there were 118 sherds from pit **2318** and 97 sherds from pit **2237**. The remaining features contained 51 sherds or less. Two features belonging to Building 6 contained 26g of pottery which was not recorded. Cross-links were generally noted within some of the larger features, but also between two pits in this plot and two in Plot 4, as noted above.

B.1.38 There are 65 fabric groups of Late Saxon to late medieval date, including one medieval and five late medieval imported fabrics. Around 10% of this plot group is late medieval. Medieval Ely wares (MEL/MEL+) are most frequent (900 sherds), followed by the medieval greywares (595 sherds), EAR (415 sherds), HEDI (227 sherds), LEAR (142 sherds), SHW (115 sherds) and SEFEN (113 sherds). Late Saxon to medieval identifiable vessels comprise 24 bowls, 3 dishes, 50 jars, 97 jugs, 2 dripping pans and a pipkin. Late medieval wares include 3 bowls, 2 jars, 7 jugs, 2 dripping pans, a pipkin, and 5 mugs.

Plot 7

B.1.39 Pottery was recorded from eight pits, a posthole, a layer and two wells. The majority of sherds was recovered from the wells (see below), all other features containing 19 sherds or fewer. One posthole of Building 7 contained an abraded EMW sherd and a large fragment of a HUNFSW jug base; 7g of pottery from another posthole was unrecorded. Cross-links were noted within the fills of pit **2682**, and possibly between pit **2671** and pit **2237** (Plot 6).

B.1.40 Only 37 different Late Saxon to late medieval fabrics are present in this plot, with 19% of the group being late medieval. No imported wares were identified. The most frequent fabric group is EAR (203 sherds), followed by HEDI (99 sherds) and LEAR (66 sherds). Medieval coarsewares are relatively rare in this plot, perhaps suggesting a later date for its establishment. Identified medieval forms comprise four bowls, a dish, five jars and 14 jugs. Late medieval forms include 3 jugs, 5 mugs and a lid.

Plot 8

B.1.41 Ten pits and a layer contained recorded pottery. The largest groups were from pits **1644** (74 sherds), **1853** (68 sherds), **1783** and **1630** (59 sherds each). Possible cross-links were noted between pits **1599** and **1644**, and within pit **1853**.

B.1.42 There are 32 different Late Saxon to late medieval fabric groups in this plot and no imported wares are present. Late medieval wares form only 4% of the group. The most frequent fabrics are medieval greywares (92 sherds), medieval Ely ware (80 sherds) and HEDI (38 sherds). Jars are the most common identified form (12 vessels), and there are 9 bowls, 2 dishes, 7 jugs and a ‘ginger jar’. One late medieval jar was also identified.

Key Groups

B.1.43 Pottery from the clay-lined tanks, wells and one large pit was recorded in greater detail than the rest of the Period 2 assemblage. The assemblages from these features are described below.

Clay-lined tanks

B.1.44 Four clay-lined tanks were excavated and assigned to Period 2: Tank 1 (**3137**/**3074**), Tank 2 (**3076**), Tank 3 (**3280**) and Tank 4 (**2851**). A total of 398 sherds (4.396 kg) from *c*.203 vessels was recovered from these features. Table B.1.8 shows the fabric quantities (MNV).

Pot period	Fabric	Tank 1	Tank 2	Tank 3	Tank 4
Prehistoric	PREHIST				1
Roman	RSGW			1	
Late Saxon	NEOT				1
Early med	EMEMS		1		3
	EMSHW		2		1
	EMW				1
	SCASS		2		1
Med	BRIL	3	3		4
	COLS		2		7
	EAR	2	13	5	14
	GRIM		1		2
	HEDI		10	2	9
	HEDIC				6
	HUNFSW				3
	LYST		1		
	LYVA		1	2	
	MEL	1	6		5
	MEMS	2	10		9
	MGF	1	1		1
	MSGW	3		3	
	MSW	2	10	2	14
	SEFEN		4		1
	UPG	3	1		2
Late med	CSTN				1
	EAR/LEAR	1		1	
	EAR/LMT	1			
	GRIL		1		
	HERTG	1	1		
	LEAR	4	1	2	1
	LMEL		1		
	LMT				1
	RAER			1	
Totals		**24**	**72**	**19**	**88**
Total sherds		*119*	*112*	*21*	*146*
Total wt (g)		*2193*	*614*	*206*	*1383*
Ave sherd wt		*18.4*	*5.5*	*9.8*	*9.5*

Table B.1.8: *Quantities of pottery fabrics in the clay-lined tanks (MNV)*

B.1.45 Tank 1 (Plot 4) contained 119 sherds of *c*.24 vessels, recovered from only two of the five fills (upper 3138, basal 3141). A thick layer containing no pottery separated them.

Four vessels were fairly complete, and comprised a LEAR rounded bowl with a sharply everted rim, a LEAR rounded jar with a long everted neck, base fragments of an EAR/LEAR bowl or jar, and the full profile of an EAR/LMT jug with sharply everted rim. The presence of these vessels accounts for the relatively high average sherd weight from this feature, in comparison with the other tanks. Most of the other vessels in this tank were represented by only one or two sherds and were probably residual. Late medieval ceramics were recovered from both fills, suggesting that Tank 1 was probably backfilled in the 15th century at the earliest.

B.1.46 All pottery from Tank 2 (Plot 4) was recovered from the single fill, 3078. There were at least 72 vessels amongst the 112 sherds, the majority represented by body and base sherds only, up to a maximum of 9 sherds per vessel. One BRIL jug rim was present. Two of the vessels in 3078 had cross-links to sherds in Tank 4, an unprovenanced glazed ware and an EAR vessel with white slip line decoration. The large number of incomplete vessels in this tank, together with the sherd links, suggests that this tank was backfilled with midden or make-up material from the surrounding area. Again, late medieval material was present in the fill.

B.1.47 Three fills (3274, 3276, 3277) in Tank 3 (Plot 4) produced pottery, but this group was relatively small with only 21 sherds representing 19 vessels. The largest sherd (48g) was a rim fragment from a LYVA rounded bowl. A sharply everted MSGW jar rim and an internally thickened/bevelled MSW bowl rim were also found. Late medieval pottery was found in two fills, including two body sherds of a Raeren stoneware vessel, suggesting a backfill date in the late 15th century or later.

B.1.48 Like Tank 2, Tank 4 (Plot 5) produced pottery from a single fill (2868), with 88 vessels being represented by 146 sherds. A few vessels were represented by more than one or two sherds: there were body and handle fragments from a EMSHW ?jug, sherds of a UPG jug with triangular beaded rim, and fragments of a LEAR jug with an upright plain rim and wide strap handle. A high proportion of the group was abraded and much of it was likely to be residual. Cross-links with Tank 2 suggest that these adjacent features were backfilled using the same soil deposit, despite being in different plots, probably in the 15th century.

*Quarry pit **1741** (Plot 5)*

B.1.49 Five fills (1709–10, 1772–4) of this pit contained 147 sherds (3842g) representing 111 vessels. Table B.1.9 shows the fabric quantities present. No pottery was recovered from the lowest two fills.

Pot period	Fabric	No	Wt/g	MNV	eve
EMed	EMEMS	1	34	1	
	SCAMSW	1	21	1	
	SCASS	1	17	1	0.04
Med	COLS	2	18	1	
	EAR	7	67	6	0.10
	ELEVER	1	10	1	
	HEDI	1	35	1	
	HEDIC	1	59	1	
	HUNFSW	1	9	1	0.05
	MEL	3	96	3	
	MEMS	8	83	8	0.10
	MSW	23	438	18	0.20
	SEFEN	3	104	3	0.15

Pot period	Fabric	No	Wt/g	MNV	eve
LMed	BOND	16	738	4	0.47
	COLS (L)	2	14	2	
	CSTN	6	61	5	0.16
	LEAR	52	1847	40	1.04
	LEARC	2	19	2	
	LMR	2	25	1	
	LMT	2	89	2	0.05
	RAER	3	27	3	0.10
	SIEG	1	6	1	
	TUDG	3	5	1	0.05
PMed	GRE	5	20	4	0.17
Totals		*147*	*3842*	*111*	*2.68*

Table B.1.9: *Quantities of pottery fabrics in quarry pit 1741*

B.1.50 Late medieval pottery was recovered from all five fills of the pit, and there were cross-links between several vessels which occurred in at least four of the fills. This suggests one backfilling episode, or possibly several episodes using the same source of soil.

B.1.51 Amongst the identifiable medieval vessels in this group were a SCASS bowl, an Ely ware jug, a Hunts Fen Sandy ware bowl, a SEFEN jug, two EAR jugs, and three medieval greyware vessels (jug, bowl and jar). The medieval group as a whole had an average sherd weight of 18.6g, whilst the late medieval group was higher at 30.3g. This, together with the degree of abrasion, indicates that the medieval material was residual in this context.

B.1.52 Later medieval wares included two LEAR chafing dishes, a LEAR costrel, a LEAR dripping pan, four LEAR pipkins/jars, two Bourne 'D' jugs, a late Colchester-type ware bowl, three Cistercian-type or Babylon ware mugs, an LMT dish, a 'Tudor Green' dish/cup, a Raeren mug, and two possible GRE (or Dutch-type redware) mugs. The late medieval group contains elements which relate to cooking, storage and table ware. Although this material pre-dates the Magpie Inn, which was built on this plot in 1737 (Atkins, this volume), the vessels present could potentially relate to an earlier tavern or inn, although they could also be a domestic clearance group from a household of moderate status.

Wells

B.1.53 Between them, the fills of eleven wells (Wells 1–11) in Period 2 contained 4034 sherds (104.408 kg) of pottery, representing approximately 1284 vessels. Table B.1.10 shows the fabric distribution by MNV.

Group	Fabric	Well 1	2	3	4	5	6	7	8	9	10	11
Preh	PREHIST	1									1	
Rom	HORN										1	
	RSGW									1		
LSax	THET			1							1	
EMed	DNEOT	1						3	2	1		
	EMEMS		1			1				1	2	
	EMW											1
	HUNEMW								1		1	
	HUNEMW/FSW								1			
	PAFF		1									
	SCAGS		1									

Group	Fabric	Well 1	2	3	4	5	6	7	8	9	10	11
	SCASS								1			
Med	BRIL	2			2	2	1	1	11	5	2	2
	COLS			2						1		9
	CONCAX	1	3								15	
	CONM										16	
	DEST		1									
	EAR	6	4	15	15	10	6	15	12	10	11	15
	EAR (?21D)			2				3				
	ELEVER	1			1							
	EMEMS/MEMS								2	1	11	
	GRIM	7		1		1	1			3	7	
	HEDI	29	2		8	5	2	2	24	4	40	3
	HEDIC							1			1	
	HUNFSW	2			3	6			4	4	4	
	LYST	1									24	
	LYVA		3							1	17	
	MEL	21	1	1	12	1			4	2	47	
	MEL/MEL+								2		16	
	MEL+	76			3	7	5		3	1	117	
	MEMS	7	10	6	3	11	2	4	3	16	22	4
	MGCOAR			3								
	MGF					1		1	3	2		1
	MSGW	3	3	1	4	4	1	2		12	4	
	MSGW/ELEVER	1										
	MSW	13	3	1	4	6	4	3	7	6	37	22
	SEFEN	9	7			2	1	1	8	3	11	
	SHW	3	2		1	4	3		3	1	36	
	UGBB	1									5	
	UPG	1			3	1		1	1		5	
LMed	BOND											1
	COLS (L)											6
	CSTN											4
	EAR/LEAR			1		1			2		2	
	GRIL								1			
	HERTG	3			1	2		5		2		1
	HUNCAL								1		2	
	LANG					1						
	LEAR	10	1	8	2	6	1	13	2	7		33
	LEARC											3
	LMEL				2						2	3
	LMR			3								1
	LMT											5
	RAER			1								1
	TUDG											1
PMed	BORD								1			
	FREC											1
	GRE											8
	PMR				2						2	
Mod	BCHIN TR6							1				
	LBW											1

Group	Fabric	Well 1	2	3	4	5	6	7	8	9	10	11
	NOTTS											1
	PEARL TR										1	
	REFW										2	
Un	UNID		1	2							2	1
	Totals	**199**	**44**	**48**	**66**	**72**	**27**	**56**	**99**	**84**	**467**	**128**
	Total sherds	*698*	*89*	*60*	*122*	*124*	*37*	*286*	*246*	*153*	*1869*	*358*
	Total wt (g)	*16563*	*2008*	*972*	*2005*	*1106*	*498*	*4758*	*9730*	*2343*	*57104*	*7482*
	Ave sherd wt	*23.7*	*22.6*	*16.2*	*16.4*	*8.9*	*13.5*	*16.6*	*39.6*	*15.3*	*30.6*	*20.9*

Table B.1.10: *Quantities of pottery fabrics in the wells (MNV)*

*Well 1 (**3388**; Plot 2)*

B.1.54 With 698 sherds weighing over 16kg, the group from Well 1 was the second largest from the Period 2 wells. Pottery was recovered from 14 contexts, as shown in Table B.1.11 (running from top to bottom of the well). No significant contexts in this feature were devoid of pottery.

B.1.55 Cross-links were noted between vessels in several layers, indicating backfilling from the same source or possibly movement of some sherds through voids in the fill. Few late medieval wares were identified, but some of these were recovered from the lowest excavated fill.

Context	Preh	EMed	Med	LMed
3386		1	8	
3387			36	
3584	1		22	1
3585			43	2
3587			21	
3588			9	
3636			3	
3637			4	
3638			85	5
3639			20	5
3640			65	6
3641			21	1
3642			40	7
3643			282	10

Table B.1.11: *Pottery quantities by period in Well 1 (sherd count)*

B.1.56 Ely wares were the most frequent fabrics in this group, with medieval greywares and Hedingham glazed ware also relatively common. Most vessels were heavily fragmented and few forms could be reconstructed. Fragments of jugs appeared to be the most frequent finds, including several Ely ware examples with near-upright rims, rounded bodies and sagging bases (*e.g*. Plates B.1.9 and B.1.10). A Grimston ware shouldered jug, an early Everton ware rounded jug and several Hedingham ware jugs with Rouen style decoration were also noted. Other vessels included several coarseware bowls and jars.

*Well 2 (**3470**; Plot 2)*

B.1.57 Eighty-nine sherds representing 44 vessels came from this well. Table B.1.12 shows the quantities by fill. No cross-links were noted in these fills. Two layers in the well did not produce any pottery.

Context	EMed	Med	LMed	Un
3468	2	9	1	
3469		14		
3626		7		
3628		18		1
3629	1	36		

Table B.1.12: *Pottery quantities by period in Well 2 (sherd count)*

B.1.58 Medieval sandy greywares were the most frequent fabric group in this well, followed by SEFEN. Only one vessel was identified as medieval Ely ware (Plate B.1.11). Two vessels of Hedingham glazed ware were represented by 28 sherds. The only late medieval sherd was recovered from the upper fill and was probably intrusive in this group, which is stratigraphically the earliest well in Plot 2. This group contained a significantly greater proportion of jars than was seen in Well 1, and most vessels were unglazed. Other forms included an EAR bowl, a Developed Stamford Ware spiked lamp (Plate B.1.1), and a Paffrath 'ladle' (Plates B.1.12–13).

*Well 3 (**784**; Plot 3)*

B.1.59 Only 60 sherds were recovered, representing 48 vessels. Table B.1.13 shows the quantities by fill. No cross-links were noted in these fills. Four layers between 779 and 1245 contained no pottery.

Context	LSax	Med	LMed	Un
778		6		
779		7	5	2
1245		12	7	1
1246	3	9	5	
1247		3		

Table B.1.13: *Pottery quantities by period in Well 3 (sherd count)*

B.1.60 Most of the vessels in this well were represented by one or two sherds only. EARs and LEARs were the most frequent find. Jugs, bowls and jars were all present, with jugs being the most common identifiable form. The largest pieces were five sherds of a COLS pipkin, a rim/handle sherd of a EAR/LEAR jug, and a single sherd of a LEAR rounded bowl. There were no late medieval wares in the lowest fill, but only three sherds were recovered from this level.

*Well 4 (**1463**; Plot 5)*

B.1.61 This well contained 122 sherds of 66 vessels. Table B.1.14 shows the quantities by fill. Possible cross-links were noted between some of the upper and middle fills, but not with the basal fill. The upper three fills of the well and a thick deposit between 2509 and 2513 did not contain any pottery.

Context	Med	LMed	PMed
1464	7		3
2328	4		
2329	15		
2509	32	5	
2513	56		

Table B.1.14: *Pottery quantities by period in Well 4 (sherd count)*

B.1.62 The lowest fill (2513) contained sherds of several EAR and MEL/MEL+ jugs, with late medieval wares not found until higher up (2509). The range of wares in the basal deposit suggests that the well was in use up to the 14th century, but may have partly

silted up before it was completely back-filled. The most common fabrics overall were EAR, MEL/MEL+ and HEDI, and the majority of vessels appeared to be glazed jugs but most were represented by only a few small sherds. Post-medieval sherds were found in the uppermost fill, perhaps representing slump of later layers into the top of the well, or deliberate final closure in the post-medieval period.

*Well 5 (**1747**; Plot 6)*

B.1.63 This well contained 124 sherds of 72 vessels, with the lowest average sherd weight from any of the wells. Table B.1.15 shows the quantities by fill. No cross-links were noted in these fills.

Context	EMed	Med	LMed
1743		41	10
1745	1	25	16
1746		18	
1792		1	
1793		3	1
2322		8	

Table B.1.15: *Pottery quantities by period in Well 5 (sherd count)*

B.1.64 Medieval coarsewares were a relatively frequent component of this group, but the most common fabric was EAR, followed by LEAR and HEDI. One of the lowest fills contained a single small late medieval sherd, which could be intrusive at this level. Jugs were the most frequently identified form, but some jars and bowls were also present. One Langerwehe drinking jug was present in the upper layers.

*Well 6 (**1750**; Plot 6)*

B.1.65 Only 37 sherds of 27 vessels were recovered from this well. Table B.1.16 shows the quantities by fill. No cross-links were noted in these fills.

Context	Med	LMed
1751	27	2
1752	8	

Table B.1.16: *Pottery quantities by period in Well 6 (sherd count)*

B.1.66 The largest sherds were two pieces of a Grimston ware jug base from the lower fill. By count, the medieval coarseware group was the largest, followed by MEL+ and EAR. Late medieval sherds were recovered from the upper fill, where they were probably intrusive as this well was stratigraphically earlier than Well 5.

*Well 7 (**1927**; Plot 7)*

B.1.67 This well produced 286 sherds representing 56 vessels. Table B.1.17 shows the quantities by fill. Cross-links were noted between the lower fills, and there may be fewer vessels represented than the MNV suggests. Several layers in this well did not produce pottery, the largest gap being between 2861 and 3291.

B.1.68 East Anglian redwares (EAR and LEAR) form the largest group in this well, with several large parts of slip-decorated jugs present. Fragments of up to five HERTG and one UPG jugs were also found, and the majority of vessels appeared to be jugs. Late medieval wares occur throughout.

Context	EMed	Med	LMed	Mod
1917		3		
1922		1	1	
1924		3	1	

Context	EMed	Med	LMed	Mod
1926		1		
2860	2	5		
2861			2	
3291		19	8	
3292	1	4		
3293			1	
3294		2	1	1
3295		122	39	
3296		19	12	
3297		31	7	

Table B.1.17: *Pottery quantities by period in Well 7 (sherd count)*

*Well 8 (**1939**; Plot 7)*

B.1.69 There were 246 sherds of 99 vessels in this well. Table B.1.18 shows the quantities in each fill. Cross-fits were noted between vessels in the lower fills.

B.1.70 In this group, HEDI was the most frequent fabric, with 90 sherds of 24 vessels. Sherds of EAR/LEAR, BRIL, SEFEN (Fig B.1.2, Plates B.1.2–4) and MEL were also relatively frequent. Late medieval wares were found throughout, but the only post-medieval sherd was from the upper fill. Jugs were again the most frequent vessel form, and a few jars were present, but no bowls were identified with certainty.

Context	EMed	Med	LMed	PMed
1933		1	1	1
1937	1	3	1	
1938	3	6	1	
2852	2	12		
2854		32		
3161		5		
3163		2		
3248		37	1	
3249		38		
3250		72	12	
3253		14	1	

Table B.1.18: *Pottery quantities by period in Well 8 (sherd count)*

*Well 9 (**2412**; Plot 6)*

B.1.71 This well contained 153 sherds of 84 vessels. Table B.1.19 shows the quantities of pottery by fill. A few cross-fits were noted between upper and lower fills. A few of the thinner layers did not produce pottery, but the most significant gap was between 3129 and 3131.

B.1.72 Medieval coarsewares were the largest group in this well, followed by EAR and LEAR. Jars and bowls were frequent, but jugs were the most frequent identified form. More complete vessels included a COLS baluster jug, a LEAR rounded bowl and a MSW flared bowl. The lowest fills contained 13th/14th-century sherds which were moderately abraded, with late medieval wares occurring from the mid fills upwards. The basal fill contained five sherds of a single MSGW base.

Context	Rom	EMed	Med	LMed
2426			8	
2428			4	
2423		1	2	
2869			34	13
3087			5	
3088		1	30	10
3090			19	8
3128			8	
3129	1		4	
3131			5	

Table B.1.19: *Pottery quantities by period in Well 9 (sherd count)*

*Well 10 (**114/2554**; Plot 6)*

B.1.73 Well 10 contained the largest assemblage of any single feature, at over 57kg, 1869 sherds of *c*.467 vessels. Table B.1.20 shows the distribution by layer and period. A number of cross-fits were identified through the fills.

B.1.74 The majority of pottery in this group was of high medieval date. MEL and MEL+ were the most frequent fabrics (Plate B.1.18), with HEDI, LYVA, SHW, medieval greywares, SEFEN and Colne-type wares also relatively common. Jugs, bowls and jars were all relatively common. Larger pieces included a MEL+ dripping pan, fragments of several MEL and MEL+ rounded jugs (mostly in fill 3146; Plate B.1.8), a HEDI rounded jug (Plate B.1.5), at least one SHW rounded or shouldered jug, two MEMS rounded jugs (Figs B.1.3–4) and a SEFEN rounded jug (Fig B.1.5, Plates B.1.6–7). Two unidentified sherds had been subject to burning and may be fragments of crucibles, wasters or possibly just pieces discarded from hearth rakings. Late medieval wares were found in the basal fill (3269) but not in the slump layer (3267) which appears to pre-date it. Post-medieval and modern wares were found in the upper fill only, probably related to a drain which cut through the feature.

Context	Rom	LSax	EMed	Med	LMed	PMed	Mod	Un
113				3		2	3	
2555				11	1			
2556				6				
2557				27	2			
2558				18				
2866			1	59	5			
2867		2	1	115	2			
3146	1			402				1
3213				20				
3266				202				
3268				36				
3269			1	865	2			
3267				79				

Table B.1.20: *Pottery quantities by period in Well 10 (sherd count)*

*Well 11 (**1456**; Plot 4)*

B.1.75 This well contained 358 sherds of 128 vessels. Table B.1.21 shows the quantities by fill. Cross fits were noted between the upper three contexts (1457–60), and within the lower contexts, but not between the two groups. The upper fills have been assigned to Period

3, but are recorded here for consistency. Layer 1458 (between 1459 and 1457) and layer 2370 (between 2369 and 2371) contained no pottery.

Context	EMed	Med	LMed	PMed	Mod	Un
1460		3	11	2	2	
1459		1	6	1		
1457		17	38	7		1
2217		12	7			
2248		12	1			
2249		14	8			
2369	1	49	19			
2371		2				
2414			144			

Table B.1.21: *Pottery quantities by period in Well 11 (sherd count)*

B.1.76 The upper fills contained a high proportion of late medieval wares, particularly LEAR, along with some post-medieval and modern material, the latter probably intrusive. Vessels included jugs, mugs, dripping pans, bowls, a cistern, a pipkin and a 'chicken feeder'.

B.1.77 The basal fill contained two COLS(L) vessels, represented by 134 sherds, along with fragments of two other late redware vessels. In terms of vessel count, MSW was the most frequent fabric, followed by LEAR and EAR. Identifiable forms included a near-complete COLS(L) rounded jug with a firing defect in the base which had caused it to crack, small fragments of four other jug rims (BRIL, EAR, LEARC, LMEL), three bowls (COLS, LMR, MSW), and an LMT mug.

Summary and discussion

B.1.78 A small quantity of pottery in the Period 2 assemblage was of prehistoric and Roman date. Both groups were residual in medieval contexts. At the other end of the assemblage's date range, small quantities of post-medieval and modern pottery post-date this period group and are likely to be intrusive from later features and layers. The bulk of the assemblage is broadly of 11th–15th-century date, but the very earliest material (11th–12th century) in this range is also mostly residual.

B.1.79 The majority of the assemblage was recovered from wells, pits and tanks, with smaller quantities being derived from ditches, postholes and other negative features. Eighteen of the 178 features included in this study produced more than 100 sherds, whilst 78 features contained ten or fewer sherds. Larger quantities may be evidence for deliberate rubbish disposal in open features, particularly in the large quarry pits and wells, which seem to have been used for this purpose once their primary function was completed. However, several of the larger wells had layers of silting from which no pottery was recovered, suggesting that backfilling was sporadic.

B.1.80 The well groups varied considerably in their content, with some producing only a handful of sherds and others containing many hundreds. Fabrics were also quite variable and may reflect the preferences of the households living in the relevant plots, although in some cases the differences probably relate to date of closure. As seen elsewhere (*e.g*. Coldhams Lane), jugs were often the most common form to be recovered, but only rarely were there near-complete examples – the presence of two such jugs in the basal fill of Well 11 may be evidence for their use to collect water and eventual breakage and discard *in situ*. Less complete jugs occurring throughout the fills are perhaps harder to explain, but if the wells were backfilled with surrounding soil, it is possible that these jugs were also broken whilst collecting water and simply discarded

near the well head. This would also explain the cross-fits found within many of the upper fills.

B.1.81 Much of the assemblage is domestic in nature, although there are hints of a tavern assemblage in Plot 5 (pit **1741**), and possible crucible fragments and an alembic have been identified, suggesting some industrial use of pottery. Whilst most of the fabrics and forms are typical of the area, there are hints at growing prosperity in the later medieval period with some fine table wares present in the assemblage, and even a small sherd of a Spanish tin glazed ware, a rare find even in urban contexts of the period.

B.1.82 Evidence from the key groups suggests that many of the features, whilst in use during the 13th/14th centuries, were eventually backfilled in the later medieval period, perhaps in an attempt to level the area of the backlots, where pit digging seems to have largely ceased in Period 3.

Illustration Catalogue

B.1.83 **Fig B.1.1; Mill Green Fineware.** Wheel-made biconical **jug**, having a long slender neck with broad throwing grooves or cordons, and an upright rim, internally thickened and bevelled. The pulled or pinched lip does not survive, but part of the long narrow throat does. A thickened strap handle springs from the neck slightly below the rim, with finger impressions or 'ears' either side of the handle where it joins the neck. There are three thumbed/pulled impressions at the top of the handle and four incised grooves along its length, with a central row of small holes as further decoration. Internally, where the handle has been joined to the body below the rim is a small indentation and a crack at the point where the plug of the handle would have been inserted; at the lower attachment point are many finger impressions and thickening of the body wall. The biconical body of the vessel is somewhat squat, while the base is sagging with groups of three thumbed/pulled feet.

B.1.84 The jug is decorated with white slip, vertical lines around the neck that are absent below the handle and a lattice of slip lines around the upper body. Applied, raspberry-stamped, white slip pads are located apparently randomly within the lattice and around the neck. One complete and two incomplete raspberry-stamps survive and the scars of others can be seen, although these appear to have been lost prior to firing as the scars are glazed over. The decorated portions of the jug are mostly covered with a thin clear glaze with some copper green mottles. These mottles are most densely located on the areas of slipped decoration, suggesting that these areas were dusted with copper prior to glazing. Dull brick-red surfaces and margins with mid grey core, smooth micaceous fabric. Pit **1794** (1862). (Spoerry 2016, 240, fig. 9.76, HM281).

B.1.85 **Fig B.1.2; South-east Fenland Medieval Calcareous Buff ware.** Near-complete large rounded **jug**, having a relatively upright neck and everted rim with a near-flat upper surface and internal thickening (beaded) with a pulled or pinched spout. The whole rim, although possessing a flat upper surface, is dished, being higher at handle and lip. A strap handle is luted to the body directly below the rim: the handle has a wide, shallow vertical central groove that is decorated with stabbing, a line of three slashes at the top of the handle, then offset pairs to the base of the handle where the slashes increase in number. The upper edges of the handle are lightly thumb or finger impressed. The body of the vessel is decorated with widely spaced incised lines or girth grooves, over which lie thumbed applied strips, of which one survives. The base is sagging and obtuse-angled. Buff surfaces, buff-orange margins and pale grey core (only present in the thickest areas of the vessel). Slightly sandy feel, hard fabric, moderate fine and medium

quartz, some of which is iron-stained, occasional red-brown particles and calcareous inclusions. Well **2554** (3269). (Spoerry 2016, 202, fig. 9.54, HM133).

B.1.86 **Fig B.1.3; Medieval Essex-type Micaceous Grey Sandy ware.** Wheel-finished, rounded, almost globular, **jug**, everted neck and externally thickened and rounded rim with pulled or pinched lip. An undecorated, flattened oval rod handle springs directly from the rim, with some evidence of the joining technique evident in the clay smeared inside the rim; at the lower attachment point are finger impressions in the internal body wall. There are well defined incised grooves on the neck and body, to the level of the lower handle attachment point, where they are blurred by the handle attachment. The vessel is possibly knife-trimmed around part of the lower body, with sagging base and shallow base angle. Mostly dull grey-brown surfaces with some red-brown areas and margins with a mid grey core. Hard-fired and dense with slightly pimply surfaces. Common fine and medium clear and white quartz and common very fine mica. Well **2554** (3269). (Spoerry 2016, 236, fig. 9.75, HM276).

B.1.87 **Fig B.1.4; Medieval Essex-type Micaceous Grey Sandy ware.** Wheel-finished, rounded **jug**, gently everted neck and externally thickened and rounded rim, some internal thickening (beaded), no evidence of a lip and there are well defined throwing grooves or ribs on the neck. The jug has a strap handle which springs directly from the rim with a wide vertical central groove with thumb or finger impressions internally on the rim and on the handle. Mid grey-brown surfaces and red-brown margins with a pale grey core, hard-fired and dense with slightly pimply surfaces. Common fine and medium clear and white quartz and common very fine mica. Well **2554** (3269). (Spoerry 2016, 236, fig. 9.75, HM275).

B.1.88 **Fig B.1.5; South-east Fenland Medieval Calcareous Buff ware.** Small–medium shouldered or rounded **jug**, with an everted, externally thickened and rounded, slightly internally thickened rim. A strap handle is luted to the body directly below the rim: the handle has a wide vertical central groove that is decorated with irregular stabbing that runs almost diagonally down the centre of the handle. The upper edges of the handle are lightly thumb or finger impressed. Buff-orange surfaces and margins with a pale grey core. Slightly rough feel, hard-fired. Moderate medium quartz, some of which is iron-stained, moderate calcareous inclusions, occasional red-brown particles. Well **2554** (3269). (Spoerry 2016, 202, fig. 9.54, HM134)

B.2 Post-medieval and Modern Pottery from Periods 3 and 4

By Carole Fletcher with Collegiate pottery by Craig Cessford

B.2.1 Archaeological works produced a large pottery assemblage from 859 contexts (including evaluation contexts), weighing 429.938kg. During post-excavation, 366 contexts were assigned to the post-medieval period (Periods 3 and 4) and the pottery from these weighs 247.029kg, equating to 54% by weight of the entire pottery assemblage. Of this, approximately 25kg of material from 90 contexts, mostly from levelling layers, were subject to basic recording and spotdating only (Fletcher 2015c). This material will not be discussed within this report. More detailed recording was undertaken for the bulk of the assemblage, with full recording for the key groups including wells, cess pits and cellars.

B.2.2 For the purpose of this report the post-medieval assemblage is 6637 sherds weighing 222.149kg from 276 contexts, including residual material. The condition of the overall assemblage is unabraded to moderately abraded, with a significant number of unabraded and relatively unabraded sherds (4234 sherds, weighing 150.969kg), the

remainder being moderately abraded to abraded or abraded. The unabraded nature of the assemblage is not uncommon where there is a significant modern element within the assemblage, since the sherds of 18th–19th-century pottery have suffered little reworking.

B.2.3 Approximately 11% of the total assemblage across both periods is residual. Two sherds of prehistoric flint-tempered pottery, a single Roman Horningsea sherd and a single Thetford ware sherd were recovered, alongside medieval and late medieval material, as a residual element in Periods 3 and 4. Although this material is intrinsic to the overall pattern of ceramic consumption of the site over time, the medieval and late medieval material recovered is well represented in the Period 2 contexts, is mostly typical of the wares found on other Cambridge sites and is discussed elsewhere in this report (see Anderson and Fletcher App. B.1); this material will not be discussed again here except where the late medieval pottery types continue beyond 1538 and are still a significant element of the post-medieval assemblage, or to note them as a residual element in key later features.

B.2.4 The bulk of the post-medieval assemblage (approximately 52% by weight) is broadly 18th and 19th century (115.030kg) including Collegiate ceramics. The meaning and significance of these ceramics is discussed elsewhere in this report (see Cessford, this Section, below), alongside a large post-Dissolution, 16th–18th-century assemblage (approximately 37%, weighing 81.784kg). See Table B.2.1 for overall quantifications by pottery period.

Ceramic Period	Sherd count	Sherd weight (kg)	MNV
Prehistoric	2	0.013	2
Roman	1	0.061	1
Saxon	1	0.015	1
Early medieval	11	0.114	10
Medieval	657	13.657	324
Late medieval	341	11.358	168
Post-medieval	1541	81.653	599
Modern	4077	115.161	1816
Unidentified	6	0.117	6
Totals	*6637*	*222.149*	*2927*

Table B.2.1: *Pottery by Ceramic Period*

Methodology

B.2.5 The Medieval Pottery Research Group (MPRG) *A guide to the classification of medieval ceramic forms* (MPRG 1998) and *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics* (MPRG 2001) act as a standard, as this project was started before the publication of *A Standard for Pottery Studies in Archaeology* (MPRG *et al*. 2016).

B.2.6 Recording was carried out using OA East's in-house system based on that previously used at the Museum of London. Fabric classification has been carried out for all previously described medieval and post-medieval types using where appropriate Cambridgeshire's type series (Spoerry 2016), and adapting the Museum of London's fabric list for other post-medieval types (*http://www.mola.org.uk)*.

B.2.7 All sherds have been counted, classified and weighed on a context-by-context basis, recording the minimum number of vessels (MNV) for each context with estimated vessel equivalent (EVE) recorded only for the key groups. For the purpose of this report, in the main body of the text certain ceramic types which can be subdivided by decoration type have been grouped together, for example the Pearlwares which

includes vessels that are transfer-printed, slipped or painted. This detail is recorded in the catalogue, which will be deposited with the archive, and the types are listed in Table B.2.2. However, unless there is a significant vessel where the decoration type is important for dating or the decoration style or pattern can be named or identified, the material will be discussed in terms of generic fabric groups such as Creamwares, Pearlwares *etc*.

B.2.8 Cross-fits have been noted between contexts within features and across non-related contexts where distinctive vessel sherds were recognised. Refitting of sherds occurred for a number of vessels within features, which allowed a more accurate recording of minimum vessels counts for some of the 19th-century features. The catalogue is recorded in a Microsoft Access 2003 database and a copy will be deposited with the archive.

Sampling Bias

B.2.9 The open area excavation was carried out by hand and selection made through standard sampling strategies on a feature by feature basis. There are not expected to be any inherent biases. Where bulk samples have been processed for environmental remains, there has also been some recovery of pottery. These small quantities of sherds are abraded, undiagnostic, not closely datable and are therefore not considered in this report.

The Assemblage

Fabric Code	Fabric Name	No. Sherds	Weight (kg)	MNV
A-NTGW	Anglo-Netherlandish Tin-Glazed ware	30	0.310	3
BABEL	Ely Babylon ware	46	1.141	27
BABEL/PMR	Ely Babylon ware/Post-medieval Redware	48	0.464	22
BBAS	Black Basalt ware	7	0.335	3
BBASG	Black Basalt Glazed ware	3	0.039	3
(BEL)FW	Ely Broad Street Fineware	2	0.021	2
BCHIN	Bone China	37	0.365	28
BCHIN LUST	Bone China with lustre decoration	9	0.084	7
BCHIN PNTD	Bone China with painted decoration (including gilded sherds)	37	0.418	18
BCHIN SPRIG	Bone China with sprigged decoration	7	0.071	7
BCHIN TR	Bone China transfer-printed	7	0.025	6
BCHIN TR4	Bone China with colour transfer-printed decoration (green, mulberry, grey etc.)	2	0.007	2
BCHIN TR5	Bone China with underglaze three-colour transfer-printed decoration	1	0.026	1
BCHIN TR6	Bone China with transfer-printed and overglaze painted decoration	20	0.232	11
BICR	Bichrome	8	0.156	6
BLACK	Blackware	1	0.010	1
BOND	Bourne D ware	29	1.134	12
BRIL	Brill/Boarstall ware	1	0.024	1
CASG	Cambridge Sgraffito	1	0.035	1
COLGE	Refined White Earthenware - Coloured-Glazed	31	0.634	13
CREA	Creamware	1005	24.848	311
CREA OTR	Creamware with overglaze transfer-printed decoration (including gilded sherds)	11	0.119	1
CREA PNTD	Creamware with painted decoration	14	0.219	4
CREA SLIP	Creamware with slip decoration	5	0.088	2
CREA TR	Creamware with transfer-printed decoration	4	0.037	2
CREA TR3	Creamware with underglaze brown or black transfer-printed decoration	1	0.017	1
CREA/RFWE	Creamware/Refined White Earthenware	104	1.414	33
CSTN	Cistercian ware	36	0.346	17

Fabric Code	Fabric Name	No. Sherds	Weight (kg)	MNV
DNEOT	Developed St Neots-type ware	1	0.004	1
DRYST	Dry-bodied Stoneware	2	0.015	2
DUTR	Dutch-type Red Earthenware	3	0.099	3
DYE	Dyed-bodied Refined Earthenware	5	0.024	4
EAR	East Anglian Redwares	385	8.268	165
EAR (?21D)	East Anglian Redwares (?Harlow)	18	0.697	4
EAR/LEAR	East Anglian Redwares/Late Medieval East Anglian Redwares	20	0.746	8
EMEMS	Early Medieval Essex Micaceous Sandy ware	5	0.048	5
EMEMS/MEMS	Early Medieval Essex Micaceous Sandy ware/Medieval Essex-type Micaceous Grey sandy wares	4	0.052	3
EMW	Early Medieval ware	1	0.004	1
ENGS	English Stoneware	223	17.580	108
FREC	Frechen Stoneware	48	2.396	18
GRIL	Late Grimston-type ware	2	0.025	2
GRIM	Grimston Glazed ware	11	0.246	6
HEDI	Hedingham Fineware	3	0.041	3
HORN	Horningsea ware	1	0.061	1
HORT	Horticultural ceramics	110	7.647	65
HORT (Burwell type yellow fabric)	Horticultural ceramics (Burwell-type yellow fabric)	8	1.579	1
HUNCAL	Huntingdon Late Medieval Calcareous ware	1	0.017	1
HUNEMW	Huntingdonshire Early Medieval ware	1	0.010	1
HUNFSW	Huntingdonshire Fen Sandy ware	13	0.179	4
IRON TR6	Ironstone transfer-printed and overglaze painted decoration	2	0.191	2
LEAR	Late Medieval East Anglian Redwares	156	5.263	67
LEAR/PMR	Late Medieval East Anglian Redwares/Post-medieval Redwares	10	0.626	8
LMEL	Late Medieval Ely ware	3	0.049	3
LMR	Late Medieval Reduced ware	18	0.825	11
LONS	London Stoneware	18	0.722	13
LSKW	Late Slipped Kitchen ware	30	1.779	16
LSRW	Late Slipped Redware	2	0.120	2
LYST	Lyveden/Stanion glazed ware (Lyveden B ware)	2	0.028	2
MEL	Medieval Ely ware	22	0.380	12
MEMS	Medieval Essex-type Micaceous Grey Sandy wares	40	0.557	34
METS	Metropolitan-type Slipware	8	0.458	1
METS/PMR SLIP	Metropolitan-type Slipware/Post-Medieval Slipwares	1	0.119	1
MGF	Mill Green Fineware	32	0.963	2
MODR	Modern Redware	98	11.120	25
MP	Midland Purple	9	0.503	3
MSGW	Medieval Sandy Greyware	36	0.465	26
MSW	Medieval Sandy Coarseware	50	0.477	39
NOTTS	Nottinghamshire-type Stoneware	67	2.763	32
OSW	Orange Sandy ware	2	0.027	2
PEARL	Pearlware	240	6.812	126
PEARL BW	Pearlware with blue-painted decoration (including shell-edged wares)	96	1.729	48
PEARL ERTH	Pearlware with polychrome-painted decoration in 'earth' colours	1	0.002	1
PEARL PNTD	Pearlware with painted decoration	50	0.616	23
PEARL POLY	Pearlware with polychrome-painted decoration	9	0.130	5
PEARL POLY LUST	Pearlware with polychrome-painted decoration and lustre decoration	5	0.093	1
PEARL SLIP	Pearlware with slip decoration (including sherds with mocha decoration)	50	1.672	40
PEARL SPON	Pearlware with sponged or spattered decoration	48	0.558	13
PEARL TR	Pearlware with transfer-printed decoration	444	8.575	201
PEARL TR3	Pearlware with brown or black transfer-printed decoration	15	0.200	10
PEARL TR4	Pearlware with colour transfer-printed decoration (green, mulberry, grey	16	0.287	8

Fabric Code	Fabric Name	No. Sherds	Weight (kg)	MNV
	etc.)			
PEARL TR6	Pearlware with transfer-printed and overglaze painted decoration	8	0.071	4
PMBL	Post-medieval Black-Glazed Redwares	33	1.565	26
PMR	Post-medieval Redwares	700	52.196	275
PMR SLIP	Post-Medieval Slipwares	122	7.747	37
PORC	English Porcelain	3	0.035	3
PORC PNTD	English Porcelain with painted decoration	6	0.140	5
PREHIST	Prehistoric (flint)	2	0.013	2
RAER	Raeren Stoneware	19	0.987	15
RAER/FREC	Raeren/Frechen Stoneware	2	0.036	2
REFRW LUST	Refined Red Earthenware (lustre)	3	0.109	2
RFWE	Refined White Earthenware	342	4.945	196
RFWE BW	Refined White Earthenware with blue painted decoration	2	0.028	2
RFWE FLOW	Refined White Earthenware with transfer-printed 'flow blue' decoration	15	0.169	13
RFWE LUST	Refined White Earthenware with lustre decoration	18	0.122	4
RFWE PNTD	Refined White Earthenware with painted decoration	27	0.230	17
RFWE SLIP	Refined White Earthenware with slip decoration (including mocha decorated sherds)	15	0.182	13
RFWE SLIP-PNTD	Refined White Earthenware with slip and painted decoration	1	0.005	1
RFWE SPON	Refined White Earthenware with sponged or spattered decoration	13	0.123	12
RFWE SPON1	Refined White Earthenware with cut sponge decoration	16	0.128	8
RFWE TR	Refined White Earthenware with transfer-printed decoration	144	1.749	88
RFWE TR3	Refined White Earthenware with brown or black transfer-printed decoration	11	0.099	8
RFWE TR4	Refined White Earthenware with colour transfer-printed decoration (green, mulberry, grey etc.)	23	0.201	16
RFWE TP5	Refined White Earthenware three-colour transfer-printed decoration	2	0.011	1
RFWE TR6	Refined White Earthenware with transfer-printed and overglaze painted decoration	3	0.065	3
SEFEN	South-east Fenland Medieval Calcareous Buff ware	7	0.094	5
SHW	Siegburg salt-glazed stoneware	6	0.048	6
SIEG	Siegburg salt-glazed stoneware	1	0.016	1
STBRS	Staffordshire Brown Stoneware	1	0.009	1
STMO	Staffordshire-type Mottled ware	38	0.793	18
STRE	Staffordshire-type Redware	1	0.012	1
STSL	Staffordshire-type Slipware	307	9.715	89
STWD	Staffordshire-type White-Dipped Stoneware	50	0.688	21
SWSG	Staffordshire White Salt-Glazed ware	58	0.476	41
SWSG SCRB	Staffordshire White Salt-Glazed stoneware with scratch blue decoration	31	0.797	3
SWSGD	Staffordshire-type Drab White Salt-Glazed Stoneware	4	0.209	1
TGW (including painted sherds and two wall tile sherds)	Tin Glazed Earthenware	70	1.425	246
THET	Thetford-type ware	1	0.015	1
TRAN	Transitional Redwares	105	4.036	49
TUDG	Tudor Green	4	0.008	4
UNID	Unidentified	10	0.475	5
UPG	Unprovenanced Glazed ware	7	0.099	7
WEST	Westerwald Stoneware	8	0.212	8
WHIST	White Stoneware	8	0.289	7
YELL	Yellow ware	206	5.702	78
YELL (san)	Yellow ware sanitary ware	1	0.117	1
YELL SLIP	Yellow ware with slip decoration (including mocha decorated sherds)	205	5.492	74
Total		*6637*	*222.149*	*2927*

Table B.2.2: *Pottery fabrics present in the assemblage*

Post-Medieval

B.2.10 Post-medieval fabrics (*c*.1500–1700) including imports and a number of late medieval fabrics that were still in production after *c*.1500, form 37% by weight of the assemblage comprising mainly mid-16th to18th-century Post-medieval Redwares, including slipwares (822 sherds weighing 59.943kg, approximately 27% of the total post-medieval and modern assemblage). It is likely that the majority of the redwares identified as Post-medieval Redwares and Post-medieval Slipwares are the products of the kilns in Ely, described by Cessford and Hall as Broad Street Glazed Red earthenware *c*.1500–1700, (Cessford *et al*. 2006, 51–58). The Post-medieval Redwares recovered from the Eastern Gate Hotel site are identified as Ely products (Hall *et al*. 2013, 72 tbl 19).

B.2.11 Table B.2.3 records the quantities of fabrics present. Note that the totals given at the end of the table include the late medieval fabrics still in production during this period and that the totals are therefore larger than that indicated in the ceramic period Table B.2.1. The total post-medieval fabric assemblage is somewhat larger than that recovered from the Eastern Gate Hotel site which is recorded as 17.884kg, but the range of vessels and fabrics is similar.

Fabric Name	Date Range	No. Sherds	Weight (kg)	MNV
Anglo-Netherlandish Tin-Glazed ware	1480-1600	30	0.310	1
Ely Babylon ware	1500-1600	46	1.141	27
Ely Babylon ware/Post-medieval Redware	1500-1600	48	0.464	22
Ely Broad Street Fineware	1550-1600+	2	0.021	2
Bichrome	1550-1700	8	0.156	6
Blackware	1600-1900	1	0.010	1
Bourne D ware	1430-1650	29	1.134	12
Cistercian ware	1470-1600	36	0.346	17
Dutch-type Red Earthenware	1400-1650	3	0.099	3
Frechen Stoneware	1550-1700	48	2.396	18
Late Medieval East Anglian Redwares/Post-medieval Redwares		10	0.626	8
Metropolitan-type Slipware	1630-1700	8	0.458	1
Metropolitan-type Slipware/Post-Medieval Slipwares	1600-1700	1	0.119	1
Midland Purple	1400-1750	9	0.503	3
Post-medieval Black Glazed Redwares	1500-1700	33	1.565	26
Post-medieval Redwares	1550-1800	700	52.196	275
Post-Medieval Slipwares	1600-1700	122	7.747	37
Raeren Stoneware	1480-1610	19	0.987	15
Raeren Stoneware/Frechen Stoneware		2	0.036	2
Siegburg Salt-Glazed Stoneware	1500-1630	1	0.016	1
Staffordshire Brown Stoneware	1690-1730	1	0.009	1
Staffordshire-type Mottled ware	1650-1800	38	0.793	18
Staffordshire-type Redware	1650-1800	1	0.012	1
Staffordshire-type Slipware	1650-1800	307	9.715	89
Tin-Glazed Earthenware	1600-1800	48	1.108	24
Transitional Redwares	1500-1600	105	4.036	49
Tudor Green	1500-1600	1	0.003	1
Westerwald Stoneware	1600-1750	8	0.212	8
Total		*1617*	*85.110*	*645*

Table B.2.3: *Late and post-medieval pottery*

B.2.12 There is a moderately broad range of fabrics of local and non-local origin present in the assemblage from a relatively moderate range of sources, some represented by only low numbers of sherds. Wares include those from the Staffordshire industries, Staffordshire-type slipwares, and also Staffordshire Mottled wares. The slipwares are

mostly handled jars with both posset pots and chamber pots present. The chamber pots are recognisable by the presence of slip dots in the upper surface of the everted rim of the vessel; most of the posset pots show sooting around the base of the vessel.

B.2.13 Imported vessels within the assemblage form a small yet significant group, including material from Raeren, Frechen and Westerwald, and a Tin-Glazed Earthenware ring-handled vase, from pit **430**, plot 10, which is almost certainly Anglo-Netherlandish. The ring-handled vase is somewhat fragmented, although most of the vessel is present, and is decorated with the Christogram IHS (Plate B.2.5). According to Mellor, vases of this type 'have been excavated from early Collegiate layers in the suburbs as well as the University area, [in Tudor Oxford] and were clearly cherished by a wide range of society. The presence of ring-handled vases may also have some religious overtones in the unsettled 16th century' (Mellor 1997, 35).

B.2.14 The numbers of Raeren and Frechen vessels recovered are comparable with those recovered from the Eastern Gate Hotel Site recorded by Hall, Cessford and Newman where the post-medieval assemblage produced 17 sherds of Frechen Stoneware and 11 sherds of Raeren Stoneware (Hall *et al.* 2013, 72 tbl 19). By comparison, the somewhat larger post-medieval assemblage from Harvest Way produced 48 sherds of Frechen (2.396kg) representing a minimum of 18 vessels, and 19 sherds of Raeren Stoneware (0.987kg) representing a minimum of 15 vessels, with the addition of a single sherd of Siegburg stoneware, and eight sherds of Westerwald stoneware representing eight separate vessels.

B.2.15 This period is contemporaneous with Period 2 of the Newmarket Road excavation and similar fabrics were recovered there including a Tin-Glazed Earthenware pear-shaped jug recovered from quarry pit **141**/**265**. This vessel is somewhat more complete than the Harvest Way vase and although it does not bear any religious device, it appears to be of the same period as the Christogram vase and may also relate to early collegiate deposits.

B.2.16 A partially complete highly decorated Metropolitan-type Slipware flared bowl was recovered from cellar **1906**, Plot 12, the suggested location of an inn. The bowl's decoration is similar to patterns recorded in Harlow, with the rim pattern of a single wavy line with dots in arcs above and below the wavy line (Davey and Walker 2009, 82, fig 37, 2.9). The remainder of the decoration is close to several designs but has no exact match, and the vessel is missing much of its base.

B.2.17 The post-medieval assemblage also includes drinking vessels, jugs and bowls or dishes alongside two examples of Tin-Glazed Earthenware wall tiles (from pit **1777** on Plot 34, comprising a leg and foot of a figure, and from cellar **1906**, where the tile has painted upon it a vase and flowers); both tiles indicate most likely tiled fireplaces within a residence although not necessarily a domestic one. Also present in the **1906** cellar assemblage were the remains of three Tin-Glazed Earthenware upright candle sticks. The cellar produced a minimum of 75 post-medieval vessels.

B.2.18 The post-medieval assemblage as a whole produced a large number of identifiable forms, including approximately 209 bowls, 33 dishes including four examples of dripping dishes, 103 drinking vessels including tygs, mugs and a funnel-necked beaker, while the 146 jars included pipkins, posset pots and chamber pots, and 64 jugs. Ten vessels associated with lighting and heating included six candlesticks, mostly Tin-Glazed Earthenware, one chafing dish and a possible Dutch oven.

Significant Period 3 features by plot

B.2.19 Overall Plots 12, 34 and 14 produced the largest assemblages of pottery by weight, all over 17kg, for the post-medieval period followed, by Plot 33 and Plot 15, the remainder producing less than 5kg of pottery. Table B.2.4 illustrates the distribution of pottery by sherd weight and count.

Plot Number	3	9	10	11	12	13	14	15	16	32	33	34
Sherd weight (kg)	0.099	3.695	1.973	0.149	17.057	2.070	18.406	7.557	0.070	4.156	13.600	17.540
Sherd count	2	161	85	11	345	71	447	101	7	58	148	243

Table B.2.4: *Distribution of late medieval and post-medieval pottery by plot by weight and count, excluding residual medieval material*

B.2.20 Although some plots produced relatively large amounts of pottery, the amount by feature is often low, therefore only key features on certain plots will be discussed.

B.2.21 Plots 3, 11 and 16 produced almost no post-medieval pottery. Plot 9 produced 3.695kg of pottery relating to Period 3. Cess pit 1424 contained approximately 5.352kg of residual material (Table B.2.5, Plate B.2.20), suggesting that the feature was backfilled with material from mixed features. As the cess pit itself was constructed from material that included architectural stone fragments from Barnwell Priory it was probably constructed post-Dissolution and finally backfilled in the 17th century. The post-medieval assemblage includes Ely Babylon ware, and Cistercian ware drinking vessels alongside Frechen and Raeren Stonewares.

Fabric Name	No. Sherds	Weight (kg)	MNV
Ely Babylon ware	25	0.95	14
Ely Babylon ware/Post-medieval Redware	24	0.286	9
Cistercian ware	13	0.132	2
Dutch-type Red Earthenware	1	0.069	1
East Anglian Redwares	148	2.427	33
East Anglian Redwares/Late Medieval East Anglian Redwares	1	0.005	1
Frechen Stoneware	4	0.093	4
Late Grimston-type ware	2	0.025	2
Late Medieval East Anglian Redwares	66	2.746	11
Late Medieval East Anglian Redwares/Post-medieval Redwares	2	0.269	2
Late Medieval Reduced ware	1	0.014	1
Medieval Essex-type Micaceous Grey Sandy wares	6	0.129	5
Medieval Sandy Greyware	1	0.006	1
Post-medieval Redwares	2	0.157	2
Prehistoric (flint)	1	0.01	1
Raeren Stoneware	7	0.132	5
Refined White Earthenware	1	0.033	1
Refined White Earthenware with colour transfer-printed decoration (green, mulberry, grey etc.)	2	0.058	1
Transitional Redwares	4	0.301	3
Unidentified	1	0.002	1
Yellow ware	1	0.002	1

Table B.2.5: *Pottery present in cess pit **1424***

B.2.22 The key feature on Plot 10 is pit **430**, which produced 30 sherds from a semi-complete 16th-century Anglo-Netherlandish Tin-Glazed Earthenware ring-handled vase, onto which is painted a Christogram, a combination of letters that form an abbreviation for the name of Jesus Christ, in this case the Greek letters IHS, denoting the first three letters of the Greek name of Jesus. These are often referred to as altar vases, although it is most likely a flower vase, and they are often depicted in paintings of the period

(Mellor 1997, 35) The base of the vessel is scratched or marked, perhaps as a sign of ownership.

B.2.23 Plot 12 contained two key features, cellar **1906**, which produced vessels that included the highly decorated Metropolitan-type Slipware bowl and a Tin-Glazed Earthenware drug jar and upright candlestick; a saucer candlestick was also recorded but the fabric was badly burnt and was not identified. Also present were sherds from a Frechen Stoneware Bartmann jug, and various post-medieval vessels including a colander, bowls, handled jars, jugs and a pipkin. Several of the post-medieval Redware vessels were also badly burnt and it is possible that this material represents some of the debris from the 1731 Barnwell fire. Residual medieval material was also present.

B.2.24 Well **1577** produced a number of Late Medieval East Anglian Redware jugs alongside Bourne D ware, Cistercian ware, Raeren Stoneware vessels, Post-medieval Redwares and Transitional Redwares, suggesting that the well itself may have begun its life pre-Dissolution, possibly going out of use in the mid to late 17th century.

B.2.25 Plots 13 and 14 produced pottery from a wide range of features with the majority of material being recovered from the backfill of ditches, no key features were identified by the excavator.

B.2.26 Plot 15 produced a moderate assemblage of post-medieval pottery mostly from pits and a small number of residual vessels in cellar **2474**, including two Staffordshire-type Slipware handled jars (Plates B.2.2–3), one a chamber pot the other a posset pot, and Post-medieval Redware and Post-Medieval Slipware flared bowls. The cellar itself is part of Building 12 which may have been destroyed in the 1731 Barnwell fire and the post-medieval fabrics relate to the original building, but are in part recorded as residual material as the cellar appears to have been backfilled later, possibly in the 19th century.

B.2.27 Cess pit **2136** produced a mixture of residual East Anglian Redwares and Transitional Redwares including a pipkin, alongside Post-medieval Redwares including a large semi-complete dripping dish (17 sherds weighing 2.626kg). A London Stoneware drinking vessel was also recovered.

B.2.28 Plots 32, 33 and 34 produced various features with the post-medieval material being mostly residual in Period 4 features.

B.2.29 The key features in Period 3 all contain residual medieval and late medieval pottery and the origins of some of these features may lie in Period 2 but most were backfilled and disused by Period 4.

1800 to Present

B.2.30 The late 18th/19th to 20th-century or modern material forms the bulk of the pottery recovered from the archaeological works, 115.030kg, a somewhat smaller assemblage than the Eastern Gate Hotel site which is recorded as 227.7294kg. However, the range of vessels and fabrics is similar (see Table B.2.5 for a full list of fabrics present in the Harvest Way assemblage).

B.2.31 The assemblage comprises, most commonly, by sherd weight: Creamwares, Pearlwares, English stoneware, Yellow wares, Modern Redwares and Horticultural fabrics (plant pots) and Refined White Earthenwares. By sherd count Refined White Earthenwares are the third most common followed by Yellow wares, with Horticultural ceramics and Modern Redwares in seventh and ninth place respectively. By weight English Stonewares are the third most common fabric due to the presence of large sherds from bottles and jugs/flagons which would have been used for storing or serving large amounts of liquid. Also present are a number of Late Slipped Kitchen wares as

described by Cotter (Cotter 2000, 254-6). The assemblage is also similar to the Newmarket Road assemblage (Fletcher 2015b) however at Newmarket Road Pearlwares are more common than Creamwares, suggesting that the Newmarket Road assemblage may be slightly later than that of Harvest Way. However, Creamware (*c.*1740–*c.*1830) and Pearlware did exist side by side (*c.*1770–*c.*1840) for much of the 18th and 19th century and this difference may represent variations other than date. Also overlapping with both fabrics are the Refined White Earthenwares (*c.*1780–1900). Although their manufacture may have ended, the various Creamware and Pearlware tea sets and dining services present in the assemblage would have continued in use for some time, often being handed down within a family, between tenants within boarding houses or transferred with the collegiate ceramics to other buildings associated with the colleges or their cooks.

B.2.32 The majority of the assemblage most likely originated in that area now commonly known as the Staffordshire potteries. Although a number of the creamwares, pearlwares and later fabrics may have been produced elsewhere, a number of sherds were marked, either with an impressed stamp and/or a transfer-printed mark, that indicates the manufacturer, and those that have been identified are all from the Staffordshire potteries. In addition, though, certain transfer-printed designs which have been identified may suggest other manufacturers.

Fabric Name	No. Sherds	Weight (kg)	MNV
Black Basalt ware	7	0.335	3
Black Basalt Glazed ware	3	0.039	3
Bone China (all decoration types includes part of dolls head)	120	1.228	80
Refined White Earthenware - Coloured-Glazed	33	0.651	15
Creamware (all decoration types)	1038	25.311	319
Creamware/Refined White Earthenware	104	1.414	33
Dry-bodied Stoneware	2	0.015	2
Dyed-bodied Refined Earthenware	5	0.024	4
English Stoneware	223	17.580	108
Horticultural ceramics (all variants)	116	9.209	65
Ironstone transfer-printed and overglaze painted decoration	2	0.191	2
London Stoneware	11	0.518	8
Late Slipped Kitchen ware	30	1.779	16
Late Slipped Redware	2	0.120	2
Modern Redware	98	11.120	25
Nottinghamshire-type Stoneware	67	2.763	32
Pearlware (includes sherds from two ?figurines)	1034	21.504	481
English Porcelain (all decoration types)	9	0.175	8
Refined Red Earthenware (lustre)	3	0.109	2
Refined White Earthenware (all decoration types includes sherds from two figurines)	632	8.057	382
Staffordshire-type White-Dipped Stoneware	50	0.688	21
Staffordshire White Salt-Glazed ware	61	0.504	42
Staffordshire White Salt-Glazed stoneware with scratch blue decoration	2	0.010	2
Staffordshire-type Drab White Salt-Glazed Stoneware	4	0.209	1
Unidentified	2	0.034	1
White Stoneware	8	0.289	7
Yellow ware (all decoration types and sanitary ware)	412	11.311	153
Total	*4077*	*115.161*	*1816*

Table B.2.6: *Post-medieval and modern pottery*

B.2.33 Pre-eminent amongst the manufacturers currently identified is Wedgwood. Their mark is present on a number of creamware vessels in various contexts including a creamware

plate from cellar fill 2473 (Plot 15) which bears the Wedgwood mark, illustrated by Godden and in use from *c*.1759–1769 (Godden 1991, 657, no. 4074) and pit fill 2736 (Plot 33), which also included a Pearlware plate marked WEDGWOOD. The mark used dates from *c*.1759 onwards (Godden 1991, 657 no. 4075). No 'England' mark was found on any of the Wedgwood vessels, indicating they were all pre-1891.

B.2.34 Plates were also impressed with the name TURNER; one, a Creamware plate from cellar fill 2473, is impressed TURNER inside a large incised circle. Godden indicates the firm of John Turner (Turner and Co.) produced pottery from, *c*.1762-1806 (Godden 1991, 626) with the mark present in use from *c*.1770+ (Godden 1991, 626, no. 3896). A relatively large vessel, possible a serving plate, also recovered from context 2473, was impressed TURNER with the Prince of Wales Feathers. The illustrated mark in Godden is not identical: the word TURNER is larger than the impressed feathers. This mark relates to when John Turner was appointed potter to the Prince of Wales in 1784 (Godden 1991, 626, 3898).

B.2.35 A near-complete saucer (pit fill 2766) bears a transfer-printed mark on the base reading Meakin Bros & Co. (http://www.thepotteries.org/allpotters/726.htm). In context 3319 the base of a vessel bears a transfer-printed mark of a crown above a ribbon upon which is written 'Improved Stone China'. A cross-fitting sherd in context 3327 (Plate B.2.9) bears the lower part of the mark, and an impressed mark of the Crown with the word 'Elkin'; the remainder of the mark is illegible but probably reads 'Knight and co'.

B.2.36 Some transfer-printed designs are identifiable and include, for example, a sherd from a bowl base decorated with flowers, which is marked on the base 'Spode' and the pattern has been identified as 'Geranium', dating to the 18th century.

B.2.37 Other patterns present include, on a jug, several deer in front of a lake (Plate B.2.9) with a distinctive bridge in the mid-ground that has been identified as Osterley Park (Coysh 1974, 56, pl. 72). The arrangement of the image on the transfer-printed jug is slightly different from the vessel shown by Coysh (1974). A soup tureen illustrated in a sale catalogue described as an Osterley Park pattern produced by Ridgeway *c*.1820-30 (https://www.the-saleroom.com/it-it/auction-catalogues/tooveys/catalogue-id-srtoo10042/lot-af878ff8-4e8a-4ca1-943c-a45200381e42) shows the extra deer present on the jug sherd from Harvest Way but absent on the Coysh example. Unfortunately, the base of the jug is not present and as a result no manufacturer can be established. A fragment of a transfer-printed plate of 'Boy with Buffalo' pattern was recovered. The pattern was used by various manufacturers, including Spode and Turner.

B.2.38 A fragment from a Creamware jug has a partial compass transfer printed in black (Plate B.2.6). The illustration is part of a design known as 'Come Box the Compass'. An example of a similar transfer print is illustrated by Williams-Wood (1981). This example comes from the Low Ford Pottery, South Hylton (*c*.1795-1864) on the River Wear, Sunderland. The other side of the Sunderland jug depicts a sailing ship; the jug itself is dated *c*.1800–1804 (Williams-Wood 1981, 206–7, fig. 136). The 'Come Box the Compass' design was used by various factories and a Staffordshire or Liverpool example on a *c*.1800–1810 pitcher can be seen online (http://northeastauctions.com/product/come-box-the-compass-and-british-ship-english-creamware-black-transfer-printed-jug-staffordshire-or-liverpool-1800-10). The sherd from cellar fill 2191 does not exactly match either of the observed examples and the manufacturer is unknown.

B.2.39 Sherds from two vessels were recovered from pit fill 2495. The more complete is from a rectangular bowl or dish internally decorated with a transfer print identified as 'Italian Ruins' (Plate B.2.7) and a border pattern of barley and hops, marked on the reverse

'Semi-China' within a faux Chinese border. The second vessel is represented only by a base sherd. The maker is unknown but the pattern is shown in Coysh and Henrywood, (Coysh and Henrywood 1984, 193–4). A plate of this design by Minton is held by the V&A (http://collections.vam.ac.uk/item/O345985/italian-ruins-dish-minton-co). The design is, like many others, copied and used by numerous producers.

B.2.40 Unidentified patterns include a blue transfer-printed scene with cattle in the foreground, a building in the mid ground and a camel in the distance; and a vessel with a church in background with, in the near distance, a cottage and maypole with dancers, in the foreground there are ducks/birds in a meadow.

B.2.41 The most common design on all transfer-printed ceramics was Willow Pattern-type in its many variations.

B.2.42 Collegiate ceramics were recovered from several features and are discussed by Cessford (this Section, below). Further sherds were recovered after his initial identification, but are mostly further examples of vessels with names of cooks or colleges already seen in the Harvest Way assemblage or in the Eastern Gate Hotel Assemblage.

B.2.43 This period assemblage also produced a large number of identifiable forms including one candlestick, one partial dolls head and fragments from five figurines. The majority of the pottery consists of approximately 386 bowls, 543 dishes of which a minimum of 65 vessels are saucers and 352 are plates, a number of serving platters and two fish or meat drainers. There are 217 drinking vessels including mugs, cups, tea bowls and a possible chocolate cup. There are also 13 teapots (e.g. Plate B.2.10), 27 lids, four ladles and part of a toilet rim.

B.2.44 Table B.2.7 illustrates distribution of the modern pottery by sherd weight and count. Overall Plots 9, 10, 11, 16, 31 and 36 produced few sherds of modern material. Plots 33, 34 and 15 produced the largest assemblages of pottery by weight for the period, all over 20kg, followed by Plot 32 and Plot 14, the remainder producing less than 5kg of pottery. Although some plots produced relatively large amounts of pottery, the amount by feature is often low, therefore, as with Period 3, only key features on certain plots will be discussed. Modern material from plots 9, 10, 11, 12, 14 and 16 are intrusive sherds or later backfilling of what are recorded as Period 3 features.

Plot Number	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**31**	**32**	**33**	**34**	**36**
Sherd weight (kg)	0.293	0.064	0.098	2.264	1.182	7.156	26.324	0.072	0.065	13.670	50.655	24.347	0.038
Sherd count	23	5	5	117	43	344	927	11	7	388	1741	847	2

Table B.2.7: *Distribution of modern pottery by plot by weight and count excluding residual material*

B.2.45 In Plot 13, eight pits produced low levels of modern pottery with well **931** containing the bulk of the Period 4 assemblage. The well contained no residual pottery, the assemblage comprising English Stoneware jars and bowls, a Late Slipped Kitchen ware bowl and sherds from a Pearlware with sponged or spattered decoration cup and saucer. A candlestick in a White Stoneware fabric was also recovered with the largest quantity of pottery being 28 sherds (weighing 1.356kg) from a minimum of three bowls. A single sherd from a Yellow ware bowl with slip decoration (mocha) was also recorded.

B.2.46 Cellar **2474** on Plot 15 produced a large assemblage of pottery weighing 26.827 kg, of which relatively little material was residual. Table B.2.8 indicates the fabrics present in the cellar assemblage.

Fabric Name	No. Sherds	Weight (kg)	MNV
Black Basalt ware	4	0.047	1
Bone China with painted decoration (including gilded sherds)	13	0.232	6
Creamware	636	14.811	198
Creamware with overglaze transfer-printed decoration (gilded)	11	0.119	1
Creamware with painted decoration	9	0.158	1
English Stoneware	22	2.462	5
Horticultural ceramics	29	3.183	15
Nottinghamshire-type Stoneware	7	0.300	1
Pearlware with transfer-printed decoration	21	0.220	11
Pearlware	28	0.559	12
Pearlware with blue-painted decoration	1	0.003	1
Pearlware with brown or black transfer-printed decoration	1	0.017	1
Pearlware with colour transfer-printed decoration (green, mulberry, grey etc.)	1	0.033	1
Pearlware with transfer-printed and overglaze painted decoration	2	0.015	1
Pearlware with painted decoration	33	0.316	9
Post-medieval Redwares	7	0.270	5
Post-Medieval Slipwares	9	1.221	1
Refined White Earthenware	1	0.000	1
Staffordshire-type Slipware	39	2.163	3
Staffordshire White Salt-Glazed stoneware with scratch blue decoration	26	0.759	1
Tin-Glazed Earthenware	3	0.174	3
Yellow ware with slip decoration (including mocha decoration)	23	0.394	10
Yellow ware	13	0.341	8
Total	*939*	*27.797*	*296*

Table B.2.8: *Pottery present in cellar **2474** including residual sherds*

B.2.47 Vessels present in cellar **2474** include a minimum of 15 plant pots, one teapot, seven lids, four ladles, five sauce boats, jars of various types including 11 chamber pots, 16 drinking vessels, 109 dishes including 84 plates and six saucers, serving vessels and 85 bowls including two tureens, two colanders and a pedestal bowl. The majority of the dishes, bowls and plates and chamber pots are Creamwares, with Pearlware dishes, plates and drinking vessels alongside Bone China cups. A Tin-Glazed Earthenware drug or ointment jar was also recovered alongside a pedestal bowl, and Yellow wares are also present in small numbers.

B.2.48 This cellar, part of building 19, is likely to be of 18th-century date; however it appears to have been backfilled relatively quickly in the 19th century, perhaps to allow for redevelopment of the area. Significant finds include a number of plates marked TURNER (see above), collegiate pottery (see Cessford, this Section, below) and an 18th-century Staffordshire-type White Salt-Glazed stoneware chamber pot with scratch blue decoration with a GR monogram, which would have been surmounted by a crown.

B.2.49 Well **1089** on Plot 31 was lined with locally manufactured yellow bricks and produced relatively little pottery. The most significant sherd is a near complete Pearlware transfer-printed, square (rounded corners) domed lid from a serving vessel and a saucer of Refined White Earthenware decorated in flow blue suggesting it was deposited sometime after 1830.

B.2.50 Plot 32 produced a moderately large pottery assemblage mainly recovered from pits, with the key feature being described as a store 1221 associated with Building 14. The bulk of the pottery by weight comprises 18 sherds of Post-medieval Redware representing an MNV of seven bowls. The remainder of the assemblage includes Refined White Earthenware vessels including a jug and a Bone China tea bowl or cup.

Well 228, although a key feature as a well on this plot, produced only a single sherd of Bone China.

B.2.51 Plot 33 produced the largest assemblage of any Period 4 plot with the bulk of the pottery recovered from pits, although several other features produced reasonably large assemblages. Of these, the key feature is cess pit **2199** (Table B.2.9), which produced a wide range of ceramics.

Fabric Name	No. Sherds	Weight (kg)	MNV
Bone China	2	0.048	2
Bone China with lustre decoration	1	0.007	1
Bone China with painted decoration	1	0.003	1
Bone China with transfer-printed and overglaze painted decoration	1	0.031	1
Refined White Earthenware - Coloured-Glazed	20	0.506	4
Creamware	9	0.196	1
English Stoneware	18	3.147	15
Horningsea ware	1	0.061	1
Horticultural ceramics	2	0.156	2
London Stoneware	3	0.152	2
Late Slipped Kitchen ware	2	0.223	1
Late Slipped Redware	1	0.040	1
Nottinghamshire-type Stoneware	1	0.089	1
Pearlware	17	1.356	10
Pearlware with blue-painted decoration	3	0.224	3
Pearlware with painted decoration	3	0.074	3
Pearlware with slip decoration	13	0.595	6
Pearlware with transfer-printed decoration	25	1.194	21
Pearlware with transfer-printed and overglaze painted decoration	4	0.025	1
Post-Medieval Slipwares	8	1.080	3
Refined Red Earthenware (lustre)	2	0.107	1
Refined White Earthenware	10	0.498	7
Refined White Earthenware with transfer-printed 'flow blue' decoration	2	0.099	2
Refined White Earthenware with painted decoration	4	0.069	4
Refined White Earthenware with brown or black transfer-printed decoration	1	0.004	1
Refined White Earthenware with colour transfer-printed decoration (green, mulberry, grey etc.)	1	0.003	1
Yellow ware	9	0.628	3
Yellow ware with slip decoration (including mocha decoration)	10	1.331	7
Total	**174**	**1.946**	**106**

Table B.2.9: *Pottery present in cess pit **2199** including residual sherds*

B.2.52 Vessels present include a minimum of four teapots in Bone China, and Refined White Earthenware-Coloured-Glazed and one teapot lid, several cylindrical bottles including a blacking bottle, and three examples of stoneware bottles produced by J. Bourne of Derby. The bottles' marks are of varying quality and the partial nature of the vessels also hinders the reading of the impressed marks, however the full details are as follows: VITREOUS STONE BOTTLES WARRANTED NOT TO ABSORB J.BOURNE PATENTEE DENBY & CODNOR PARK POTTERIES NEAR DERBY', dated ?1833–1850 (http://mudlarking.blogspot.co.uk/2012/06/). Also a stoneware bottle impressed WS HOBBS DRUGEST CAMBRIDGE.

B.2.53 Also present are plant pots, drinking vessels including mugs and cups (e.g. Plate B.2.11–12), dishes including saucers and plates, jars including chamber pots, a fragment of a London Stoneware miniature character jug, and male head with sideburns. There appears to be a handle scar on the back of the head, the closest

parallel to which is of a character or flask of the Duke of Wellington produced by Stephen Green's Imperial pottery at Lambeth (http://www.mernick.org.uk/BrownJugs/Face/FaceJugs.htm).

B.2.54 Other significant finds are collegiate wares, a Pearlware plate SF285 which on the upper surface of the lip is marked (in black) 'Shippey' in script surrounded by a double lined rectangular frame with rounded corners on the reverse. On the base is the letter H; the following letter is unclear but likely this is 'HENRY'. Also recovered was a Refined White Earthenware oval plate SF308 marked 'CHRIST COLL' (Plate B.2.23): very similar to a 10-inch plate from pit **2609** also located in Plot 34, and likely of the same service.

B.2.55 Well **3325** also produced a moderately large assemblage similar to that of cess pit **2199**. The main differences are slightly fewer Yellow wares, more transfer-printed Pearlwares and over 7kg of Post-medieval Red earthenware sherds equating to 9 vessels, mostly bowls. Specific forms present include plant pots, transfer-printed Pearlware vessels including cups and saucers (Plates B.2.11–12), and a fragment from a jug, on which is depicted part of a tree behind a unicorn which forms the supporter of a partial coat of arms (Plate B.2.8). There is a single word on what appears to be a garter. This is most likely part of an imperial measure. This type of measure would have been present on jugs used in inns and ale houses.

B.2.56 Well **739** produced only a single Refined White Earthenware transfer-printed sherd and three Yellow ware vessels including a sherd from a rounded jar with slip and blue mocha decoration. Well **1051** produced slightly more pottery including a fragment of a large Yellow ware, internally white-slipped mixing bowl of a type still available to purchase in the 21st century, Pearlware plates, Refined White Earthenwares and a large quantity of tile.

B.2.57 Pottery from Plot 34 was recovered from a variety of features, mostly pits, with a significant assemblage being recovered from pit **1995** (Plates B.2.4, B.2.10, B.2.14 and B.2.16), which produced a selection of ten plant pots, including one made in the local yellow fabric most often used in brick making. Other fabrics are represented by 12 Creamware vessels including a fine Creamware plate impressed Wedgwood, 13 Pearlware transfer-printed vessels including the sherd decorated with a variation on boy with buffalo pattern (see above).

B.2.58 Also from this feature was recovered SF312, an 8-inch plate in Refined White Earthenware, with the hand-painted name 'Clayd[on]' on the upper face of the lip (Plate B.2.24). This name is painted in a different hand to that on the plates recovered from pit **401** in the Newmarket Road excavation and detailed by Cessford in the site report (this Section, below). Also recovered, from pit **1914** of the Harvest Way site, was a Pearlware plate sherd SF619 with 'HOPKINS' on the external base of the vessel (Plate B.2.22). Vessels with the name HOPKINS were recorded in the assemblage recovered from the Grand Arcade (Cessford and Hall 2007, 313).

B.2.59 Cellar **2188** (Table B.2.10) produced slightly more than 20kg of pottery including residual material. The largest components by vessel number are Creamwares, with a minimum of 62 vessels including a minimum of 18 plates, and nine rounded bowls. Pearlwares with a minimum of 44 vessels including slipware drinking vessels bowls, cups, saucers and a teapot. By weight the Creamwares still dominate but are followed by the Post-medieval Redware sherds.

B.2.60 Several possible collegiate vessels were recovered but the letters on the vessels are only partial so this is unclear. The fragment from a Creamware jug with the partial

'Come Box the Compass' design was recovered from this feature (see above) (Plate B.2.6).

Fabric Name	No. Sherds	Weight (kg)	MNV
Black Basalt ware	1	0.018	1
Bone China with painted decoration	5	0.050	1
Creamware	234	6.750	59
Creamware with painted decoration	3	0.047	1
Creamware with transfer-printed decoration	4	0.037	2
English Stoneware	2	0.066	2
London Stoneware	1	0.034	1
Late Slipped Kitchen ware	1	0.175	1
Nottinghamshire-type Stoneware	22	1.443	4
Pearlware with painted decoration	6	0.080	3
Pearlware	15	0.252	8
Pearlware with polychrome-painted decoration in 'earth' colours	1	0.002	1
Pearlware with slip decoration	18	0.199	8
Pearlware with transfer-printed decoration	16	0.106	9
Pearlware/Refined White Earthenware	4	0.070	2
Pearlware with transfer-printed and overglaze painted decoration	1	0.011	1
Pearlware with blue-painted decoration	22	0.251	12
Post-medieval Black Glazed Redwares	7	1.043	4
Post-medieval Redwares	39	5.645	18
Post-medieval Slipwares	12	1.216	3
Staffordshire-type Slipware	50	1.822	16
Transitional Redwares	18	1.057	3
Yellow ware	1	0.020	1
Total	*483*	*20.394*	*161*

Table B.2.10: *Pottery present in cellar **2188** including residual sherds*

Discussion

B.2.61 Domestic in nature in all periods, the assemblage indicates occupation involving both the preparation and serving of food and drink. The amount of pottery recovered suggests relatively dense occupation of the area. In the post-medieval period, Mellor suggests that 'something of a minor social revolution occurs with the introduction of fine earthenware mugs and cups with clear lead glazes in the Cistercian style arising from the new technology of the late 15th century […] These drinking vessels continued to gain momentum […] In tandem with an increase in the brewing trade' (Mellor 1997, 35) (Plate B.2.20). This is reflected in the assemblage from Harvest Way, Newmarket Road and the Eastern Gate Hotel.

B.2.62 Imported wares at this point include Raeren and Frechen Stonewares and the later Westerwald Stoneware. The most significant import was recovered from pit **430**, which produced 30 sherds from a semi-complete 16th-century Tin-Glazed Earthenware ring-handled vase, onto which is painted a Christogram, a combination of letters that form an abbreviation for the name of Jesus Christ, in this case the Greek letters IHS, denoting the first three letters of the Greek name of Jesus. This vessel may have come from the Netherlands, while others were produced in Italy. These are often referred to as altar vases, although it is most likely a flower vase, and they are often depicted in paintings of the period (Mellor 1997, 35). According to Mellor, vases of this type have been excavated from early Collegiate layers from the suburbs as well as the University area in Oxford, and were clearly cherished by a wide range of society. The presence of ring-handled vases may also have some religious overtones in the unsettled 16th century (Mellor 1997, 35). Mellor is referring to material excavated from 16th-century

Tudor Oxford; however the presence of later Collegiate pottery of the 18th and 19th century recovered from late features at Harvest Way suggests that this area continued to have strong connections to the colleges of Cambridge.

B.2.63 A small number of other Tin-Glazed Earthenware vessels were identified and include a small number of mid-17th to 18th-century pharmaceutical pots. The small pedestal-based ointment pots have a wide mouth with a slightly everted rim 'under which string could be tied to hold down parchment covers' (Mellor 1997, 7). Tin-Glazed Earthenwares were expensive and their presence indicates a certain status (the poor could ill-afford the products of an apothecary).

B.2.64 There is a low level of burnt material in some contexts and this may relate to deposition of material through clearance after the Fire of Barnwell in 1731. Burnt Tin-Glazed Earthenware pottery was recovered from cellar **1906** and heat-distorted fragments of window glass and late 17th- to early 18th-century natural black glass bottles that have partially de-vitrified by heat/fire were also recovered from the same feature.

B.2.65 The 19th-century material suggests that very little food preparation was occurring, one of the few exceptions being the presence of two Creamware colanders. However, teacups and pots were present. Tea was a universal drink but the teacups may have been used for other purposes in the poorer households and in wider society.

B.2.66 There are suggestions that this area of Barnwell, especially in the 18th–19th century, was involved in amongst other things, what might now be called the entertainment industry. Barnwell contained 10,000 inhabitants, almost exclusively of the very lowest class, and a large proportion of them were supported by thieving and prostitution (Burns 1999, 270). The various Gin Acts of the early 18th century tried to curb the consumption and abuse of gin, and it may be that many of the 18th-century cups were used in the consumption of gin by the inhabitants of 'Barnwell, perhaps at the local dram shops which women were likely to visit more frequently than the local ale houses' (Blocker, Fahey and Tyrrell 2003, 265).

B.2.67 Late 18th–19th-century material may further indicate levels of social status with the continuing connection between the colleges and the site. Material was recovered that is marked with the names of college cooks and colleges themselves, including from Pit **2609**, in Plot 34, which produced a plate with the blue transfer-printed text ‘Christ Coll.’ (SF311). A second example, with identical transfer-printed text, was recovered from Plot 33 from cess pit **2199** (SF308, not seen by Cessford). Further collegiate sherds were also recovered in Plot 33 from pit **2735** (Plates B.2.18 and B.2.19). SF326 and SF327, sherds of two plates with a moulded gadroon rim and a blue transfer-printed pattern, as described by Cessford, and relating to Trinity College, were also recovered from the Eastern Gate hotel site, and Newmarket Road (Cessford 2013 and 2015).

B.2.68 Disposal of food and waste is an issue in urban areas and among the pottery assemblages in both the post-medieval period and the 18th–19th century are chamber pots, designed to collect human waste. In the medieval and later periods this waste material was a valuable commodity but its importance waned in the Victorian era. However, the presence of these chamber pots in the post-medieval period is a glimpse of the night time toilet habits of the past, when indoor plumbing was either non-existent or later only available to the more wealthy members of society. A privy at the end of the garden was common until the early 20th century.

B.2.69 Overall the assemblage helps establish patterns of ceramic consumption from the mid-16th century to the near present. The post-Dissolution assemblage is important in helping to understand the continuation of everyday life for the occupants of what was a

settlement firmly linked to the Priory at Barnwell either by tithes, or employment and trade. The development of the site into the 19th century provides a glimpse of our near past (Plates B.2.13 and B.2.15), one which can so easily be dismissed by calling this material modern and social history rather than archaeology, however as we move further into the 21st century our historical archaeology is becoming more important and demonstrates links between town and gown that might otherwise be lost without this kind of intervention.

Collegiate pottery *(by Craig Cessford)*

Introduction

B.2.70 The practice of marking ceramics intended for use at Cambridge Colleges began in the 1760s, was widespread by *c.*1800, had been universally adopted by the 1840s and continues until the present day (Cessford 2016). All the ceramics in question were probably manufactured in Stoke-on-Trent and were marked during the manufacturing process, using a variety of techniques including hand-painting and transfer-printing. Marked collegiate ceramics have been recovered from a wide range of archaeological investigations in Cambridge, including many discoveries at sites with no direct collegiate associations (Cessford in prep a). A nearby excavation conducted by the Cambridge Archaeological Unit at the Eastern Gate Hotel site (site code EGN12) revealed a large quantity of mid-19th century ceramics associated with Trinity Hall, plus smaller numbers of vessels linked to Clare Hall/College, Gonville and Caius College, King's College, St John's College and Trinity College (Cessford 2014c).

B.2.71 The pottery from the excavations was initially studied by Carole Fletcher, who identified and selected collegiate material for further study by the author. As not all sherds from collegiate vessels are easily recognisable as such, it is possible that some collegiate material (such as sherds without actual collegiate markings but from vessels with distinctive patterns) was overlooked. All dates in this text relate to the manufacture of the vessels; there is evidence for a considerable time lag between manufacture and delay at other sites so depositional dates may be several decades later.

The Assemblage

B.2.72 In total just over 180kg of 18th–20th century pottery was recovered from this site and three collegiate vessels were identified from two features, as well as a single vessel with military associations (Plate B.2.21).

*Pit **2609**, fill 2608, dating based on collegiate material c.1820–60*

B.2.73 This feature produced a single vessel; a plain 10in diameter whiteware plate with the blue transfer-printed text 'CHRIST COLL' (Plate B.2.21) on the upper surface of the marly or lip. The whiteware fabric indicates a date of no earlier than 1805 and more typically 1820+. Stylistically the plate is probably early/mid-19th century. This is the first archaeological evidence for 18th–19th-century ceramics associated with Christ's College (Cessford 2016) and there also appears to be an absence of surviving material in collections (Stovin 1999). The previous absence of marked ceramics might indicate that Christ's did not adopt the practice of commissioning services decorated with a collegiate coat of arms or scene and that it simply used ceramics marked with the college name, which are less likely to be curated or collected and thus survive. One likely reason for this is that both Christ's College and St. John's College were founded by Lady Margaret Beaufort, the mother of Henry VII, and bear the Beaufort arms undifferentiated (*i.e.* unchanged). As St. John's College was the larger institution in the 19th century and did use ceramics marked with its coat of arms this may have inhibited Christ's College.

*Pit **2735**, fill 2736, dating based on collegiate material c.1847–72*

B.2.74 This feature produced two plates: both are probably identical although one is near complete and the other is highly fragmentary. The near complete vessel is a 10½in diameter plate with a moulded gadroon rim and a blue transfer-printed pattern, known as the Byron Groups design; this consists of the floral centre from the Warwick Groups pattern and a botanical border of acanthus leaves used for the Byron Groups (Sussman 1979, no. 68). The transfer-print incorporates the text 'H & P HUDSON TRINITY [COLLEGE]' and has a Copeland mark on the rear; this is the standard impressed mark of 1847+. This must relate to the period when two brothers Henry Hudson junior and Philip Samuel Hudson were running the college kitchens in partnership, after the death of their father Henry Hudson senior in 1838 and prior to the death of Henry Hudson junior in 1872; in conjunction with the manufacturer's mark, this dates the plate to 1847–72. This pattern is relatively well known from surviving examples and other archaeological discoveries; it is unclear when the Hudson family first commissioned this service, but it probably took place in the 1840. The service continued in use for some time, with examples simply marked 'HUDSON TRINITY COLLEGE' being produced at least as late as 1876. It appears likely that it continued in use until Philip Llewellyn Hudson ceased to be college cook in 1888 and there are indications that Trinity continued to use the service until *c.*1896–1900, indicating that it was in use for 50–60 years. There is also evidence that the service could have been in use in non-collegiate contexts as late as *c.*1900–20.

B.2.75 There is also a 10in diameter willow pattern plate marked 'MESS 12' (Plates B.2.18 and B.2.19). Such mess plates come in a wide variety of styles (*e.g.* Coysh and Henrywood 1982, 246; see also Demers 2009). A mess is an area where military personnel socialize, eat, and in some cases live and in the case of the British army, commissioned officers and senior non-commissioned officers belong to messes. As the plate lacks any crest or number to indicate what regiment the mess was part of it is difficult to say anything more, unless documentary evidence turns up any military associations. This plate appears to have been largely complete when deposited and may not have been broken pre-deposition. As mess ceramics were the communal property of the mess and were not supposed to be removed from it this may suggest that it was illicitly taken. By the mid-19th century the willow pattern was the cheapest form of transfer-printed ceramic available (Miller 1980, 4, 28) and had in fact passed its peak in popularity. Although the addition of the 'Mess 12' element would have rendered it somewhat more expensive this would effectively have represented the cheapest form of mess ceramic, excluding undecorated wares, and may suggest that it may come from a mess for non-commissioned officers.

B.3 Industrial Residue

By Peter Boardman

Introduction and methodology

B.3.1 A total of 6.4kg of industrial residue was recovered from the hand excavation (Table B.3.1). The majority of the assemblage consists of small fragments of non-blast furnace ferrous smelting activity.

B.3.2 Pit fill 1795 (Period 2, Plot 5) contains a partial plano-convex base fragment but was not in the primary depositional area.

B.3.3 The large fragment recovered from oven/kiln fill 2607 (period 2, Plot 6) appears to consist of un-combusted fuel, ash and vitrified clay. It has little metallic content to it.

This would suggest that it does not originate from a metallic working area, either smelt or smithy. The feature from which it was recovered was a kiln and is probably the place of its origin.

B.3.4 Posthole fill 707 (Period 3, Plot 14) contains a mixed assemblage of ferrous smelting slag and three small fragments of thin, very dense ferrous slag with vitrified clay attachments. This is indicative of smithy furnace lining. The mix of both smithy and smelting material indicates that this feature is not the primary location for the assemblage.

B.3.5 All other industrial residue material recovered from other contexts (Table B.3.1) was from ferrous smelting activities, none of which can be identified to have taken place on site.

Ctxt	Period	Feature type	Object Name	Wt (kg)	Identification	Comments
1531	2	?	Metal-working debris	0.05	Ferrous smelting debris	non-primary deposit
1764	2	layer	Metal-working debris	0.20	Ferrous smelting debris	non-primary deposit
1795	2	pit	Metal-working debris	1.14	Ferrous smelting debris	Partial PCB
1796	2	pit	Metal-working debris	0.15	Ferrous smelting debris	non-primary deposit
1970	2	pit	Metal-working debris	0.01	Ferrous smelting debris	non-primary deposit
2218	2	pit	Metal-working debris	0.01	Ferrous smelting debris	non-primary deposit
2372	2	post hole	Metal-working debris	0.05	Ferrous smelting debris	non-primary deposit
2607	2	oven/kiln	kiln residue	0.59	kiln remnants?	primary deposit
2664	2	pit	Metal-working debris	0.97	Ferrous smelting debris	some smithing residue
2955	2	pit	Metal-working debris	0.31	Ferrous smelting debris	non-primary deposit
2997	2	pit	Metal-working debris	0.03	Ferrous smelting debris	non-primary deposit
3088	2	well	Metal-working debris	0.03	Ferrous smelting debris	non-primary deposit
3202	2	pit	Metal-working debris	0.01	Ferrous smelting debris	non-primary deposit
3417	2	pit	Metal-working debris	0.20	Ferrous smelting debris	non-primary deposit
3419	2	pit	Metal-working debris	0.08	Ferrous smelting debris	non-primary deposit
3442	2	pit	Metal-working debris	0.08	Ferrous smelting debris	non-primary deposit
3459	2	pit	Metal-working debris	0.09	Ferrous smelting debris	non-primary deposit
3531	2	pit	Metal-working debris	0.15	Ferrous smelting debris	non-primary deposit
Total Period 2				*4.15*		
707	3	post hole	Metal-working debris	1.34	Ferrous smelting debris	non-primary deposit
732	3	Ditch	Metal-working debris	0.02	Ferrous smelting debris	non-primary deposit
754	3	pit	Metal-working debris	0.12	Ferrous smelting debris	non-primary deposit
818	3	Ditch	Metal-working debris	0.04	Ferrous smelting debris	non-primary deposit
917	3	layer	Metal-working debris	0.01	Ferrous smelting debris	non-primary deposit
1141	3	layer	Metal-working debris	0.02	Ferrous smelting debris	non-primary deposit
1147	3	layer	Metal-working debris	0.14	Ferrous smelting debris	"SF 103
1239	3	post-hole	Metal-working debris	0.08	Ferrous smelting debris	non-primary deposit
2025	3	Cellar, Building 12	Metal-working debris	0.26	Ferrous smelting debris	non-primary deposit
2137	3	pit	Metal-working debris	0.14	Ferrous smelting debris	non-primary deposit
2616	3	pit	Metal-working debris	0.06	Ferrous smelting debris	non-primary deposit
Total Period 3				*2.23*		
1113	4	pit	Metal-working debris	0.02	Ferrous smelting debris	non-primary deposit

Table B.3.1: *Catalogue of slag*

B.3.6 All the material recovered, excluding that recovered from 2607, is a product of ferrous working, mostly smelting with a small amount of smithing. None of the material recovered, except from 2607, is a result of primary deposition and no features on site can be identified as be associated with metalworking activities or structures. The assemblage can be said to be the result of 'background' deposition and indicates that

ferrous extraction and working took place somewhere in the vicinity of, but not on, the site.

B.4 Clay Pipe

By Craig Cessford

Summary

B.4.1 The evaluation and excavation produced 882 fragments of clay tobacco pipe weighing 3588g, representing a minimum of 126 tobacco pipes. The material spans the period *c.* mid 17th–mid/late 19th century and is a locally and regionally significant assemblage. Thirteen pipemakers can be identified from the presence of initials or names on 28 pipes; these are predominantly local Cambridge pipemakers, although material from further afield is also present. There are also 15 decorated pipes with no pipemakers marks. Eight individual contexts produced assemblages of five or more pipes that warrant individual consideration. Significant discoveries not previously recognised from archaeological investigations in Cambridge include several pipes decorated with masonic symbols, produced by a local maker William Balls, and Maclure, a pipe manufactured in Glasgow.

Introduction

B.4.2 The archaeological excavations produced a moderately sized assemblage of clay tobacco pipe; totalling 878 pieces weighing 3578g with a stem length of 42.57m (Table B.4.1). In addition 4 stem fragments weighing 10g were recovered during the evaluation phase; the material from the evaluation phase was not examined by the author. The excavation material equates to a minimum of 126 clay tobacco pipes (MNI: Minimum Number of Items). This represents the second largest assemblage recovered from an archaeological investigation in Cambridge, exceeded only by that from Grand Arcade. The assemblage from Harvest Way is considerably larger than that recovered from the nearby Eastern Gate Hotel site, although in some respects the two sites can effectively be considered a single assemblage as the division between them is an arbitrary one (Table B.4.1). All other clay tobacco pipe assemblages recovered from the general area appear to be relatively negligible, for example investigations at Intercell House produced only 20 stem fragments weighing 46g (Atkins in Atkins 2013b, 87). The material from Harvest Way consists of bowls and bowl fragments (110, 1203g), heel/spurs (27, 147g) and stems/mouthpiece fragments (741, 2228g). For quantification purposes re-fitting fragments that appear to represent recent breakages have been counted as one.

B.4.3 The bowls were classified according to Oswald's simplified general typology (1975, 37–41), modified slightly based upon the author's unpublished work on clay tobacco pipes from Cambridgeshire (Table B.4.1). Stem bore dating has not been undertaken as the assemblage does not warrant this form of analysis. The pipes are overwhelmingly of local manufacture. The presence of clay tobacco pipe fragments in a context indicates a date of the late 16th to early 20th centuries (*c.*1580–1910), although in Cambridge clay tobacco pipe fragments are generally rare in deposits prior to 1620 and after 1890. Based upon bowl typology it appears likely that the earliest material in the assemblage dates to *c.*1640–60 (see below).

B.4.4 The clay tobacco pipe industry in Cambridge has been subject to two major studies which provide lists of Cambridge pipemakers (Cessford 2001a; Flood 1976), although both are now somewhat out of date. The earliest clay tobacco pipes recovered archaeologically from Cambridge dating to *c.*1580–1630/40 (which are not thought to be

present at Harvest Way) were probably produced in London. Following on from this almost all pipes recovered from Cambridge were produced locally within the town until the mid-19th century, when a few pipes from Broseley (Staffordshire) and London occur, all of which probably post-date Cambridge being linked into the railway network in 1845. Initially the pipemaking industry in Cambridge was dispersed around several parishes in the historic core of Cambridge, but following the Eastern or Barnwell Fields Enclosure Act of 1807 Cambridge expanded rapidly eastwards. Pipemaking came to be almost exclusively concentrated in this area – where the Harvest Way site is located – by the 1820s, with the exception of one kiln. Clay tobacco pipe production finally ended in Cambridge in the 1890s.

Site	Location	Count	Wt (g)	MNI	Reference
Harvest Way	Barnwell suburb	878	3578	126	This report
Eastern Gate Hotel	Barnwell suburb	384	1072	39	Cessford 2013, 85–87
132–36 Newmarket Road	Barnwell suburb	1296	3361	109	Cessford 2015, 150–159
Barnwell suburb total	*Barnwell suburb*	*2558*	*8011*	*274*	
Grand Arcade plus Christ's Lane	Barnwell Gate suburb	1807 (1501+306)	9960 (6970+1495)	256 (220+36)	Cessford 2007a, 352–56 Cessford 2007b, 84–85
Cornfield Court plus Old Divinity School	Town centre street block	422 (212+210)	2361 (1522+839)	105 (75+30)	Cessford 2008, 224–29 Cessford 2012, 95, 106
Merton Hall	Private residence	165	Unk.	22	Meckseper 2014

Table B.4.1: *Clay tobacco pipe from Harvest Way and selected other Cambridge assemblages*

Temporal Profile

B.4.5 In total 100 bowls could be typologically dated (Table B.4.2), this can also be expressed as a decadal frequency (Table B.4.3). The earliest material recovered dates to *c.*1640–60, paralleling the results from the Eastern Gate Hotel site (Cessford 2013, 85–87). Based upon bowl typology and makers' marks the latest pipes present date to the mid/late 19th century.

Type	Dates	MNI
5	*c.* 1640–60	2
6	*c.* 1660–80	10
7	*c.* 1660–80	1
9	*c.* 1680–1710	12
10	*c.* 1700–40	5
12	*c.* 1730–80	19
22	*c.* 1730–80	2
Early/mid-19th	*c.* 1820–50	2
Mid/late 19th	*c.* 1840–90	47
Total	*c. 1640–1890*	*100*

Table B.4.2: *Clay tobacco pipes dated based upon bowl typology (examples dated based upon pipemakers marks not included as this would distort results)*

Decade	Adjusted decadal bowl count
1640s	0.67
1650s	0.67
1660s	5.5
1670s	5.5
1680s	4
1690s	4
1700s	5.25
1710s	1.25

Decade	Adjusted decadal bowl count
1720s	1.25
1730s	5.45
1740s	4.2
1750s	4.2
1760s	4.2
1770s	4.2
1780s	0
1790s	0
1800s	0
1810s	0
1820s	0.67
1830s	0.67
1840s	10.07
1850s	9.4
1860s	9.4
1870s	9.4
1880s	9.4

Table B.4.3: *Quantities of clay tobacco pipes deposited per decade based upon bowl typology*

Pipemakers' Marks

B.4.6 The names or initials of nine local Cambridge makers are represented on 24 pipes. In addition, two pipes from two non-local makers (London and Glasgow) are represented in the assemblage and there are two pipes produced by two pipemakers whose origin cannot be identified. The relatively low proportion of pipemakers names/initials (28 out of 126 pipes, *c.*22%) is typical of clay tobacco pipes from Cambridge and indeed Cambridgeshire more generally. The bulk of the names/initials present are amongst those that are relatively common in Cambridgeshire; two exceptions are some bowls associated with William Balls that are decorated with Masonic symbols and the first identification of a pipe manufactured in Glasgow from Cambridge.

Cambridge Pipemakers

B.4.7 ***W Balls*****:** three stems marked W·BALLS/CAMBRIDGE with foliate decoration on early/mid 19th-century bowls decorated with masonic symbols and sides and rear with oak leaves on the front were recovered from pit **1995**. One of these also has the initials W/B on the spur. There is also a fourth pipe with a similar bowl and the initials W/B on the spur that has a plain stem, also from fill 1994 (pit **1995**). Another pipe with masonic decoration but lacking a maker's name or initials was recovered from fill 2197 (pit **2199**) (see below). Given his date of birth, William Balls is unlikely to have been an independent pipemaker prior to *c.*1807. He is first attested as a pipemaker in 1813, when he was resident in Barnwell. By 1820 he was definitely a master pipemaker and he continued as a pipemaker until at least 1832, working on George Street (a section of Newmarket Road), and probably until his death in 1836 aged 50. William Balls had a son William Eve Balls who continued the family business at George Street and later King Street until 1851. Pipes marked with the name William Balls or the initials WB appear to be relatively rare, suggesting that William only marked his more ornate products.

B.4.8 Pipes decorated with Masonic symbols originated *c.*1750. Whilst their early use was probably restricted to Masons, by the 19th century it is unclear if their use was still restricted or if they circulated more widely. Their usage has received some scholarly attention (Dallall 2000; White and Beaudry 2009, 220). The two features to produce

pipes with Masonic decoration were located *c.*20m apart in the backplots of different houses fronting Shamrock Passage, a terrace of houses built by 1840. Marked pipes that can be associated with the Balls family are relatively uncommon discoveries from excavations in Cambridge although a few examples are known including one example from the Grand Arcade site. Pipes with Masonic decoration appear to be rare locally and none has previously been recovered at archaeological investigations in Cambridge.

B.4.9 ***H/C***: initials H/C on the spur of a plain mid/late 19th-century bowl (99999). Probably Henry Casey, who was a journeyman pipemaker in 1851 and had become a master pipemaker working on Newmarket Road by 1859. By 1871 he was a pipemaker and publican at the Dog and Pheasant, 121 Newmarket Road. He was last described as a pipemaker in 1891.

B.4.10 ***A Cleever***: two stems marked A·CLEEVER/CAMBRIDGE were found in fill 537 (drain **538**) and fill 2834 (wall foundation **2833**). Thomas Cleever died *c.*1858–61, after which his widow Anne apparently took over his business and is listed in 1864 as working at 97 Newmarket Road. Anne Cleever died in 1864 and pipes marked A Cleever can probably be dated quite closely to 1858–64, as Anne does not appear to have marked pipes with her name whilst her husband was still alive. Despite her short floruit pipes produced by Anne Cleever are relative common discoveries from archaeological excavations in Cambridge.

B.4.11 ***J/C***: initials J/C on two spurs from layer 2790. This could be any one of several members of the Cleever family with the Christian initial J; including James (two individuals), John (three individuals) and Joseph (one individual). All these pipemakers were active in the Newmarket Road area and span the period *c.*1848–83. Pipes with these initials are relatively common discoveries from archaeological excavations in Cambridge.

B.4.12 ***T/C***: initials T/C on eleven spurs with three types of bowls. These include eight plain mid/late 19th-century bowls from fill 2736 (pit **2735**), one mid/late 19th-century bowl with oak leaves on the front and rear of the bowl from 2197 (pit **2199**) and two on mid/late 19th-century two-stage fluted bowls with oak leaves on front and rear of bowl from fill 2736 (pit **2735**). Thomas Cleever is first attested as a pipemaker in Cambridge in 1839 and had probably previously been working in Coventry (1837). He worked on George Street (a section of Newmarket Road). By 1851 he was a publican and pipemaker, employing at least six other pipemakers. Thomas Cleever died at some point between 1852 and 1861. His son Thomas Cleever continued the business until at least *c.*1865 but later moved to London. Pipes with these initials are relatively common discoveries from archaeological excavations in Cambridge.

B.4.13 ***I/K***: initials I/K on the spur of a type 12 bowl (*c.*1730–80) from 1994 (pit **1995**). James Kuquit is first attested in 1713 and died 1750. He worked at 11 Sidney Street (Cessford 2001b) and was one of the few early/mid 18th-century Cambridge pipemakers to mark his products. Pipes marked with these initials are a common discovery on excavations in Cambridge and have also been found further afield at locations including Denny Abbey and Dry Drayton.

B.4.14 ***T/M***: the initials T/M occur twice on spurs, including one associated with a plain mid/late 19th-century bowl, from layer 214 and fill 3321 (?well **3325**). The most probable manufacturer is Thomas Moule, working on Newmarket Road *c.*1830–39. Pipes with these initials appear to be relatively uncommon on excavations in Cambridge, but a few examples are known including one from Grand Arcade.

B.4.15 ***Pawson:*** PAWSON CAMB on a stem with Wyer style decoration from fill 2192 (cellar **2188**). James Pawson worked at 11 Sidney Street between 1786 and 1813 (Cessford 2001b) and produced pipes marked with this relatively ornate form of decoration, which he adopted from his predecessor at the premises, Samuel Wilkinson. His pipes are relatively common discoveries on archaeological excavations in Cambridge and it appears that he ceased to use this style of stem decoration *c.*1800.

B.4.16 ***P/R***: initials P/R on a spur from fill 2324 (pit **2327**). Probably Patrick Ryan, a master pipemaker born in Ireland who was active at Newmarket Road in Cambridge *c.*1849–51, having previously worked in Birmingham (1842) and Warwick (1847) and later moved to Derby (1857–58).

Non-Cambridge Pipemakers

B.4.17 ***C Crop***: pipe marked C CROP / LONDON in cartouche on stem from fill 2324 (pit **2327**). Charles Crop of 36 Great James St, London was active between 1856 and the 1870s and under his sons the firm continued until 1924 (Oswald 1975, 133). Crop was one of the largest mid/late 19th-century pipe producers in London and their products included high quality pipes with ornate bowls. Whilst the bowl does not survive in this instance, the form of the stem and the bowl junction indicates that this was most probably an ornate bowl. A pipe by this maker has previously been recovered in Cambridge at the Grand Arcade site in a deposit dated *c.*1874–81.

B.4.18 ***MacIure***: Although the stamp is not entirely clear this appears to read MACLURE/QUEEN ST/GLASGOW on the rear of a plain mid/late 19th-century bowl from fill 2736 (pit **2735**). Applied stamps on the rear of the bowl in a frame are a relatively common phenomenon of 19th-century pipes from Glasgow (Gallagher 1987, 73), but no pipemaker of this name is listed in the standard publications (Anon. 1987; Gallagher 1987, 101–07). No clay tobacco pipes produced in Glasgow, or indeed in Scotland, have previously been identified from archaeological excavations in Cambridge.

Unidentified Pipemakers

B.4.19 ***J/D***: initials J/D on spur from fill 2197 (pit **2199**) from a mid-19th-century group.

B.4.20 ***P/W***: initials P/W on the sides of a heel of a type 12 bowl (*c.*1730–80) from fill 2016 (ditch **2020**).

B.4.21 There are no known Cambridge pipemaker with these initials, suggesting either an unrecognised Cambridge maker or pipes that were produced elsewhere.

Decorated Pipes

B.4.22 Decorated pipes marked with pipemakers initials or names have already been discussed (see above). Excluding milled rims and simple elements confined to spurs/heels there are 15 pipes with various forms of decoration that lack any form of pipemaker's marks.

1) Seven fluted mid/late 19th-century bowls with oak leaves front and rear and stylised oak leaves on spurs from fill 2197 (pit **2199**). These are relatively common in archaeological assemblages from Cambridge of this period.

2) Five mid/late 19th-century bowls with oak leaves on front and rear of bowl but otherwise plain; three from fill 2197 (pit **2199**) and one from fill 2736 (pit **2735**), plus one from fill 3319 (?well **3325**) also has six pointed stars on heels. These are relatively common in archaeological assemblages from Cambridge of this period.

3) Mid/late 19th-century bowl with Masonic symbols on bowl and circular motifs on spurs fill 2197 (pit **2199**) (for discussion see above).

4) Cross keys pattern plus floral/foliate elements on sides of mid/late 19th-century bowl and circles on spurs fill 1092 (well **1089**). The cross keys pattern appears to have been relatively common locally, but is infrequent from archaeological investigations.

5) Incomplete mid/late 19th-century bowl spurless/heeless type with heavy decoration including horizontal bands on bowl, five pointed stars below and teardrops along stem (99999). This pipe may potentially be a 20th-century novelty item.

Context Assemblages of Note

B.4.23 The overall assemblage contains eight groups from individual contexts that are large enough to be noteworthy; these were defined as those containing five or more pipes. Several of these groups appear to represent rapidly deposited 'clearance' type groups of material (Cessford 2009; Cessford in prep a). One method for considering this is to consider the mean stem length in contexts, as longer fragments typically represent more rapid deposition (Table B.4.4). This suggests that five of the seven assemblages represent rapid deposition, as they have significantly higher mean stem lengths than either the assemblage as a whole or the assemblage minus these assemblages. The three contexts whose values are comparable to the general site assemblage are the smallest groups. Based upon excavations elsewhere in Cambridge most assemblages with ten or more pipes (excluding residual items) have a non-domestic origin and are associated with inns or other establishments.

	MNI of pipes	No. of fragments	Total stem length (mm)	Mean stem length per fragment (mm)	Mean stem length per pipe (mm)
Overall assemblage	126	878	42571	48.5	337.9
Overall assemblage less selected contexts	49	469	18951	40.4	386.8
1907	11	37	2221	60.0	201.9
1915	5	62	2704	43.6	540.8
1994	12	69	4549	65.9	379.1
2028	6	26	1043	40.1	173.8
2197	15	51	4061	79.6	270.7
2473	9	41	2489	60.7	276.6
2495	7	62	2657	42.9	379.6
2736	12	61	3896	63.9	324.7

Table B.4.4: *Clay tobacco pipe mean stem lengths*

B.4.24 Cellar fill 1907 (cut **1906**, 100% excavated): MNI 11 pipes, this is a coherent group of type 9 (*c.*1680–1710) and type 10 (*c.*1700–40) bowls. Although the bowls have been divided into the two forms some are in fact transitional between the forms and do not match the Oswald general typology precisely. Although conventionally this group would be dated to *c.*1700–20 it may well be as late as *c.*1740. The group came from a cellar that had burnt down and an association with the major fire in Barnwell of 1731 is plausible for the pipes. All the bowls are unmarked and undecorated. Eleven pipes is a relatively large group for an early 18th-century assemblage from Cambridge and indicates a non-domestic origin for the material in the cellar.

B.4.25 Quarry pit fill 1915 (cut **1914**, 50% excavated): MNI 5 pipes (but probably *c.*10 in whole deposit), coherent group that are all probably type 12 (*c.*1730–80).

B.4.26 Pit fill 1994 (pit **1995**, 100% excavated): MNI 12, a coherent early/mid 19th-century group with the exception of one residual pipe produced by James Kuquit (*c.*1713–50).

Two types of pipe are present; one with a starburst on the spur (MNI 8) and other produced by William Balls or his son William Eve Balls (*c.*1807–51) and decorated with Masonic symbols (MNI 3). Eleven pipes is a moderately large group for an early/mid 19th-century assemblage from Cambridge; the material is probably not of domestic origin. Both types of bowl have a similar capacity indicating that the difference does not relate to this, suggesting some form of socio-economic status differentiation within a household or establishment linked to smoking.

B.4.27 Cellar fill 2028 (cut **2061**, 100% excavated): MNI 6, a coherent late 17th-century group with three type 6 (*c.*1660–80) and three type 9 (*c.*1680–1710) pipes. Given the overlap in forms a date of *c.*1670–90 is most probable if the deposit represents a short-term rather than long-term event. Six pipes is a relatively large group for a late 17th-century assemblage from Cambridge and may indicate a non-domestic origin for the material. Other fills in this building also contained a few pipe bowls that are consistent with the main assemblage: fill 2027 one type 6 and one type 7 of *c.*1660–80 and fill 2030 one type 9.

B.4.28 Cess pit fill 2197 (cut **2199**, 100% excavated): MNI 15, a coherent mid-19th-century group of material. The groups consist predominantly of fluted bowls with oak leaves on the front and rear and stylised oak leaves on spurs (MNI 11), plus bowls with oak leaves on the front and rear of the bowl but otherwise plain (MNI 4) and completely plain bowls (MNI 2). There is also a bowl decorated with Masonic symbols (MNI 1), which is different from those in the larger group of pipes with Masonic decoration from 1994 (pit **1995**) as it has circular motifs on the spurs rather than initials. There is only one pipe with maker's initials; this has oak leaves on the front and rear of the bowl but is otherwise plain and has the initials T/C indicating a member of the Cleever family of *c.*1839–65. Fifteen pipes is a moderately large group for a mid-19th-century assemblages from Cambridge, so the material is likely not to be of domestic origin.

B.4.29 Cellar fill 2473 (cut **2474**, 80%+ excavated): MNI 9 (but probably *c.*10–11 in whole deposit), this is coherent group of material consisting solely of type 12 bowls (*c.*1730–80). Two forms are present; one bowl form is slightly larger and completely plain (MNI 4, but probably 6), whilst the other bowl form is slightly smaller with a sunburst or 10-pointed star pattern on the spurs (MNI 3). Nine pipes is a relatively large group for a mid–late 18th-century assemblage from Cambridge and may indicate a non-domestic origin for the material in the cellar. The presence of two types of bowl is probably linked to consumption patterns, as the bowls are of different capacity.

B.4.30 Pit fill 2495 (cut **2494**, *c.*25% excavated): MNI 7 (but probably *c.*28 in whole deposit), this is a relatively mixed group, with both mid–late 19th-century bowls (MNI 5, *c.*20 in whole deposit) but also some of *c.*1660–80 (MNI 2, but probably *c.*8 in whole deposit).

B.4.31 Pit fill 2736 (cut **2735**) MNI 12, this is a coherent mid-19th-century group. It consists mainly of plain pipes marked T/C (MNI 8 or 9), but also a more ornate two-stage fluted bowl with the same initials (MNI 2). The initials T/C indicate a member of the Cleever family of *c.*1839–65. There was also one pipe manufactured by Maclure of Glasgow; the presence of this item suggests a date after the establishment of railway links to Cambridge in 1845.

Discussion and Recommendations

B.4.32 The clay tobacco pipe assemblage from Harvest Way represents one of the largest groups recovered from archaeological investigations in Cambridge to date and is of local and regional significance. The assemblage should be incorporated into the overall publication of the site, preferably in conjunction with the material from the Eastern Gate

Hotel site. There are several aspects of the assemblage that are of particular significance. The pipes with masonic decoration produced by William Balls have not been recovered elsewhere in Cambridge. The reason that these motifs were favoured is currently uncertain and documentary study may reveal if there were any masonic connections. The presence of a clay tobacco pipe produced in Glasgow represents a first for Cambridge and is therefore noteworthy.

B.5 Ceramic Building Material and Fired Clay/Daub

By Rob Atkins

Introduction

B.5.1 The large assemblage of CBM and fired clay/daub dating from the Roman to modern periods comprised 5364 fragments, weighing 409.464kg (Table B.5.1). This was found in both the evaluation and at the subsequent excavation.

B.5.2 Some of the CBM, particularly brick from *in situ* structures, was recorded on site. Most of the Period 4 brick, floor brick, roof tile and drain were discarded during the excavation without being counted and weighed. These are marked with an asterisk in the table.

CBM	Nos.	Wt (g)	No. Contexts
Brick	270	93830	153*
Floor brick	17	8011	11*
Decorative brick	3	3657	3
Medieval floor tile	33	3795	14
Peg tile	4855	267801	322*
Ridge tile	22	3194	19
?Stove tile	1	18	1
Pantile	31	3291	16*
Drain	8	2923	7*
Roman tile/brick	4	571	4
Fired clay/daub	121	22390	**39**
Total	*5365*	*409482*	

Table B.5.1: *CBM and fired clay/daub by numbers and weight*

Methodology

B.5.3 All complete lengths, widths and thickness of bricks and tiles were recorded. The exception was ceramic tiles where the thickness was not measured. Peg tiles were classified as either one or two peg hole types and recorded in the catalogue tables.

B.5.4 The bricks, tile and fired clay/daub were recorded by colour. Difference in colour is affected by the quantity of lime in the clay. In Ely, Kimmeridge Clay, Gault Clay and alluvium clay was used with the three different clays respectively producing reddish-brown, white (yellow), and a range of brindled and mottled hues (Lucas 1993, 158).

The Assemblage

B.5.5 The artefacts are listed below by type, number and site period (Table B.5.2). The very few artefacts from unphased contexts are not included.

Period	Material	No. of contexts	No. fragments	Weight of artefacts (kg)
2	Brick	50	124	14535
2	Medieval floor tile	7	25	2790
2	Roman tile	3	3	513
2	Peg tile	152	3964	212697

Period	Material	No. of contexts	No. fragments	Weight of artefacts (kg)
2	Ridge tile	8	9	978
2	Pantile	1	1	113
2	Drain	3	3	1934
2	Fired clay/daub	30	83	21395
3	Brick	62	112*	56282*
3	Floor brick	5	6	3384
3	Decorative brick	1	1	2535
3	Medieval floor tile	7	8	1005
3	Peg tile	127	688	41191
3	Ridge tile	9	11	1808
3	Stove tile	1	1	18
3	Pantile	2	4	1391
3	Drain	2	3	650*
3	Fired clay/daub	8	37	977
4	Brick	41	32*	18622*
4	Floor brick	8	11	4627*
4	Decorative brick	2	2	1122*
4	Roman tile	1	1	58*
4	Peg tile	41	197	13681*
4	Ridge tile	2	2	408*
4	Pantile	13	26	1647*
4	Drain	2	2	360*
4	Fired clay/daub	1	1	18*

Table B.5.2: *CBM and fired clay/daub by number and period*

Bricks

B.5.6 A moderate collection of bricks was recovered from the excavation (270 fragments weighing 93.83kg; Table B.5.3). Form was identified utilising the Norwich type series (Drury 1993, 163–5) as well as the author's own unpublished work on other brick found in the county. There has been a noticeable lack of brick recorded for Cambridgeshire with no published type series/form available. The Drury system is based on both measurements and fabric type. A catalogue of the brick from the evaluation and excavation is included (Table B.5.3).

B.5.7 It is important to note Drury's description of the variable fabric of early (medieval) brick: 'is of low density, containing little detectable sand, some grog, marine shells, some vegetative matter, and many small voids. The colour varies from yellow through khaki and pink to red and purple-red, generally streaky on the surface and inconsistent in section; a purple tinge is frequent and distinctive, indicating production from salt-rich estuarine clays....' (*ibid*, 163). In the medieval period some bricks were made on a surface covered with vegetable matter. In the case of Norwich, Drury has commented that these vegetative type bricks were locally produced (as opposed to Flemish sanded types). They appear in Norwich contexts from the late 13th century but by the end of the 14th century they predominate and they continued being used throughout the 15th century (*ibid*, 163–5). The other brick was in a sanded form which is likely to be medieval in date. Some of the sanded bricks were imported Flemish types (especially those dating from the late 13th century and early 14th century). Local sanded types copied these Flemish bricks.

B.5.8 'Later bricks' were made in a sanded form and followed on from 'early bricks' from at least the early 16th century and into the 19th century (*ibid*, 164–5). In the post-medieval period brick sizes were determined by various regulations which attempted to

standardize their manufacture (Ryan and Andrews 1993, 93). The Tylers' and Brickmakers' Company charter of 1571, for example, stipulated a size of 9 x 4¼ x 2¼ inches.

B.5.9 There was a considerable quantity of medieval brick from the site, mainly in sanded form, but also some in vegetative types and these were found in mainly Period 2 and 3 features and layers.

Bricks in Period 2 features and layers and medieval brick in later features

B.5.10 Nearly half the bricks (124 fragments) by numbers were found in medieval contexts, although by weight (14.535kg) it was less than one sixth of the assemblage. The average weight by fragment was 117.2g. Five of the fragments were definitely intrusive and dated either to the 17th or 18th centuries. None of the medieval bricks in Period 2 contexts were complete, although six had complete widths and a further 13 had measurable thicknesses. The widths of the bricks varied from two at 5", three at 4½", and one at 4¼". The thickness did not vary greatly – fragments were all either 1¾" or 2" thick.

B.5.11 The vast majority of the fragments varied in colour throughout from orange, red, pink to purple. This is very similar to Lucas' description of bricks from Ely (see above). This type of brick was found in other excavations within the Barnwell lay settlement (Atkins 2013b; Atkins 2015b), but this fabric does not appear in comparative assemblages at Ramsey Abbey (Ryan 2009), Wisbech Castle (Atkins 2010) or Bury St Edmunds (Atkins 2014). A few of the bricks are made from an orange sandy fabric (*e.g.* in context 2402 and 2478). Bricks in this fabric have been found at Brunswick, 0.5km to the north-west (Atkins 2012a) and are noticeably similar to bricks found in Wisbech, although the late medieval bricks here (and the medieval palace at Ely) were wider (5") than those from Coldhams Lane (Atkins 2010).

B.5.12 The majority of the bricks seem to have been sanded, including some which also had a few vegetative impressions. Bricks in a vegetative form were found in up to seven contexts (1978, 2285, 2863, 2997, 3349, 3459 and 3461).

B.5.13 Small to moderate quantities of medieval brick fragments were found in three Period 2 features. Pit **1969** had 20 fragments (0.728kg) from five deposits, there were 25 fragments (3.836kg) from two deposits in pit **2275** and pit **3451** had 24 fragments (2.33kg) from seven deposits.

B.5.14 Medieval brick was also found in many Period 3 and 4 features. Some of these bricks had been reused in later features – of note was the large quantity of bricks (as well as worked stone) reused in the 16th-century cess-pit **1424**, with 31 bricks weighing 29.926kg. The bricks were largely used to form scaffolding holes for this feature. Most of the bricks were in a sanded form, but a few were of the vegetative type. One unusual brick had XIIII inscribed on top which may denote the tally mark 14. There were seven complete bricks (five 9" long and two at 8½") and 21 had measurable widths (which varied from one at 3¾", two at 4", four at 4¼", eight at 4½", four at 4¾ and two at 5"). All thicknesses were either 1¾" or 2". Three other Period 3 features reused at least some medieval bricks (wall **492**, oven **463** and chimney **462**). Notable quantities of medieval bricks were found within the backfill of pit **430**.

Bricks in Period 3 features and layers

B.5.15 There were 112 bricks including fragments found in 62 contexts (56.282kg*). This does not include some brick from ten Period 3 features which were measured but not weighed on site. Nearly half the bricks by weight were reused medieval ones found in

cess pit **1424** (see above).

B.5.16 It is noticeable that there was no definite mid-16th- to mid-17th-century brick within the site. It was at this stage that Barnwell was a small village devoid of its former patron, Barnwell Priory. The possible exception is from the cellar of an inn (**2062**), which was the earliest *in situ* post-Reformation feature using contemporary bricks. The well-made orange bricks (8" x 4" x 2") in this feature could only be broadly dated as 17th- to 18th-century. The archaeological evidence is that this feature burnt down probably in the Fire of Barnwell 1731, so a 17th-century date is likely for its construction. A well-made brick cellar in the 17th-century is an indicator of some wealth – presumably from trade along this main road, including the business generated by the two important annual fairs (Midsummer and Stourbridge). It is noticeable that photographs taken in October 1959 of the destruction of the cellar building of the former Bird Bolt Inn (which had been located directly to the west of the excavation area), appear to show it had also been made with similar bricks and the cellar was of similar size.

B.5.17 'Locally' made bricks dating to the late 17th to 18th century were found in relatively small quantity within the site. These bricks were both in a puddled yellow/red mixed with often with a grey core, as well as some yellow, orange and orange to red and red fabrics. This seems to suggest that in this period bricks were being brought in from several different (presumably) nearby kilns, but not in any large quantity. A few fragments of 18th-century buildings and other structures were found on site, including a possible stable structure (Building 12) behind cellar **2062**.

B.5.18 From the *c*. mid-18th century there is far more evidence for brick within the site. North to south boundary plot walls (325/876, 792, 942, 1083), which post-date the 1731 fire, were all made with orange/red bricks which measured 8½" x 4" x 2½"(325/876).

B.5.19 Eighteenth-century buildings along the frontage of Newmarket Road seem to be largely made of clunch, but a few only had small quantities of bricks within them (including Building 14 which reused medieval examples in various aspects of this building (*e.g.* wall 492; chimney **462**; oven **463**).

B.5.20 It is noticeable that relatively/very few post-medieval brick fragments were found in the backfill of Period 3 features. This seems to add evidence that after the medieval period, brick seems to take some time to be used in any quantity within (or presumably near to) the site.

Bricks in Period 4 features and layers

B.5.21 In Period 4 there were 32 bricks fragments found (18.622kg), but this doesn't include many bricks recorded from walls on site which were not weighed. It should be noted that within 19th- and 20th-century features brick were invariably not retained (but were noted in the context sheets).

B.5.22 In the 19th century and up to the 1960s all new buildings within the site were built of bricks. There was virtually no reuse of medieval brick from the priory in this period. This is presumably due to relatively cheap brick kilns being established a few hundred metres to the east of the site.

B.5.23 Most of the brick recorded within the site in Period 4 can be dated fairly accurately from a plethora of maps dating from Enclosure (*c*.1808). In the 1820s to 1840 the site reverted from a rural 'village' to being part of urban Cambridge. Indeed the RCHME (1988, 366) notes that in this period Barnwell became an area of small terraced closely built properties with some industry. Infilling and dominating the eastern third of the site were Shamrock Passage and Brown's Yard. These are not shown on the 1820s parish

map, but are shown on the 1840 Sewage map. Some of these buildings were made with different bricks, both yellow and red examples. Walls 372 and 376 for example comprised yellow machine-made bricks with slight frogs (showing this type brick was being used by the 1840s).

B.5.24 Yellow perforated brick is recorded in wall 1036 of the St George and Dragon pub/coffee house which was extended to the south in the mid-19th century.

Discussion

B.5.25 No early medieval brick (pre 13th-century) types were found at Harvest Way. One-handed bricks were first used in the eastern counties in the late 13th century (Ryan 1996). Indeed, no bricks of this type have been yet recorded in Cambridgeshire.

B.5.26 One-handed Flemish and also home-made bricks were used in towns on the east coast from an early date *e.g.* the first documented use for brick in Norwich was 1268–70 (Shepherd Popescu 2009, 463). Interestingly these early bricks were not meant to be on show, they were 'generally used as an ingredient of rubble walling, or where they offered constructional convenience, in the construction of vaults, which often show signs of originally being plastered' (Drury 1993, 164).

B.5.27 It is presently uncertain when brick was first being used within Harvest Way. This is in the main because the medieval phase for this project is deliberately broad (*c*. AD 1200–1538). It is probably significant that the earliest contexts in which bricks were found at Coldhams Lane dated to *c*.AD 1350–1400 (Atkins 2013b). This is a similar date to brick from some other Cambridgeshire towns. At Huntingdon, Walden House, for example, the earliest bricks found in the excavations probably date to around the mid-14th century (Atkins forthcoming). The presence of bricks within the lay settlement of Barnwell Priory from the mid-14th century is therefore very interesting and may help to establish a date at which bricks first began to be used in Cambridge.

B.5.28 A mid-14th-century date (1334/5) is recorded for brick-making in Ely, but this may have been a one-off job as there is no reference to any further firings in subsequent records and brick was being imported into Ely a few years later (Sherlock 1998, 65). Documentary evidence shows that by the middle of the 14th century (1333–4, 1347–8 and 1355–6), a brickworks in Wisbech was being run on land owned by the abbot of Ely (Sherlock 1998).

B.5.29 Elsewhere in Cambridgeshire archaeological and documentary evidence suggests there may have been an increase in very late medieval brickmaking; in the late 15th and early 16th century bricks were commercially produced at Ely, Ramsey and Wisbech (Lucas 1993; Sherlock 1998; DeWindt and DeWindt 2006, appendix 8). The Ely and Wisbech brickworks were both on Ely Cathedral land and these workings would have used the river network to transport the bricks. Ely had a wide distribution market for its bricks and tiles, including Cambridge (Lucas 1993, fig. 1) with for example, Ely brick purchased by Trinity College in 1528/9 (*ibid*, 158). Ramsey Abbey may have offered an alternative supply since there are many records of bricks and brick moulds being produced by the abbey employees in the early 16th century and this abbey used its own boats for commercial transactions (DeWindt and DeWindt 2006, appendix 8).

B.5.30 Queen's was the first Cambridge College to use exposed brickwork extensively in its front court of 1448–9 and this use of exposed brickwork was quickly followed by Jesus, Christ's and St. John's (Lee 2005, 189). There is only one known documented late medieval brickmaking area in Cambridge; St John's College organised the production of its own bricks by an indenture of 1511 and a brickmaker spent several days locating an area in Cambridge to produce bricks (*ibid*, 189). The location of this brickworks is unknown although only a few locations have gault clay including directly to the east of

the Coldhams Lane site.

B.5.31 In the very late post-medieval period a brickworks was located from at least *c*.1800, just to the south-east of the site (recorded on the 1807–12 Enclosure Map). Bricks would have been taken up Brick Kiln Road directly north of the site to be transported along the River Cam. Two and three separate brickworks are recorded on the 1830s and 1840s maps around this area. It was not a coincidence that there was a concentration of brick kilns located here – there were good clay beds for brickmaking and it was next to the river and a major road for transportation. Significantly, it was also within an area where there was (to be) a very large growth in population/housing. These economic factors were probably the major reasons for expansion in this part of Cambridge. It has been long recognised by economic and social historians than an active building industry can boost the trade (and population) of a town: 'the building trades were active in all areas of expansion, it is often possible to correlate regional bursts of industrial growth with new housing. Moreover the output of the builders represented a very high proportion of new capital' (Checkland 1979, 165).

B.5.32 Such a concentration of brickmaking is well-known from elsewhere *e.g*. at Northampton four adjacent brick kilns were recorded in the far northern segment of the town and these accounted for over half of the town's brickmakers. This location was near to clay beds, next to the turnpike road and in an area which saw the greatest housing expansion within the town in the 19th century (Atkins 2002, 97).

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
15	1	361	61mm (2½").	Yellow sandy? Post hole or pit	18th to early 19th century	?Posthole Building 8	3
19	2	113		In two fabrics: 1) Hard red to purple(97g). Burnt later. 2) Yellow/red mixed with grey core (16g).	?medieval Late 17th-18th	Posthole **20** Building 8	3
23	2	61		Orange sandy		?Posthole **24** Building 8	3
27	2	93		In two fabrics: 1) Red sandy (42g) 2) Mixed yellow/red (51g)	Late 17th to 18th century	Posthole **28** Building 8	3
33	5	222		In three fabrics: 1) One hard orange sandy with dark grey reduced core (157g). Some large flint inclusions. 2) Three orange red (44g) 3) One yellow (21g)	3) Late 17th+	?Posthole **34** Building 8	3
37	1	8		Orange/red sandy		Posthole **38** Building 8	3
75	1	97	48mm (2")	Orange/red to purple		Floor Building 16	3
79	2	34		Orange		Floor Building 16	3
103	1	407	44mm (1¾")	Dark red to purple. A couple of vegetative impressions.	14th-early 16th	Pit **99**	2
109	1	226	53mm (2") thick.	Yellow.	Late 17th -18th century	Posthole **114** Building 11	3
123	1	61		Hard red to purple.	? med	Pit **124**	3
127	1	2311	220mm (8½") 102mm (4") wide and 60mm (2¼") thick.	Orange sandy.	Late 18th to mid-19th century	Pit **128**	4
130			220mm (8½") 98mm (4") wide and 60mm (2¼") thick Some 70mm (3")	Hard red to purple. Arrises ok. Recorded on context sheet. Not weighed	18th-mid 19th	Wall 131	3
136				Fletton brick. Frogged and name stamped. Recorded on context sheet. Not weighed	Mid 20th+	Structure **138**	4
159	2	340	2) 50mm (2")	In two fabrics:	1) Post-	Pit **160**	3

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
				1) Red (14g). Post-medieval 2) Yellow. Cracked face. 50mm (2") thick	medieval 2) Late 17th - 18th century		
161	2	446		In two fabrics: 1) Red sandy with some small flint inclusions 2) Orangey red. Poorly made.	2) Late med+	Pit **162**	3
182	1	10		Orangey red		Pit **183**	4
193	1	39		Red		Layer	3
199	2	136		Hard purple. Cracks. Not well made. Slight signs of burning on one side.	Medieval	Layer	3
209	2	406	1) 50mm (2")	In two fabrics: 1) One Yellow (261g). 50mm (2") 2) One orange sandy (145g)	1) Late 17th-18th century	Pit **260**	3
220			102mm (4") x 72mm (3")	Red. Recorded on context sheet. Not weighed	Mid 18th-mid 19th	wall 220 ?Corral	3
291	2	4391	A) 230mm (9")x 104-110mm (4-4¼") x 46mm (1¾") B) 228mm (9") x 117mm (4¾") x 47 (1¾")	A) Pink to purple (2148g).? partly sanded. Lot of vegetative impressions on base, some on top and a side. Frequent cracks and small holes. Mould impression. Uneven and slightly warped. B) Pink to purple (2243g). Vegetative – significant quantities. Frequent/some cracks and small holes. Mould impression. Uneven and slightly warped.	14th to early 16th		
312			228mm (9") x 102mm (4") x 76mm (3")	Recorded on context sheet. Not weighed	Late 18th-mid 19th	Wall 313 Building 24	4
314			215mm (8½") x 102mm (4") x 76mm (3")	Recorded on context sheet. Not weighed	Late 18th-mid 19th	Wall 315 Building 24	4
316			203mm (8") x 102mm (4") x 76mm (3")	Recorded on context sheet. Not weighed	Late 18th-mid 19th	Wall 317 Building 18	4
318			203mm (8") x 102mm (4") x 76mm (3")	Recorded on context sheet. Not weighed	Late 18th-mid 19th	Wall 319 Building 18	3
320			228mm (9") x 115mm (4½") x 76mm (3")	Recorded on context sheet. Not weighed	Late 18th-mid 19th	Wall 321 Building 18	3
323			178mm x 102mm (4") x 76mm (3")	Recorded on context sheet. Not weighed	Late 18th-mid 19th	Floor Shamrock Passage	4
326			228mm (9") x 102mm (4") x 76mm (3")	Recorded on context sheet. Not weighed	Late 18th-mid 19th	Wall 327 Browns Yard	3
328	1	3197	221mm (8½") x 105mm (4") x 70mm (2½")	Yellow. Recorded on context sheet. Not weighed	Late 18th-mid 19th	Soakaway **329**	4
330	1	2630	200mm (8") x 100mm (4") x 52mm (2")	Varied from yellow to orange. Same size.	Late 18th-mid 19th	Drain **331**	4
332			228mm (9") x 102mm (4") x 60mm (2½")	Deep red. Recorded on context sheet. Not weighed	Late 17th- 18th	Wall 333	4
334			225mm (8½") x 110mm (4¼") x 60mm (2½")	Yellow. Recorded on context sheet. Not weighed	Mid 18th-mid 19th	Wall 335	4
371			230mm (9") x 110mm (4½") x 70mm (2¾")	Yellow. Machine made with slight frogs (frog 150mm x 60mm x 20mm)	Mid 19th+	Wall 372 Browns Yard	4
376			220mm (8½") x 110mm (4½") x 70mm (2¾")	Yellow. Machine made with slight frogs (frog 150mm x 60mm x 20mm)	Mid 19th+	Wall 376 Browns Yard	4
381			220mm (8½") x 110mm (4½") x 70mm (2¾")	Red	late 18th-19th	Wall 381 Browns Yard	4
382			230mm (9") x 110mm (4½") x 76mm (3")	Red and yellow	Late 18th-19th	Wall 382 Browns Yard	4
386			210mm (8¼") x 100mm (4") x 70mm	Red	Late 18th-19th	Wall 386 Shamrock	4

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
			(2¾")			Passage	
392			230mm (9") x 110mm (4½")	Yellow. Machine made	Mid 19th+	Floor Browns Yard	4
423			230mm (9") x 110mm (4½") x 60mm (2½")	Yellow	Late 18th-19th	Wall 423 Building 22	4
424			210mm (8¼") x 100mm (4") x 60mm (2½")	Red	Late 18th-19th	Wall 424 ?Corral	3
425			230mm (9") x 110mm (4½") x 70mm (3")	Yellow	Late 18th-19th	Wall 425 ?Corral	3
428			220mm (8¾") x 110mm (4½") x 60mm (2½")		Late 18th-19th	Wall 428 Building 23	4
462	1	1860	228mm (9")x 114mm (4¾") x 47mm (1¾")	Orange (1860g). Sanded. Moderate quantities of vegetative impressions. Slight mould impression. Reasonably well made	14th-early 16th	Chimney 462 Building 14	3
463	1	3678	221mm (8½") x 104mm (4¼") x 48mm (2") 225 (8¾") x 110 (4½") x 51mm (2")	A) Pink to purple (1845g). Sanded. A few vegetative impressions. Cracks and some holes. B) Orange to red (1833g). Sanded. A few vegetative impressions. Not too well made. Arrises poor. Mould impression. Slight smoothness on top. Heavily sooted here.	14th to early 16th	Oven **463** Building 14	3
491	1	1882	A) 116mm (4¾") x 49mm (2") B) 106mm (4¼") x 43mm (1¾")	A) Orange to slightly purple (1094g). Sanded but a few vegetative impressions. Some cracks and holes. Mould impression B) Pink to purple (788g). Vegetative (mass). Some cracks. Mould impression.	14th to early 16th	Wall 492 Building 14	3
537	2	195		In two distinct types: 1) Yellow perforated (0.124g) 19th century 2) Yellow (71g)		Drain **538**	4
540	1	869	116 (4½") 46mm (1¾")	Vegetative. Mass on base and a few on top. Frequent cracks and small holes external and internal. Uneven	14th to early 16th	Trench **541**	4
542			105mm (4¼") x 70mm (2¾")	Red	Late 18th-19th	Toilet **543** Building 16	4
546	1	6234	A) 230mm (9")x 115mm (4½") x 46mm (1¾") B) 120mm (4¾") x 47mm (1¾") C) 221mm (8¼")x 110mm (4½") x 44mm (1½") D) 120mm (4¾") x 47mm (1¾")	A) Pink to purple (2168g). Sanded. Very few vegetative impressions on base and one side. Cracks. Mould impression. Slightly overfired – a little vitrification. Slightly warped. B) Pink to purple (1399g). Sanded, but has a few vegetative impressions. Moderate to large quantities cracks and holes. Mould impression. C) Orange to slightly red to purple (1742g). Frequent vegetative impressions on base but partly sanded? Mould impression. Near complete. D) Pink to purple (925g). Sanded. Large quantity of cracks. Mould impression.	14th to early 16th	Pit **430**	3
559			230mm (9")x 130mm (5") x 50mm (2")	Red		Wall 559 Building 16	3
599	2	4702	228mm(9")x 100-108mm (4-4½") x 50mm (2") 230mm (9") x 106-108mm (4¼") x 60mm (2"½)	A) Sanded (1968g). A few vegetative impressions. Not well made – Arrises poor. Slightly warped. Slightly overfired causing a little vitrification. Mould impression. From wall (mortar on top and base). Been reused? B) Deep red (2734g). Sanded. Well made. Near vertical arrises etc.	A) Late med-17th century B) 18th-early 19th century	Doorway 598 George and Dragon	4
625			230mm (9")x 110mm (4½") x 70mm (2¾")		Late 18th-19th	Wall 625 Building 28	4
645	1	8		Red		Pit **648**	3

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
696	2	162		1) Yellow/red mixed (135g) 2) Orange (27g)		Floor Building 18	4
697	1	52		Yellow/red mixed. Scrape marks	17th+	Layer	4
720			230mm (9") x 110mm (4½") x 60mm (2½")	Yellow	Late 18th-19th	Wall 720 Building 18	3
754	1	118		Yellow brick (118g)	17th-19th	Pit **755**	3
787	3	1473	A) 113mm (4½") x 46-50mm (1¾- 2") B) 110mm (4¼") x 41mm (1¾")	A) Purple (482g). Sanded. Many cracks. Mould mark. Uneven. Poorly made B) Purple (843g). Sanded. Mould impression C) Red-pink (148g). Sanded. 48mm (2")	?all medieval	Layer	3
810	1	83		Orange. Mould mark. Cracks	?medieval	Layer	3
829	1	63		Purple	?medieval	Ditch **830**	3
876			220mm (8½") x 100mm (4") x 60mm (2½")	Red	Late 18th-19th	Wall 876 Boundary	3
879			230mm (9") x 120mm (5") x 60mm (2½")	Red		Wall 879 Boundary	3
927	3	1212	B) 51mm (2") C) 45mm (1¾")	A) One orange/red (632g) B) One orange (226g) C) one orange (354g)	B) 17th-18th	Well **931**	4
986	1	308	47mm (1¾")	Yellow (308g). Frequent cracks and many small holes	17th-18th	Pit **987**	3
1036			220mm (8½") x 110mm (4½")	Yellow perforated brick. (developed perforation of three holes per width x many)	Mid 19th+	Wall 1036 St George	4
1073			220mm (8½") x 120mm (5")x 65mm (2½")	Red		Wall 1073 Shamrock passage	4
1078			220mm (8½") x 100mm (4")x 70mm (2¾")	Red		Wall 1078 Boundary	4
1084	1	2		Red.? brick		Layer	4
1143	1	113		Red. Sanded	?late medieval	Floor Corral	3
1151	2	161		red to purple	?medieval	Posthole **1150**	4
1192	1	52		Yellow	17th+	Posthole **1191** Building 8	3
1247	1	35		Purple. Overfired – vitrification on surface. Cracks	?medieval	Well **784**	2
1263	2	21		Orange/red		Ditch **1264**	2
1292	1	20		Red-purple		Pit **1293**	4
1304	3	36		In two fabrics: 1) Two yellow (23g) Well made (corner survived in one) 2) One yellow/red mixed (13g)	1) Mid 18th+	?pit or PH **1305**	4
1429	5	3073	A) 50mm (2") B) 116mm (4¾") x 45mm (1¾") C) 120mm (5") x 51mm (2") D) 49mm (2") E) 115mm (4¾") x 50mm (2")	A) Purple (91g). Cracked face. Overfired. B) and C) Two part bricks slightly pink to purple (1572g). Mostly sanded? One has some/frequent vegetative impressions. Mould impression. Arrises poor. C) is slightly burnt black. D) and E) are orange to pinkish purple in colour (1410g). Mostly sanded? Some vegetative impression on base. Poorly made.	14th-early 16th	Cess pit **1424**	3
1432	8	14906	A) 210 (8¼") x 112mm (4½") x 50mm (2") B) 215 (8½") x 106mm (4¼") x 44mm (1¾") C) 230 (9") x 113mm (4½") x 47mm (1¾")	A) Pink to purple (2001g). Sanded. A few vegetative impressions on base. Very poorly made. Poor arises, lot of cracks and holes. Mould marks. B) Mid orange sandy (1793g). Sanded. A few cracks. Slightly warped. Mould impressions	14th-early 16th	Cess pit **1424**	3

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
			D) 114mm (4½") x 52mm (2") E) 228 (9") x 108mm (4¼") x 51mm (2") F) 226 (9") x 113mm (4½") x 52mm (2") G) 95mm (3¾") x 44mm (1¾") H) 126mm (5") x 50mm (2")	C) Pink to purple (2039g). Sanded. Reasonably made. Only a few cracks and holes. OK arrises Mould marks. D) Sanded (1707g). Some vegetative impressions. Many cracks. Arrises ok. E) Mid orange sandy (2577g). Sanded. A few vegetative impressions. A lot of mortar attached. F) Pink to purple (2570g). Sanded. Large quantity of cracks and holes. Slightly warped. Some mortar attached. G) Red to purple (1164g).? Mostly sanded. Has frequent vegetative impressions on base and a few on side. Some cracks and holes. Poorly made. H) Pink to purple (1050g). Vegetative. Mass of impressions on base and a few on top and side. A few small internal holes and cracks. Poor arrises.			
1433	3	2047	A) 110-112mm (4½") x 51mm (2") B) 108mm (4¼") x 43mm (1¾")	A) One orange to slightly purple (1202). Largely sanded, but some vegetative impressions. Mould mark. A few cracks and v. occasional small holes B) One orange to slightly purple (567g). Overfired causing vitrification. Some cracks. Mortared. Arrises ok C) One orange to slightly purple (278g)	14th-early 16th	Cess pit **1424**	3
1448	1	32		? fabric. Burnt black		Pit **1447**	2
1457	2	330		Orange. One burnt alongside and top of brick -used in oven/hearth?		Well **1456**	3
1564	1	21		Orange to pink	?late med	Pit **1565**	3
1569	3	593	B) 50mm (2")	A) Two yellow/orange (46g) B) One orange sandy (547g)		Pit **1570**	3
1584	3	444	48mm (2") 49mm (2")	Orange to pink. One is Vegetative (mass of impressions). The other two are probable – one has several impressions. Cracks etc.	14th-early 16th	Well or pit **1577**	3
1586	6	401		Orange to pink to purple. One has had excess clay scraped off. One burnt	?medieval	Pit **1621**	2
1714	1	85		Yellow and red clay mixed	17th+	Posthole **1713** Building 18	3
1718	1	1356	110 (4½") 67mm (2¾")	Orange. Well made in mould. Near vertical arrises.	mid 18th-mid 19th	Drain **1719**	4
1888	2	1068	A) 101mm (4") and 42mm (1½") B) 46mm (1¾")	A) Orange/red/purple. Sanded. Has some vegetative impressions on base. Overfired – some vitrification in areas. Some cracks/holes. Arrises ok B) Orange to purple. Some vegetative impressions on base. A few small cracks	?late medieval -16th	Cess pit **1424**	3
1941	3	40		Red/pink/purple		Pit **1940**	2
1968	1	13		orange to red		Pit **1940**	2
1970	4	62		Pink to purple	?medieval	Pit **1969**	2
1971	2	17		Orange to purple		Pit **1969**	2
1978	1	572	43mm (1¾")	Dark red to light purple and one flint 21mm in length. Some vegetative impressions. Many cracks (external). Arrises very poor. Uneven brick.	14th-early 16th	Pit **1986**	2
2018	1	219		Yellow with a few small red clay lump inclusions.	17th +	Ditch **2020**	3
2021	3	178		orange to red to purple	?medieval	Pit **1969**	2
2022	9	237		Eight were in a dark orange to red to slightly purple (186g). Vegetative impressions on two. One orange to red with some very small flint inclusions. (51g). Sanded	14th-early 16th	Pit **1969**	2

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
2028	2	84		Orange to red. Some internal cracks.		Inn **2061**	3
2030	1	16		Orange to red		Inn **2061**	3
2033	5	104		A) Four orange to red to purple (77g). Cracks B) One yellow	A)? medieval B) Mid 18th +	Pit **2096**	2
2062	1	1795	209 (8") x 101 (4") x 50mm (2")	Orange. Complete brick but has some lime mortar. Crease on face. Some cracking to faces. Arrises ok to good	17th-18th	Inn **2062**	3
2067	2	34		Orange		Pit **1969**	2
2100	1	8		Orange to purple. Small internal holes		Pit **2096**	2
2155	2	21		Orange		Pit **2154**	2
2158	2	110	40mm (1½") thick	Orange to slightly pink to purple. Mould mark. Cracks on exterior and interior		Pit **2157**	3
2160	1	10		Red to purple		Pit **2157**	3
2216	1	1292		Heavily burnt/overfired. Distorted etc....		Pit **2215**	4
2217	2	1247	A) 108mm (4¼") x 49mm (2") B) 109mm (4¼") x 45mm (1¾")	A) Red/pink/purple. Sanded. A couple of vegetative impressions. A few cracks (relatively small). Some soot. B) Red/pink/purple. Uneven. Soot along the top (15mm deep) of one side of brick only. Used in? oven/hearth	Probably late med	Well **1456**	3
2273	1	7		Red		Pit **1940**	2
2284	8	801		Mostly purple – a couple orange to red. Frequent vegetative impressions on one. External cracks	14th-early 16th	Pit **2275**	2
2285	17	3035	A) 116mm (4½") x 51mm (2") B) c.115mm (4½") C) 117mm (4½") x 50mm (2") D) 51mm (2") E) 52mm (2")	A) Purple. Very uneven. Large cracks on face and some internal. Small holes. B) Purple C) Purple. I vegetative impression. Small holes Orange to red-largely purple. Most sanded? Some others have some to frequent vegetative impressions. Many cracks, uneven examples.	14th-early 16th	Pit **2275**	2
2317	1	38		Orange/red		Pit **2318**	2
2324	1	12		Yellow	17th+	Pit **2327**	4
2331	3	87		Orange to slightly pink. Frequent vegetative impressions on one.	14th-early 16th	Cess-pit **1424**	3
2333	3	3584	A) 48mm (2") B) 110mm (4¼") x 48mm (2") C) 104 (4") x 50mm (2")	A) Orange to slightly purple (1558g). Cracked. Large quantities of mortar B) Red to purple (1175g). Frequent vegetative impressions. Frequent cracks. Scrape marks – excessive clay removed from mould. Sanded. A few cracks. Scrape marks	 B) 14th-early 16th C)? 16th-17th	Cess pit **1424**	3
2335	2	1518	115mm (4½") x 43mm-50mm (1¾"-2")	Orange to red slightly purple. Both have frequent vegetative impressions. One part brick is very uneven. Some cracks. Arrises ok.	14th-early 16th	Cess pit **1424**	3
2345	3	2678	A) 48mm (2") B) 120mm (4¾") C) 122mm (4¾"+)	A) Red to pink/purple(71g). Small cracks and holes B) Red to purple (1293g). Sanded. Some cracks. Scrape marks C) Red to purple (1314g). Cracks internal and external	A)? medieval B) 14th-early 16th C) 14th-early 16th	Cess pit **1424**	3
2347	2	2033	A) 45mm (1¾") B) 113mm (4½") x 50mm (2")	A) (955g) Vegetative? - large quantity of impressions. Scrape marks – removing excess clay. Cracks etc. B) Red to slight purple tinge. Vegetative – frequent impressions on base. Excess clay scraped off top. Internal cracks. Arrises poor to ok.	14th-early 16th	Cess pit **1424**	3
2348	2	3433	A) 228 (9") x 112mm (4½") x 40mm (1½")	A) Soft to medium orange (1584g). Vegetative- frequent impressions on base?	14th-early 16th	Cess pit **1424**	3

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
			B) 215 (8½”) x 102mm (4”) x 44mm (1¾”)	Mould marks. Has decoration on top of brick – is it denoting the number 14 for tallying? Whilst wet it has an X inscribed – from four corners of the brick by a finger? Then afterwards, there were four vertical lines drawn on eastern half of brick. First one is through the centre of the cross and the other three are progressively spaced *c*.1” apart to the east. Brick nearly complete. Unusual. B) Red (1849g). Sanded. A few vegetative impressions. Mould impression. Poorly made. Arrises poor. Slightly warped.			
2402	1	452	110mm (4¼") x 44mm (1¾")	Orange. Sanded, but has a few vegetative impressions. Finger prints. Some/extensive cracks and a few holes (internal and external). Heavily overfired – a lot of vitrification.	Late medieval	Ditch **2405**	2
2408	1	9		Red to purple		Pit **2409**	4
2478	1	301	46mm (1¾")	Orange. Sanded. Poorly made. Cracks and holes. Some soot.	14th to early 16th	Pit **2479**	2
2496	1	512	126mm (5")	Pink to purple. Sanded. Small cracks and holes	14th-early 16th	Pit **1940**	2
2555	1	419	41mm (1½")	Orange. Sanded. Good arrises.	17th-18th	Well **2554**	2
2581	1	298	42mm (1¾")	Red to slightly purple. Vegetative. Excess clay removed from mould. Frequent cracks	14th-early 16th	Pit **2584**	3
2607	1	23		Orange		Oven/kiln **2604**	2
2611	1	110	47mm (2")	orange. Mould mark. Some cracks and small holes		Pit **2610**	3
2613	1	62		Purple. Mortar attached		Pit **2612**	3
2667	1	93		Red to purple. Cracks and holes	?14th-early 16th	Pit **2671**	2
2674	3	2568	A) 60mm (2½") B) 4¾"-5" 44mm (1¾") C) 98mm (4"), 44mm (1¾")	A) Orange (947g). Some pebble inclusions up to 28mm in length. Sanded. Arrises ok B) Pink to purple (628g). Cracks etc. C) Orange with grey core (993g). Ok made – reasonable arrises. Some cracks.	A) Late 17th century + B) 14th-early 16th C) 17th-18th	Pit **2682**	2
2676	1	142		Orange	?	Pit **2682**	2
2762	4	69		Orange. Three vitrified.		Posthole **2761**	2
2764	3	45		Red. One burnt	?post-medieval	Posthole **2763** Building 11	3
2799	2	76		Yellow	Post-medieval	Layer	3
2820	2	647	A) 96mm (3¾") x 50mm (2") B) 38mm (1½")	A) Orange/pink/purple (472g). A lot/some small cracks. B) Yellow/red clay mixed brick with yellow clay lump inclusions (175g)	17th-18th 17th-18th	Posthole **2818** Building 11	3
2863	1	174	44mm (1¾")	Orange. Some vegetative impressions. Some cracks	14th-early 16th	Pit **2996**	2
2869	1	33		Red to purple. Cracks. A little burning on corner	?late med	Well **2412**	2
2883	2	50		Orange		Layer	4
2949	2	184		Red to purple. Poorly made. Cracks. Mould mark.	?medieval	Pit **2953**	2
2952	1	109	52mm (2")	Red. Sanded. Some small pebble inclusions. A few small cracks.	late 17th-18th	Pit **2953**	2
2955	1	38		Red		Pit **2956**	2
2988	1	64		Orange. Fletton type. Frog. Start of letters on frog	Mid 20th+	layer	4
2997	1	296	51mm (2")	Pink to purple. A few vegetative impressions. Some cracks and holes.	14th-early 16th	Pit **2996**	2

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
3029	2	241		Yellow red clay mixed. Scrape marks removing excess clay from mould. Some cracks and holes	17th-18th	Posthole **3030** Building 11	3
3066	1	171		Red to purple. Slightly pitted appearance. A few holes	?medieval	Pit **3065**	3
3069	1	30		Red to purple. Some cracks.	?medieval	Posthole **3068** Building 11	3
3078	1	10		Orange.? brick		Pit **3076**	2
3090	1	16		Orange.? brick		Well **2412**	2
3151	1	55		Orange. Slightly burnt		Posthole **3150**	3
3188	1	14		Scrap		Posthole **3187** Building 11	3
3272	3	280	41 (1¾")	Hard red to slightly purple. Poorly made. Several cracks and holes	14th-early 16th	Pit **3273**	4
3291	1	34		Orange to red		Well **1927**	2
3349	1	262		Dark orange to red/to slightly purple. A few vegetative impressions. Some internal cracks	14th-early 16th	Pit **3351**	2
3365	1	27		Orange to red. Cracks		Pit **3351**	2
3380	1	30		Pink to purple. Crack and small holes	?medieval	Pit **3381**	2
3457	6	524	45mm (1¾")	Orange to red to purple. Three may have been part of an oven as soot/burning on top. Cracks on external and internal.	Medieval	Pit **3451**	2
3459	10	624	A) 50mm (2")	A) Part brick (409g). Red to purple. Vegetative. Scrape marks showing removal of excess clay. Cracked face. Arrises ok B) Nine orange small fragments (215g)	A) 14th to early 16th	Pit **3451**	2
3460	3	186	46mm (1¾")	Orange to red. Sanded. A couple of vegetative impressions. Cracks. Mould impression	?14th-early 16th	Pit **3451**	2
3461	1	448	50mm (2")	Red to purple. Some vegetative impressions on base. Some small voids. Mould mark	14th-early 16th	Pit **3451**	2
3463	1	74	45mm (1¾")	Orange to pink.	Late med/ v.early post-med	Pit **3451**	2
3465	1	31		Pink to purple		Pit **3451**	2
3467	2	443	*c*.50mm (2")	Two yellow. Poorly made. Very poorly made. Uneven. Significant cracks. A little sooting on one	17th?	Pit **3451**	2
3507	1	53		Some holes/cracks	?medieval	Pit **3503**	3
3529	1	17		Orange with flint inclusions up to 14mm		Posthole **3528**	3
3572	1	337		Orange with a few small stone (flint) inclusions up to 15mm. Sanded. Arrises good	?med? post-med. More likely the latter	Pit **3574**	2
3643	1	13		?brick		Well **3388**	2
Total	*270*	*93830*					

Table B.5.3: *Catalogue of brick*

The Floor Bricks

Introduction

B.5.33 There was a small collection of 17 floor bricks (8.01kg) from 11 contexts (two Period 4 contexts were measured on site, but not weighed). All 17 floor bricks were found in Period 3 and 4 contexts (Table B.5.4).

B.5.34 All 17 floor bricks have a smoothed top, presumably from being walked on. All the bricks date from the 17th or 18th century. Several of the floor bricks had been produced

as normal handmade bricks from moulds and then placed within a floor. Others were produced specifically for a floor (being substantially thinner than a normal brick). A few machine-made 20th-century examples were also recovered.

Floor Bricks in Period 3 features and layers

B.5.35 Only six floor bricks were found in post-medieval contexts. A complete late 17th- to early 18th-century floor brick was later reused in the 18th century within wall 481 and had a burnt top. The other post-medieval floor bricks were only found as fragments, presumably after the building they had been used in was demolished (or even burnt down such as in the 1731 Fire of Barnwell). Seventeenth-century inn cellar **2062** had been floored in bricks, but only impressions of these from the surface of the mortar bedding had survived. These bricks were presumably taken up after the 1731 fire to be reused elsewhere. In this period there were certain advantages to using bricks in floors. Morton (1712, 70) stated that a floor of brick is drier, imbibes any wet that falls upon it more speedily than a floor of stone of the same sort, and is not subject to sweating in damp weather.

Floor Bricks in Period 4 features and layers

B.5.36 Just 11 floor bricks were recorded in Period 4 contexts. It should be noted that yellow brick recorded within *c*.1830s cellar floor 392 was not included in the statistics. Presumably re-used post-medieval bricks were used in floor 600. A few fragments of floor brick were found in the backfill of features. Nineteenth-century square and sub-square machine-made tiles were found in floors 322 and 360.

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
193	1	660	101mm (4") x 40mm (1½")	Yellow sandy. Worn smooth on top.	Late 18th to 19th century	Layer	3
322			Tiles 160mm x 150mm	From tiled floor. Machine made. Machined off. Not weighed	Late 19th/early 20th century.	Floor	4
360			150mm² (5")	Red machine made tiles. Not weighed	19th century	Floor	4
481	1	2021	220mm (8½") x 105mm (4") x 47mm (1¾")	Yellow/red mixed. Sanded. Only a couple of vegetative impressions Reasonably well made. Arrises ok. Smoothed top. Subsequently burnt (sooted) – no burning elsewhere. Reused from an earlier floor of building which had been near a fire?	Late 17th-18th	Wall	3
600	2	2099	A) 210mm (8¼") x 101mm (4") x 41-44mm (1¾") B)100mm (4") x 40mm (1½")	A) Orange sandy (1523g). Slight crease on face. Some small cracks. Reasonably well made. Smoothed top. B) Yellow to red mixed (576g). Creased face. Smoothed surface	17th-18th	Floor	4
927	2	256	34mm (1¼") x2	Two orange. Smoothed top.	mid 18th-19th	Well **931**	4
988	1	216	35mm (1¼")	One red with yellow clay lump inclusions. Sanded base. Near vertical arrises. Smoothed top	18th-early 19th	Pit **989**	3
1049	1	82		Yellow/orange. Smoothed top	18th-19th	Well **1051**	4
1225	1	398	33mm (1¼")	Yellow/red clay mixed. Well made. Near vertical arrises. Top very smooth.	Mid 18th-19th	Structure **1221**	4
1569	2	431	A) 45mm (1¾") B) 32mm (1¼")	Two yellow orange. Both have smoothed top. Cracks etc.	18th-19th	Pit **1570**	3
1774	1	56	20mm (¾")	Orange with a large grey core.? floor brick – could be medieval floor tile. Has a smoothed top		Pit **1741**	3
2197	4	1534	All 110mm (4¼") 28-31mm (1¼")	Yellow. Four part bricks. Well made. Very good arrises -vertical sides. All have smoothed tops	Late 18-19th	Pit **2199**	4
2766	1	258	108mm (4") 43mm (1¾")	Yellow/orange to red poorly mixed. Many cracks. Top is worn smooth	mid 18th-19th	Pit **2765**	4
Total	*17*	*8011*					

Table B.5.4: *Floor brick*

Decorative Bricks

B.5.37 There were just three decorative bricks (Table B.5.5), one in a Period 3 well and two in Period 4 features. The other two decorative bricks were coping bricks, probably from the top of walls.

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature	Per
127	1	601		Decorative brick fragment. Yellow sandy. Semi-circular capping brick uses include for top of walls.	19th century	Pit **128**	4
658	1	2535	120mm (4¾") width, up to 93mm (3¾") high	Deep red. Coping brick from top of wall? Rises to a pediment.	Late 18th-19th	Well **660**	3
2192	1	521	108mm (4¼") width x 35mm (1¼") thick	Light orange sandy. On one side there are two equal rectangular panels with clay removed before firing to show a cross cut design. Arrises near vertical. Possibly from chimney	?18th century	Toilet **2188**	4
Total	*3*	*3657*					

Table B.5.5: *Decorative brick*

Medieval Floor Tile

B.5.38 A small collection of medieval floor tile (33 fragments weighing 3795g) was recovered from 14 contexts (Table B.5.6). The majority of the floor tile was found in seven medieval contexts (25 fragments, 2.790kg). Most of these (20 fragments weighing 2.323kg) were from three deposits from within pit **1794**. The vast majority of these tile fragments had been burnt and had therefore been removed, presumably from the priory. They may have initially been placed in middens as there were fragments from many different tiles.

B.5.39 Two of the tiles had impressed decorations which had been glazed: a tile with a *Fleur-de-lis* design was used as packing for post-medieval wall 492 and a tile with geometric design was found in pit **1794**. The majority of the tile had been unglazed. One of the tiles was of triangular shape (Period 2 pit **2713**), whilst the others, where discerned, were from square tiles.

B.5.40 Harvest Way had far more tile fragments than other excavations within the lay settlement. Two medieval floor tiles were found in the Coldhams Lane excavation. These comprised a fragment with green glaze on top, which may have been in a contemporary pit, and an unglazed fragment (Atkins 2013b). 'Rare' medieval floor tile was found in the Easterngate Hotel excavation directly to the east of the site (Newman 2013, 93), were an impressed tile was recorded. The design of this tile appears to have been sub-divided into four quadrants with the lower right containing a stylised armorial shield, above which the feet of a probable heraldic beast were discernible. No medieval tile was found in the Newmarket Road excavations (Atkins 2015b).

Ctxt	No	Wt (g)	Comments	Feature	Per
23	1	36	Orange sandy. Green brown glaze	Pit **24**	3
167	1	243	Hard orange sandy with reduced grey core. Slightly chamfered sides. 25mm (1") thick	Pit **168**	2
491	1	346	Orange sandy with grey core. 122mm (5") x 24mm (1") thick. Impressed decoration in top. Fleur-de-lis design in yellow/green glaze. 13th/14th century. Reused as mortar has been plastered on decoration. SF54.	Wall 492	3
1710	2	102	Orange on surface with grey reduced elsewhere. 23mm (¾") thick. Smoothed top on both.	Pit **1741**	3
1795	4	896	A) One hard orange sandy (181g). 22mm <1" thick. Chamfered sides. Burnt black – soot on top of exterior (orange to brown remainder of tile). 13th/14th century B) Two (from one tile) in a hard orange sandy fabric with large grey core with	Pit **1794**	2

Ctxt	No	Wt (g)	Comments	Feature	Per
			frequent flint and very occasional small yellow clay lump inclusions (617g). 24-25mm (1"). Slight to moderately burnt dark brown on top of tile. C) One hard orange sandy grey core (98g). 23mm (1") Some splash glaze on side. Burnt on top.		
1796	1	95	25mm (1"). Orange to red sandy. Burnt	Pit **1794**	2
1862	15	1332	A) One grey (131g). 24mm (1") thick. Impressed decoration in top. Geometric design with remains of three circles (32mm in diameter) and a linear line. Green/brown glaze infilling. Burnt afterwards on base and sides (soot) after disuse? SF151. 13th/14th century. B) One hard orange with large grey to black core (40g). 20mm (<1" thick). Burnt black – soot on top of exterior. C) One hard orange sandy (378g). 5" wide (?square) and 23mm (1") thick. Slight chamfer. Unglazed on top, but splash green/brown glaze on side. D) Twelve orange sandy with frequent small flint <2mm occasional flint up to 80mm (783g) 25mm (1"). Near vertical sides. Unglazed. All heavily burnt? from more than one tile?	Pit **1794**	2
2032	1	318	Orange with grey core with occasional white quartz up to 6mm and small pebbles up to 10mm. 120mm (5") x 18-20mm (¾") thick. Splash green/brown glaze on part of one side and base. Top worn smooth.	Layer	3
2033	2	80	Orange with grey core. 18mm (¾"). Smoothed top	Pit **2096**	2
2247	1	34	?med floor tile. Surface orange, the remainder grey. 23mm (1") thick.	Layer	3
2249	1	74	?Medieval floor tile. Orange surface predominantly grey reduced. Burnt top.	Well **1456**	3
2707	1	79	?Late medieval tile. Orange sandy. Had been triangular shape. Part survives. Three linear grooves along one side of tile. 15mm (½") thick.	Pit **2713**	2
2869	1	65	?med floor tile. Surface orange, the remainder grey. 23mm (1") thick. Top smooth.	Well **2412**	2
3504	1	95	Orange sandy. 26mm (1") thick. Green/brown glaze on exterior	Pit **3503**	3
Total	*33*	*3795*			

Table B.5.6: *Catalogue of medieval floor tile*

Roman Tile

B.5.41 There was a very small assemblage of Roman tile comprising four fragments (0.571kg) from four contexts (Table B.5.7). Three were from medieval contexts, including two fragments from two different deposits in Well **2554**.

Ctxt	Tr	No	Wt (g)	Comments	Feature	Per
39	1	1	83	Hard orange sandy with reduced grey core. ?Tegula	Pit **40**	2
3146		1	104	?Roman. Hard orange sandy. 22mm (<1"). Burnt-soot on reverse. Flat	Well **2554**	2
3269		1	326	Very hard fully oxidised orange. 35mm (1½"). Flat	Well **2554**	2
3282		1	58	?Roman. Hard orange sandy with a slight grey core. 29mm (1")	layer	4
		4	571			

Table B.5.7: *Roman tile*

Ceramic Roof Peg Tile

B.5.42 A large assemblage of peg tile comprising 4855 fragments (267.801kg) from 322 contexts was recovered (Table B.5.8). Tile from medieval and post-medieval features were kept, but from Period 4 features they were largely discarded, although their presence was noted on context sheets. This discard policy explains the relatively small quantities of Period 4 tile recorded in this report. A representative sample (*c.*10%) of the enormous assemblage from pit **3478** was weighed on site (not washed), the rest counted and a weight estimated from the recorded sample.

Peg tile in Period 2 features and layers

B.5.43 There were 3964 tile fragments (212.697kg) from 152 contexts in medieval features. The vast majority are presumed to be peg tiles, though two nibs were found (one in an orange oxidised fabric in pit **2486** and a nib in an orange tile with grey core from pit **3478**). A mixture of one- and two-peg hole type tiles were found in all fabric types,

although there were biases. Nearly all the yellow tile were of one-peg type (although two two-peg types were also recovered). In fully oxidised orange, the tiles were mostly two-peg hole types whereas for those that were orange with a reduced grey core the numbers were equal for both types.

B.5.44 Well over half the assemblage was recovered from pit **3478** which contained 2846 fragments (estimated 164.56kg). Almost all of the collection was relatively unabraded yellow tiles of one-peg hole type. One nearly complete yellow tile was found and was 256mm (10") long, 161mm (6½") wide and was of one-peg hole type. This suggests it is extremely likely these tiles were demolition rubble from a single building.

B.5.45 Two other pits produced notable quantity of tiles. Pit **3451** had 459 fragments (15.013kg) from 10 different deposits. This tile seems to have derived from different sources as there was a mixture of six fabrics present. Their condition was largely very abraded (32.7g per fragment), suggesting they had been discarded as they were not reusable. An exception was a tile with a complete width 158mm (6") of one-peg hole type in an orange sandy fabric with reduced grey core. In contrast pit **1621** had 102 fragments (8.91kg) from six pit contexts, but these were of reasonable size at 87.4g per fragment. The widths of two tiles were measurable, one at 168mm (6½") in an orange fully oxidised fabric and the other at 144mm (5¾"), in a yellow fabric of one-peg hole type.

B.5.46 A further seven pits had more than 1kg of tile. These comprised pit **1940** with 42 tile fragments (1.178kg) from five deposits, pit **1969** with 47 fragments (2.233kg) from seven deposits, pit **2671** 23 fragments (1.19kg) from two contexts, pit **2682** had 29 tile fragments (1.99kg) from five contexts, pit **3351** with 32 fragments (1.92kg) from four contexts, pit **3354** had 36 fragments (1.25kg) from three contexts and pit **3499** had 46 tile fragments (1.93kg) from two contexts.

Peg tile in Period 3 features and layers

B.5.47 There were 688 fragments (41.191kg) within 127 post-medieval period contexts. A significant proportion of the tile came from cess pit **1424** where there was 125 fragments (15.183kg) from 17 deposits. The tile was mostly found in the backfill, but a small group was used in the construction of the cess pit. The relatively large size of the tiles can be seen in eight examples which had widths surviving. Four are in a fully oxidised orange and have widths between 162mm and 172mm wide (6½" and 6¾"). Three of these tiles are of two-peg hole type and one is of uncertain type. Four are orange with a grey core and these are between 158mm (6¼") and 168mm (6½") wide. One is a one-peg hole type tile, two of two-peg hole types with one uncertain.

B.5.48 One further feature, pit **3503**, had a moderate to large quantity of tile with 78 fragments (3.809kg) from three deposits. The tiles were made in seven fabrics and were of small abraded size (48.8g per fragment), suggesting that this group may have come from middens before being disposed of within the pit.

B.5.49 A further four features contained more than 1kg of tile. Pit **1741** had 29 tile fragments (1.166kg) from five deposits, mostly of small size but included an orange oxidised tile which was 158mm (6¼") wide and was of two-peg hole type. In well **1456** there were 31 fragments (1.385kg). Within ditch **2020** there were 14 fragments (1.267kg) from two deposits. The inn cellar **2061** was totally excavated by hand and only produced 60 tile fragments (2.486kg). This was a low quantity with the tiles being in different fabric types and very small in size, at 41.4g per fragment. Overall, this suggests that they may not have originated from the actual building.

Peg tile in Period 4 features and layers

B.5.50 In post *c.*1800 contexts there were 197 fragments (13.681kg) from 41 contexts. A near-complete orange oxidised tile was used in the construction of wall 339. It was in an orange oxidised fabric, was 263mm (10½") long, 156mm (6") wide and of two-peg type tile.

B.5.51 Only one feature produced a large quantity of tiles (ditch **2403**), with 28 fragments (6.052kg). Two tiles had been cut lengthways (321mm and 325mm (12½"). A further three tiles had widths surviving; (165mm (6½"), 170mm (6¾") and one at 201mm (8")). The only other feature with over 1kg of tile was well **1051** which produced 50 fragments (1.997kg) from five deposits.

Ctxt	No	Wt (g)	Comments	Feature	Per
23	1	12	Hard orange sandy with large reduced grey core	Pit 24	3
33	2	17	Yellow sandy	?Posthole **34**	3
37	6	126	In two fabrics: 1) Three yellow/red clay mixed (60g) 2) Three orange sandy (66g)	Posthole **38**	3
39	5	183	Mixed yellow/red clay	Pit **40**	2
75	1	30	Orange	Floor	3
78	5	101	Orange with grey core? type peg tile	Layer	3
79	3	140	In three fabrics: 1) One orange sandy (34g) 2) One orange with grey core (51g) 3) One hard red (55g)	Layer	3
88	1	13	Hard orange sandy with reduced grey core	Pit **80**	2
90	1	39	Orange sandy	Pit **80**	2
102	1	48	Orange sandy with reduced grey core	Pit **99**	2
103	4	147	In three fabrics: 1) Two orange sandy with reduced grey core (113g). Very small white clay lump inclusions. 2) One hard orange sandy with reduced grey core (13g) 3) One yellow (21g)	Pit **99**	**2**
123	1	2	orange sandy	Pit **124**	3
155	1	55	Yellow sandy	?Ditch **156**	2
159	1	138	Yellow	Pit **160**	3
167	8	213	In three fabrics: 1) Six in a yellow/red mixed fabric (163g) 2) One hard orange sandy with reduced grey core (62g) 3) One Hard orange sandy fully oxidised (53g)	Pit **168**	2
173	3	209	Yellow/red mixed	Ditch **176**	3
193	8	180	Yellow/red mixed. One sub-rounded peg hole 45mm from side. 2 peg hole type	Layer	3
199	2	49	In two fabrics: 1) Yellow/red clay mixed (26g) 2) Yellow (30g). Sub-rounded peg hole 30mm from side. 2 peg hole type.	Layer	3
209	1	44	Yellow/orange clay mixed	Pit **260**	3
339	1	986	Hard orange sandy. Most of one roof tile. (c.85% complete). 263mm (10½") long and 156mm (6") wide. 2 peg type tile.	Wall 339	4
404	1	20	Yellow	Layer	3
410	1	9	Yellow/orange clay mixed	Layer	4
414	1	88	Orange. 2 peg hole type	layer	3
460	2	298	Orange sandy. Both 2 peg hole type	Layer	3
491	1	122	Orange sandy with grey core	Wall 492	3
500	5	234	In two fabrics: 1) One orange sandy (56g) 2) Four grey with frequent small chalk lumps (178g)	Floor	3
521	3	44	In two fabrics: 1) Two orange sandy with grey core (35g)	Layer	3

Ctxt	No	Wt (g)	Comments	Feature	Per
			2) One yellow (9g)		
522	2	26	In two fabrics: 1) One orange (7g) 2) One orange with grey core (19g)	Layer	3
546	9	505	In two fabrics: 1) Four orange (319g) 2) Five orange with grey core (186g)	Pit **430**	3
562	1	20	Orange with grey core	Pit **560**	3
565	1	14	Orange sandy with yellow clay lump inclusions (14g)	Layer	3
576	2	34	White	Pit **574**	3
581	1	20	Orange with grey core	Drain **582**	4
696	5	157	In three fabrics: 1) 1 yellow (61g) 2) 1 yellow/red mixed (36g) 3) Three orange grey core (60g)	Layer	4
697	23	863	In five fabrics: 1) Nine yellow (454g) 2) Six orange with grey core (86g) 3) One yellow/red clay mixed (93g) 4) Three hard orange (74g) 5) Four yellow with red clay lumps (72g)	Layer	4
698	3	110	Three yellow/orange mixed. One burnt exterior	Layer	4
701	1	21	Yellow/red mixed	Surface	3
703	2	37	Orange sandy with grey core	Layer	3
731	1	590	Yellow. Width 170mm (6½")	Ditch **830**	3
740	1	50	Orange	Well **739**	4
754	2	162	In orange oxidised	Pit **755**	3
778	8	457	In three fabrics: 1) One yellow (72g) 2) Two orange (62g) 3) Five Orange with grey core (323g)	Well **784**	2
787	7	1124	In three fabrics: 1) Yellow (328g) 151mm (6") wide 2) Orange (313g) 3) Five orange with grey core (483g). 2 peg hole type tile	Layer	3
812	4	220	In two fabrics: 1) Two orange (161g) 2) Two orange with grey core (59g). 2 peg hole type.	Floor	3
818	12	669	Yellow/red mixed. 2 peg hole type tile	Ditch **816**	3
822	5	379	In three fabrics: 1) 1 yellow (38g) 2) 1 Orange (40g) 3) 3 yellow/orange mixed (301g)	Pit **821**	3
829	1	78	Orange	Ditch **830**	3
836	1	120	Yellow/orange clay mix	Layer	3
840	1	58	Yellow/orange mixed	Layer	3
842	6	265	in three fabrics: 1) One yellow (63g) 2) Two orange (138g). 2 peg hole type. Post-med? 18th century. 3) Three orange with grey core (64g)	Layer	3
845	1	8	Yellow/red mixed	Layer	3
853	3	94	In two fabrics: 1) One orange (37g) 2) Two orange with grey core (57g)	Layer	3
862	3	23	Yellow and orange clay mixed	Floor	3
910	1	12	Hard red.? post-medieval	Pit **874**	4
913	1	16	Orange with grey core	?Pit **912**	2
915	2	45	In two fabrics: 1) One yellow/orange (24g) 2) Yellow/orange poorly mixed tile with grey core (21g)	Pit **914**	3
916	4	172	Four orange. 2 peg hole type.	layer	3

Ctxt	No	Wt (g)	Comments	Feature	Per
917	2	31	In two fabrics: 1) One orange with grey core (15g) 2) One yellow (16g)	Layer	3
927	6	234	In three fabrics: 1) Three Yellow (91g) 2) Hard orange with grey core (21g) 3) 2 Orange (122g)	Well **931**	4
986	3	102`	In two fabrics: 1) Two orange with grey core (79g) 2) One orange (23g)	Pit **987**	3
988	6	95	In three fabrics: 1) Four orange (63g) 2) One orange with grey core (23g) 3) Yellow/orange mixed (9g)	Pit **989**	3
1043	4	97	In two fabrics: 1) One yellow (47g) 2) Three yellow/red mixed (50g)	Well **1051**	4
1044	8	501	In two fabrics: 1) Seven yellow/red mixed (450g) 2) One yellow/orange clay mixed with grey core (51g)	Well **1051**	4
1045	15	548	In five fabrics: 1) Eight yellow-red mixed (310g) 2) Three yellow (117g) 3) One orange oxidised (35g) 4) One yellow-red mixed with grey core (21g) 5) Two orange with grey core (65g)	Well **1051**	4
1047	13	431	In four fabrics: 1) Six yellow (201g) 2) Five yellow/orange clay mixed (170g) 3) One yellow red mixed with grey core (11g) 4) One grey (49g)	Well **1051**	4
1049	10	420	In three fabrics: 1) One yellow (43g) 2) Eight yellow/red mixed (319g) 3) One Orange with grey core (58g)	Well **1051**	4
1113	3	226	in two fabrics: 1) One yellow (46g) 2) Two Orange to red (180g). 2 peg type tile	Pit **1112**	4
1135	1	63	Orange with grey core	Pit **1133**	3
1143	35	1177	In three fabrics: 1) 24 in a yellow/orange clay mix (759g). One 2 peg type; 1?? peg type 2) 10 in orange sandy fabric (384g). One 2 peg hole type 3) One yellow/orange clay mix with grey core (34g)	Floor	3
1147	1	109	Yellow/orange clay mixed. 2 peg hole type	Floor	3
1206	4	89	In two fabrics: 1) One yellow (24g) 2) Three yellow/orange mixed (65g)	Floor	3
1225	4	752	In three fabrics: 1) Two mixed yellow/red (510g). Width 171mm (6½"). 2×2 peg hole type 2) One yellow (156g) Lime mortar attached. Well-made tile. 3) One yellow with grey core with white clay inclusions (86g). Uneven and poorly made	Structure **1221**	4
1226	1	56	Orange.? tile	Pit **1210**	4
1259	3	27	In two fabrics: 1) One orange (7g) 2) Two orange with grey core (20g)	Surface	4
1263	3	69	In two fabrics: 1) Two orange (16g) 2) One yellow (53g)	Ditch **1264**	2
1278	1	13	Orange with grey core	Layer	2
1283	1	93	Orange with grey core	Post hole **1284**	2
1286	1	4	Orange	Pit **1335**	2
1287	1	13	Orange	Pit **1288**	3

Ctxt	No	Wt (g)	Comments	Feature	Per
1291	4	67	in two fabrics: 1) One yellow (4g) 2) Three yellow/red mixed (63g)	Pit **1293**	4
1292	8	179	In four fabrics: 1) One orange (18g) 2) One yellow (11g) 3) Five yellow/orange mixed (113g) 4) One yellow/orange mixed with grey core (37g)	Pit **1293**	4
1296	1	28	Yellow/orange mixed	Pit **1297**	4
1298	1	47	One yellow/orange mixed	Pit **1299**	3
1306	1	25	Yellow/orange mix. Two finger impressions	Post hole **1307**	3
1310	5	112	in three fabrics: 1) One yellow (42g) 2) One hard orange (16g) 3) Three yellow/red mixed (54g)	Ditch **1311**	2
1363	2	138	Two hard red with grey core	Pit **1362**	2
1365	5	492	Yellow	Pit **1362**	2
1378	1	10	Orange	Pit **1380**	2
1388	1	6	Orange	Pit **1387**	4
1410	1	6	Yellow/orange mixed	Pit **1413**	2
1425	1	43	orange	Cess-pit **1424**	3
1427	1	46	Orange with grey core	Cess pit **1424**	3
1428	6	515	In two fabrics: 1) Four yellow (405g) 2) Two orange with grey core (110g)	Cess pit **1424**	3
1429	18	2278	In three fabrics: 1) 14 Orange (1623g). Some soft to medium orange, some hard orange. Width 164mm (6½"). 2 x2 peg hole type. 2x? peg type. 2) One purple exterior with grey core with small white clay lump inclusions(251g). 2 peg hole type. 3) Three hard orange with large grey core (404g). One has a "dummy hole" -not completely through – presumably by mistake. 1 peg hole type.	Cess pit **1424**	3
1432	13	4954	In two fabrics: 1) Three orange oxidised (1.595kg). 1) 172mm (6¾") wide. 2) 162mm (6½") wide -this is a 2 peg hole type tile. 3) 165mm (6½") wide. 2 peg hole type tile. 2) Ten in an orange sandy with grey core (3.359kg). Includes parts of two tiles mortared together on top of each other. The lower one is 1) 165mm (6½") wide and is a 1 peg hole tile. The upper is a 2 peg hole type tile. 2) 165mm (6½") wide and is a 2 peg hole type. 3) 158mm (6¼") wide. 4) 165-168mm (6½") and is 1 peg hole type. A further tile is a 2 peg hole type	Cess pit **1424**	3
1433	22	1886	In six fabrics: 1) Nine yellow (564g) 2) Two orange (323g) 3) Four orange with grey core (439g). 1 peg tile type 4) Three yellow/red clay mixed with grey core. Poorly made tiles (108g) 5) Three hard red with frequent small white clay lump inclusions and slight grey core (269g) 6) One hard red (183g)	Cess pit **1424**	3
1448	3	66	In two fabrics: 1) Two orange with grey core (44g) 2) One yellow/orange mixed (22g)	Pit **1447**	2
1454	2	91	Orange	Pit **1451**	4
1457	15	744	In three fabrics: 1) Two yellow (133g) 2) Five hard orange with grey core (295g).? peg type. 3) Eight orange (316g)	Well **1456**	3
1459	2	24	Orange	Well **1456**	3
1460	3	214	In two fabrics: 1) One orange with grey core (121g)? peg tile type 2) Two orange (93g)	Well **1456**	3

Ctxt	No	Wt (g)	Comments	Feature	Per
1529	1	58	Orange with yellow clay lump inclusions and grey core (58g)	Pit **1535**	2
1531	1	32	Orange with grey core	Pit **1535**	2
1569	5	491	In two fabrics: 1) Four orange sandy (376g) 1 peg hole type 2) One yellow (115g)	Pit **1570**	3
1572	5	388	In two fabrics: 1) Four orange (311g). Very well made (machine) .most likely late 19th-century. 2) One orange sandy (77g)	Pit **1571**	4
1584	21	1040	In two fabrics: 1) Ten orange (387g). Two burnt 2) Seven orange with grey core (374g) 3) Three yellow (206g) 4) One orange to purple (73g). Used estuarine clay	Well or pit **1577**	3
1586	93	8416	1) Twenty-two orange to red with grey core (1112g). Three burnt. 1 peg hole tile (75mm from side). 2) Fifty-nine orange (6123g). width 168mm (6½") 2x 1 peg hole type (61mm and 78mm from their respective sides). 5×2 peg hole type. 4? peg hole type 3) Twelve yellow (1181g). One burnt black (soot) in parts. One width 144mm (5¾"). 1 peg hole tile (80mm from side);? peg hole type	Pit **1621**	2
1590	3	413	Orange with grey core	Layer	3
1608	2	13	Two orange. 2 peg hole type	Posthole **1609**	4
1610	6	283	In three fabrics: 1) Two orange (41g). Very well made (machine) most likely late 19th century. 2) Three orange (198g) 3) One yellow/orange mixed (44g)	Pit **1611**	3
1613	1	81	One yellow/orange	Surface	2
1619	2	52	In two fabrics: 1) One grey (23g) 2) One orange with grey core (29g)	Pit **1621**	2
1620	2	125	In two fabrics: 1) One hard orange with grey core (55g) 2) One hard orange (70g)	Pit **1621**	2
1628	2	128	Yellow	Pit **1621**	2
1629	1	139	Yellow	Pit **1621**	2
1640	1	22	Orange with grey core	Pit **1644**	2
1663	1	2	Orange	Posthole **1664**	3
1696	2	50	In two fabrics: 1) one orange with grey core (36g) 2) One yellow (14g)	Pit **1621**	2
1709	6	96	In three fabrics: 1) Four orange sandy (33g) 2) One hard orange sandy (39g) 3) One orange with grey core (24g)	Pit **1741**	3
1710	17	946	In two fabrics: 1) Seven orange (520g). One width 158mm (6") 2 peg hole type. 2) Ten orange with grey core (426g)	Pit **1741**	3
1717	11	143	In two fabrics: 1) One orange with grey core (18g) 2) Ten orange (125g)	Pit **1868**	2
1718	2	70	Orange with grey core. Has very small white clay lump inclusions	Drain **1719**	4
1745	1	13	Orange	Well **1747**	2
1749	2	49	Two orange with grey core (49g). Both heavily burnt	Pit **1748**	2
1760	1	39	Orange with grey core	Pit **1756**	2
1772	2	38	In two fabrics: 1) One mixed yellow/orange with yellow clay lump inclusions (12g). Has slightly purple core. 2) One orange with grey core (26g)	Pit **1741**	3
1773	3	76	In two fabrics:	Pit **1741**	3

Ctxt	No	Wt (g)	Comments	Feature	Per
			1) Two orange (60g) 2 peg hole type 2) One orange with yellow clay lump inclusions with grey core (16g)		
1774	1	10	Orange with grey core	Pit **1741**	3
1798	1	9	Orange	Pit **1797**	2
1802	3	76	In two fabrics: 1) One yellow (23g) 2) Two orange with grey core (53g)	Posthole **1800**	3
1842	1	35	Yellow	Layer	3
1843	9	285	In two fabrics: 1) Two yellow (163g) 2) Seven orange with grey core (122g)	Pit **1853**	2
1859	2	41	In two fabrics: 1) One orange with grey core (29g) 20 Yellow/orange mixed (12g)	Pit **1858**	3
1888	11	729	In four fabrics: 1) Two orange (90g) 2) Four yellow (212g) 3) Four orange with grey core (272g).? type tile 4) One orange with grey core with small white clay lumps (155g)	Cess-pit **1424**	3
1903	1	22	Orange with grey core	Pit **1901**	3
1932	7	204	In two fabrics: 1) Five orange sandy (174g) 2) Two orange with grey core (30g)	Well **1939**	2
1933	1	107	Orange	Well **1939**	2
1937	1	25	Orange with grey core	Well **1939**	2
1941	26	660	In five fabrics: 1) Six yellow (180g) 2) One yellow red mixed (poorly) with grey core (8g) 3) Two yellow/orange mixed (28g) 4) Five orange (158g) 5) Twelve orange with grey core (286g). One burnt	Pit **1940**	2
1963	1	93	Orange	Pit **1940**	2
1968	8	180	In three fabrics: 1) Five yellow (123g) 2) One orange (33g) 3) Two orange with grey core (24g)	Pit **1940**	2
1970	5	87	In two fabrics: 1) Four orange (64g) 2) One orange with grey core (23g)	Pit **1969**	2
1971	4	211	In two fabrics: 1) Two orange (152g). Well made.? post-medieval 2) Two poorly made yellow/orange mixed with grey core (59g)	Pit **1969**	2
1973	3	43	Orange	Pit **1969**	2
1978	3	76	The yellow/red tile with grey core. Poorly puddled	Pit **1986**	2
1979	4	120	In three fabrics: 1) Two hard orange with grey core (92g) 2) One yellow/orange mixed (10g) 3) One hard red (18g)	Pit **1986**	2
2016	3	378	In three fabrics: 1) One yellow (251g) 2) Three orange (68g) 3) One orange with grey core (59g)? type tile	Ditch **2020**	3
2018	11	889	In four fabrics: 1) Two yellow (462g) 2) One soft orange (77g) 3) Two hard red (60g) 4) Six yellow/orange (290g)	Ditch **2020**	3
2021	25	1559	In four fabrics: 1) Three yellow (261g) 2) Five orange with grey core (212g) 3) Four red with yellow clay lumps (209g) 4) Thirteen orange (877g)	Pit **1969**	2
2022	7	271	In four fabrics:	Pit **1969**	2

Ctxt	No	Wt (g)	Comments	Feature	Per
			1) Three orange (121g) 2) Two orange with grey core (24g) 3) One orange with small yellow lump inclusions (6g) 4) One orange with yellow lump inclusions up to 7mm in size and grey core (120g)		
2023	1	23	Orange	Pit **1969**	2
2024	1	10	Orange	Inn **2061**	3
2025	21	1184	In four fabrics: 1) Two yellow/orange mixed (161g). Sub-square peg hole. 2 peg hole type. 2) Eleven orange (297g) 3) Seven orange with grey core (545g) 4) One yellow (181g)	Inn **2061**	3
2027	8	281	In two fabrics: 1) Two yellow/orange mixed (87g) 2) Six orange with grey core (138g)	Inn **2061**	3
2028	20	641	In four fabrics: 1) Seven orange with grey core (197g)? peg hole type 2) Eleven orange (329g) 3) One yellow (8g) 4) One orange with yellow clay lumps and grey core (107g). Poorly mixed	Inn **2061**	3
2030	6	217	Orange with grey core	Inn **2061**	3
2031	4	153	In two fabrics: 1) Two yellow (30g) 2) Two yellow with grey core (123g)	Inn **2061**	3
2032	7	462	In three fabrics: 1) One yellow (132g) 2) Four hard orange grey core (229g) 3) Two hard orange (101g) 2 peg tile type	Layer	3
2033	24	696	In five fabrics: 1) One yellow and orange mixed (87g) 2) two grey (49g) 3) Eight orange (258g)? type tile 4) Twelve orange with grey core (283g) 5) One hard orange with grey core (19g)	Pit **2096**	2
2039	2	120	Orange. 1? peg hole type	Pit **2038**	2
2041	5	323	In three fabrics: 1) Two orange (132g) 2) One hard orange (18g) 3) Two orange with grey core (173g)	Pit **2040**	2
2067	2	39	In two fabrics: 1) One yellow (24g) 2) One yellow/orange mixed (15g)	Pit **1969**	2
2098	1	38	Orange with grey core	Pit **2096**	2
2100	7	129	In two fabrics: 1) Four orange (73g) 20 Three orange with grey core (56g)	Pit **2096**	2
2110	1	24	Yellow	Posthole **2109**	3
2117	8	947	In four fabrics: 1) Five yellow (340g) 2) One orange with grey core (475g). Hard mortar attached. 3) One soft to mid orange (72g) 4) One hard orange (60g)	Cess pit **1424**	3
2119	3	159	In two fabrics: 1) One hard orange with grey core (114g). 1 peg hole type (85mm from side) 2) Two yellow (45g)	Cess pit **1424**	3
2135	3	88	In two fabrics: 1) Two orange (70g) 2) One orange with grey core (18g)	Pit **2136**	3
2148	7	645	In two fabrics: 1) Five orange with grey core (585g) 2) Two yellow and red mixed with grey core (60g). Poorly made.	Cess pit **1424**	3
2155	10	343	In four fabrics:	Pit **2154**	2

Ctxt	No	Wt (g)	Comments	Feature	Per
			1) One yellow (32g) 2) Five orange with grey core (139g) 2 peg tile type 3) Three orange (98g) 4) One orange with yellow clay lumps and grey core (74g)		
2158	28	784	In three fabrics: 1) Four orange/red mixed (140g) 2) Ten orange with grey core (147g) 3) Fourteen Orange (497g) 2 peg tile type	Pit **2157**	3
2159	1	108	Yellow/red mixed	Pit **2157**	3
2162	2	22	In two fabrics: 1) One yellow (18g) 2) One orange with grey core (4g)	Pit **2157**	3
2163	1	11	Orange with grey core	Pit **2173**	2
2181	3	118	In two fabrics: 1) Two hard orange (70g) 2) One yellow (48g)	Layer	2
2191	1	205	One orange sandy. 161mm (6½") width. 2 sub-square peg holes	Toilet **2188**	4
2217	11	403	In two fabrics: 1) Four orange with grey core (103g) 2) Seven orange (300g)	Well **1456**	3
2218	2	119	Two hard orange with grey core (119g). 1 peg hole type	Pit **2219**	2
2231	1	15	Orange with grey core	Pit **2136**	3
2238	2	42	In two fabrics: 1) One orange with grey core (20g) 2) One orange (22g)	Pit **2237**	2
2239	2	75	Orange	Pit **2237**	2
2241	1	11	One orange/purple	Pit **2237**	2
2247	5	105	In three fabrics: 1) One yellow (28g) 2) Two orange with grey core (25g) 3) Two orange (52g)	Layer	3
2249	2	110	in two fabrics: 1) One orange (67g) 2) One yellow (43g)	Cess pit **1424**	3
2273	1	11	Yellow	Pit **1940**	2
2284	9	440	In four fabrics: 1) One yellow (46g) 2) Four orange (151g) 3) Three orange with grey core (122g) 4) One yellow/red with grey core (121g). Poorly made/puddled.	Pit **2275**	2
2285	7	341	In two fabrics: 1) One orange (58g) 2) Five orange with grey core (274g) 3) One yellow (9g)	Pit **2275**	2
2290	1	17	Orange with grey core	Ditch **2289**	2
2309	5	384	In three fabrics: 1) Two yellow (164g) 2) One yellow/red mixed (156g).? 2 peg hole type (45mm from side) 3) Two hard orange (64g). Post-medieval 18th-19th century	Pit **2318**	2
2311	2	251	In two fabrics: 1) One orange with grey core (113g). 1 peg hole type 2) One yellow/orange mixed with grey core (138g). Poorly made tile. 1 peg type tile (63mm from side)	Pit **2318**	2
2313	1	68	Orange	Pit **2318**	2
2317	2	210	In two fabrics: 1) One yellow (137g) 2) One orange (73g)	Pit **2318**	2
2324	3	48	In two fabrics: 1) One yellow (23g) 2) Two orange (25g)	Pit **2327**	2
2333	6	639	In two fabrics: 1) Five orange with grey core (442g) 2) One orange (197g)	Cess pit **1424**	3

Ctxt	No	Wt (g)	Comments	Feature	Per
2335	4	631	Orange with grey core (631g). 1 peg hole type	Cess pit **1424**	3
2336	3	513	In two fabrics: 1) One orange sandy (149g) 1 peg hole type (71mm from side) 2) Two orange sandy with grey core (364g). 170mm (7") width	Cess pit **1424**	3
2341	1	143	Orange	Cess pit **1424**	3
2345	5	349	In two fabrics: 1) Four range with grey core (306g) 2 peg hole type 2) One orange with small white clay lump inclusions with grey core (43g)	Cess pit **1424**	3
2348	14	596	In three fabrics: 1) Seven orange with grey core (270g) 2) Six orange (267g). Some soot on one. 2 peg hole type 3) One red with yellow clay lump inclusions and a grey core (61g)	Cess pit **1424**	3
2369	1	24	Orange	Well **1456**	3
2400	11	3550	In three fabrics: 1) Two yellow (324g). One has width surviving (170mm (6¾") 2) Two yellow/orange mixed (176g). 1 peg hole type (70mm from side) 3) Seven orange with grey core (3050g). Two of these were reused roof tiles, cut lengthways (in half) and then mortared and used in feature. A) 321mm (12.½") long (1.176kg). B) 325mm (12¾") long (1.059kg)	Ditch **2403**	4
2401	1	190	Yellow	Ditch **2403**	4
2402	16	2312	Orange with grey core. Consists of large pieces including at least two part (most of) tiles. One consisted of four fragments (969g), it survives 194mm (+) (7¾"+) long, 201mm (8") wide. Mortar attached. Another (three fragments weighing 797g). 230mm+ (9"+) long, 165mm (6½") wide. The remainder included a peg hole – 1 peg hole type tile(66mm) from side	Ditch **2403**	4
2438	2	206	In two fabrics: 1)1 Yellow (118g) 2)1 Orange. 1 peg hole type (60mm from side)	Posthole **2438**	2
2492	1	59	Orange	Pit **2486**	2
2493	1	102	Orange with grey core. Has large nib 40mm x 30mm and 18mm high	Pit **2486**	2
2495	1	39	Orange with grey core	Pit **2494**	4
2496	6	234	In three fabrics: 1) Three yellow (158g) 2) One orange (4g) 3) Two orange with grey core (72g)	Pit **1940**	2
2502	2	39	Orange with grey core	Pit **2272**	2
2518	1	35	Orange with grey core	Pit **2515**	2
2529	2	41	In two fabrics: 1) One orange (26g) 2) One orange with grey core (15g)	Pit **2530**	2
2603	2	214	Two yellow	Pit **2603**	3
2607	3	137	In two fabrics: 1) Two yellow (129g) 2) One orange with grey core (8g)	Oven/kiln **2604**	2
2611	4	230	In two fabrics: 1) Two orange with grey core (81g). ?peg hole type 2) Two orange (149g) 2 peg hole type;? peg hole type	Pit **2610**	3
2613	2	155	Orange	Pit **2612**	3
2614	2	90	Orange	Pit **2612**	3
2616	5	208	In two fabrics: 1) Four orange with grey core (159g) 2) One hard red (47g)	Pit **2612**	3
2634	1	66	Orange	Pit **2636**	3
2660	3	422	Three yellow and orange clay mixed. One is a 2 peg hole type. Two were? type tiles	Pit **2659**	3
2664	1	77	Yellow	Pit **2665**	2
2666	6	140	In three fabrics: 1) Four orange with very small yellow clay lump inclusions and grey core (62g) 2) One yellow (41g)	Layer	3

Ctxt	No	Wt (g)	Comments	Feature	Per
			3) One yellow and orange mixed (37g)		
2667	19	1066	In four fabrics: 1) One yellow (44g) 2) Two yellow and orange mixed (135g) 3) Five orange (299g) 4) Eleven orange with grey core (588g) 1?type peg tile	Pit **2671**	2
2670	4	126	In four fabrics: 1) One orange (70g) 2) One yellow (12g) 3) One yellow/orange mixed (36g) 4) One orange with grey core (8g)	Pit **2671**	2
2674	5	497	In two fabrics: 1) One orange (153g) 2) Four orange with grey core (344g)	Pit **2682**	2
2676	11	562	In four fabrics: 1) One yellow/red (67g) 2) Three orange (122g) 3) Six yellow (277g) 4) One orange with grey core (96g)	Pit **2682**	2
2677	6	301	In two fabrics: 1) One orange sandy (110g) 2) Five yellow sandy (191g)	Pit **2682**	2
2678	3	367	In three fabrics: 1) Yellow (128g) 2) Orange (101g) 3) Orange with grey core (138g)	Pit **2682**	2
2679	3	194	In two fabrics: 1) Two yellow (161g) 2) One yellow/orange mixed (33g)	Pit **2682**	2
2680	1	73	Yellow	Pit **2682**	2
2683	4	200	In two fabrics: 1) Three orange with grey core (136g) 2) One yellow and red mixed clay, poorly made with grey core (164g). Uneven.		0
2694	2	130	In two fabrics: 1) One orange with grey core (78g) 2) One yellow (52g)	Pit **2695**	2
2704	1	286	One yellow. 1 peg hole type (56mm from side)	Pit **2703**	2
2732	1	26	Orange	Pit **2725**	2
2738	1	34	Orange with grey core	Pit **2737**	2
2762	3	17	In two fabrics: 1) Two yellow (14g) 2) One orange with grey core (3g)	Posthole **2761**	2
2764	1	18	Orange	Posthole **2763**	3
2766	3	88	Orange to light brown	Pit **2765**	4
2773	2	50	Two Yellow and red mixed	Posthole **2772**	0
2796	2	80	In two fabrics: 1) Orange sandy (16g) 2) Yellow/orange clay mixed (64g)	Floor	4
2801	1	82	Orange sandy	Layer	2
2817	14	219	In three fabrics: 1) Four orange (79g) 2) One yellow to orange (24g) 3) Nine orange with grey core (116g)	Layer	4
2837	1	26	Orange with grey core	Floor	3
2850	2	65	In two fabrics: 1) One orange (32g) 2 peg hole type 2) One orange with grey core (33g)	Pit **3002**	3
2851	2	89	In two fabrics: 1) One orange with grey core (20g) 2) One yellow/red mixed (69g). 2 peg hole type	Pit **2851**	2

Ctxt	No	Wt (g)	Comments	Feature	Per
2863	3	63	In two fabrics: 1) One yellow (21g). 2 peg type 2) Two orange (42g)	Pit **2996**	2
2866	3	191	In two fabrics: 1) Two yellow (152g) 2) One orange (39g)	Well **2554**	2
2867	2	75	Yellow	Well **2554**	2
2868	5	157	In four fabrics: 1) One orange with grey core (43g) 2) One yellow (47g) 3) One orange (16g) 4) Two poorly mixed orange and yellow clay with reduced grey core (51g)	Pit **2851**	2
2883	5	80	In three fabrics: 1) Three grey (61g) 2) one orange (6g) 3) One orange with grey core (13g)	Layer	4
2890	2	91	Yellow with red clay mix	Layer	3
2906	1	48	Yellow	Layer	4
2922	1	19	Orange	Pit **2923**	3
2949	1	37	Orange with grey core	Pit **2953**	2
2952	3	114	In two fabrics: 1) Two orange with grey core (88g) 2) One orange (26g)	Pit **2953**	2
2955	2	43	In two fabrics: 1) One orange with grey core (30g) 2) One yellow/red mixed (13g)	Pit **2956**	2
2997	2	53	In two fabrics: 1) One orange with grey core (40g) 2) One orange/yellow clay mix (13g)	Pit **2996**	2
3033	3	54	In two fabrics: 1) Two orange with grey core (51g). 1? peg hole type 2) One poorly mixed yellow and red clay with grey core (3g)	Post hole **3034**	3
3064	1	63	Orange	Posthole **3063**	3
3066	5	225	In two fabrics: 10 Three orange (127g) 2) Two orange with grey core (98g)	Pit **3065**	3
3083	1	40	Yellow	Pit **3081**	2
3085	1	38	Orange with grey core	Pit **3081**	2
3088	1	129	Yellow. 1 peg hole type (75mm from side)	Well **2412**	2
3090	1	20	Orange sandy.? tile	Well **2412**	2
3098	4	29	In two fabrics: 1) Three orange with grey core (25g) 2) One orange (4g)	Pit **3097**	2
3106	1	16	Orange	Pit **3103**	2
3120	1	53	Orange with grey core	Pit **3118**	2
3122	1	15	Orange.? Could be a pantile	Pit **3125**	2
3128	2	19	Yellow	Well **2412**	2
3134	8	186	In five fabrics: 1) One yellow (27g) 2) One orange (34g) 3) One yellow/orange mixed (23g) 4) Three orange with grey core (50g) 5) Two orange with grey core with frequent small white clay lumps (52g)	Pit **3133**	2
3146	2	137	Two yellow	Well **2554**	2
3172	1	85	Orange	Posthole **3171**	3
3179	1	7	Yellow/red mixed	Posthole **3178**	3
3188	2	24	In two fabrics: 1) One yellow/orange mixed (8g)	Posthole **3187**	3

Ctxt	No	Wt (g)	Comments	Feature	Per
			2) One orange with yellow clay lumps and grey core (16g)		
3196	2	73	Orange	Pit **3195**	3
3202	1	22	Orange with grey core	Pit **3199**	2
3214	5	239	In three fabrics: 1) One yellow (62g)? peg type 2) Two orange with grey core (109g) 3) Two orange with yellow clay lumps and grey core (68g)	Pit **3081**	2
3217	1	292	Orange. Has a large nib 45mmx28mmx20mm	Pit **3215**	2
3227	1	23	Orange with grey core	Pit **3226**	2
3232	7	441	In three fabrics: 1) One yellow (52g) 2) Three orange with grey core (247g) 3) Three orange (142g). One burnt.	Pit **3364**	3
3267	1	112	Yellow	Well **2554**	2
3269	2	127	Orange	Well **2554**	2
3272	9	365	In five fabrics: 1) One orange (85g) 2) Two yellow (107g) 3) Three orange sandy (135g) 4) Three hard orange with grey core (17g) 5) One red with yellow clay lumps and reduced grey core (21g)	Pit **3273**	4
3277	12	404	In four fabrics: 1) One yellow (67g) 2) Five orange (138g) 2 peg hole type. 3) One yellow/orange mixed (50g) 4) Five hard orange with grey core (149g)	Pit **3280**	2
3282	2	34	In two fabrics: 1) One orange (24g) 2) One orange with grey core (10g)	Layer	4
3346	20	1387	In four fabrics: 1) Sixteen yellow (1099g).? peg hole type 2) Two hard orange with grey core (28g) 3) One orange with yellow clay lump inclusions and a grey core (106g) 4) One soft orange with grey core (154g)	Pit **3351**	2
3348	7	330	In four fabrics: 1) One orange with grey core (122g) 2) Four yellow (127g) 3) One orange (35g) 4) One orange sandy with yellow clay lump inclusions (46g)	Pit **3351**	2
3349	3	116	In two fabrics: 1) One orange (47g) 2) Two orange with grey core (69g)	Pit **3351**	2
3353	34	1068	in four fabrics: 1) 26 yellow (902g).? peg type 2) Five orange (51g) 3) Two orange with grey core (76g) 4) One yellow with red clay lump inclusions (39g)	Pit **3354**	2
3365	2	87	Two yellow (87g)	Pit **3351**	2
3366	1	153	Yellow	Pit **3354**	2
3367	1	30	Yellow	Pit **3354**	2
3386	3	115	In two fabrics: 1) One orange with grey core (68g) 2) Two yellow (47g)	Well **3388**	2
3387	1	8	Hard red	Well **3388**	2
3454	57	1487	in four fabrics: 1) Forty-three orange (897g). 2? peg tile types 2) Nine orange with grey core (402g). 1 peg hole type 3) Three yellow (149g) 4) Two red with yellow clay lump inclusions (39g)	Pit **3451**	2
3456	1	120	Orange	Pit **3451**	2
3457	63	1633	In three fabrics: 1) Fifty orange (1416g). 3 x? type tiles 2) Eleven orange with grey core (155g).? peg tile type	Pit **3451**	2

Ctxt	No	Wt (g)	Comments	Feature	Per
			3) One yellow and orange mixed (40g) 4) One yellow/red with grey core (22g). Poorly made.		
3459	62	3423	In three fabrics: 1) Nine yellow (735g) 1 peg hole type (85mm from side) 2) Thirty-two orange (1124g) 3) Twenty-one orange with grey core (1564g). Width 158mm (6"). 1 peg hole type	Pit **3451**	2
3460	125	3797	In six fragments: 1) Five yellow (321g) 2) One yellow/orange clay mix (9g) 3) Sixty-four orange (1107g). Vast majority very small. 1 peg hole? type. 4) Forty-two orange with grey core (1832g) 5) Nine orange with yellow clay lump inclusions (260g) 6) Four orange with yellow clay lump inclusions and grey core (268g)	Pit **3451**	2
3461	54	1871	In five fabrics: 1) Three yellow (65g) 2) Twenty-six orange (866g) 3) Two red and yellow mixed with yellow clay lump inclusions (47g) 4) Twenty orange with reduced grey core (732g) 5) Three hard red with frequent small white clay inclusions (161g)	Pit **3451**	2
3463	45	1278	In six fabrics: 1) Three yellow (83g) 2) Twenty-five orange (724g). 1? type tile 3) Two poorly mixed yellow and red tile with grey core (97g) 4) Twelve orange with grey core (288g) 5) Two orange with yellow clay lump inclusions and a grey core (22g) 6) One yellow/orange clay mix (64g)	Pit **3451**	2
3464	4	148	In two fabrics: 1) Three hard orange (131g) 2) One orange with grey core (17g)	Pit **3451**	2
3465	34	940	In two fabrics: 1) Twenty-three orange (708g). One burnt. 2) Eleven orange with grey core (232g).	Pit **3451**	2
3467	14	316	In two fabrics: 1) Six orange (101g) 2) Eight orange with grey core (215g).? peg hole type.	Pit **3451**	2
3471	2810	161077	In four fabrics: 1) 2768 yellow (estimated 159064g). 260 were weighed =14941g average = 57.465 per fragment. 4×1 peg hole type 2) 35 light orange sandy (1831g) 3) Four hard orange sandy (113g) 4) Three hard orange red (69g)	Pit **3478**	2
3474	11	917	Yellow	Pit **3478**	2
3475	12	912	in three fabrics: 1) Ten yellow (634g). 1 peg hole type (76mm from side). 2) One hard orange with grey core (216g). Has nib 55mm + long x 32mm x 17mm high. 3) One hard orange with grey core (62g)	Pit **3478**	2
3476	10	1507	Yellow. Length 256mm (10") x width 161mm (6½"). 1 peg hole type (65mm from side)	Pit **3478**	2
3477	3	147	Yellow	Pit **3478**	2
3501	26	1005	Yellow. 1 peg hole type (64mm from side).	Pit **3499**	2
3502	20	925	In four fabrics: 1) One orange (79g) 2) One orange with grey core (73g) 3) Sixteen yellow (556g) 4) Two red with yellow clay lump inclusions and a grey core (217g)	Pit **3499**	2
3504	11	510	In two fabrics: 1) Eight yellow (366g) 2) Two orange (95g)? type tile 3) Yellow/red with grey core (47g). Poorly made	Pit **3503**	3
3506	1	8	Yellow	Pit **3503**	3
3507	66	3291	In six fabrics: 1) Twenty yellow (1161g). 1 peg hole type (58mm from side). Soot on two 2) Seven orange (149g)	Pit **3503**	3

Ctxt	No	Wt (g)	Comments	Feature	Per
			3) Fourteen orange to red (745g). 2 peg hole type 4) Twenty-two orange with grey core (980g) 5) One orange with yellow clay lumps (23g) 6) Two orange with yellow clay lumps and grey core (233g)		
3529	32	977	In four fabrics: 1) Twelve yellow (425g) 2 peg hole type 2) Three orange (43g) 3) Four yellow and orange mixed (122g) 4) Thirteen orange with grey core (387g)	Posthole **3528**	3
3530	1	12	Orange with grey core	Pit **3533**	2
3553	4	109	Four grey	Pit **3557**	2
3571	11	847	In three fabrics: 1) Four yellow (332g). 2 peg hole type 2) Five orange (247g) 3) Two orange with grey core	Pit **3574**	2
3572	2	64	Two yellow	Pit **3574**	2
3598	1	34	Orange with grey core	Pit **3597**	4
3607	1	35	Orange	Pit **3609**	4
3608	1	61	Yellow/orange mixed	Pit **3609**	4
3638	1	128	Orange with grey core	Well **3388**	2
Total	*4855*	*267801*			

Table B.5.8: *Catalogue of peg tile*

Ceramic ridge roof tile

B.5.52 Twenty-two ridge tile fragments (3.94kg) were found in 19 contexts (Table B.5.9). Nine ridge tile fragments were found in medieval features. They were in four different fabrics (orange sandy, orange sandy with grey core, yellow and pink to purple). Two of the tiles had been glazed. Most of the tiles were recovered as single examples in features with the exception being three recovered in a yellow fabric from pit **3478**. It is probably significant that from this same feature there was a notable quantity of yellow peg tile. Eleven ridge tiles were found in Period 3 features and layers. Four fragments came from cess pit **1424**, three are in a yellow and one orange oxidised fabric. One of the yellow tiles had been made as a peg tile then deliberately warped before firing to create a curve. Two tiles had been glazed including a fragment from a base of a finial which was found in the inn cellar **2061**. Two tiles were found in Period 4 features, both in an unglazed yellow fabric.

B.5.53 The 22 ridge tiles comprise less than 0.5% of the ceramic roof tile from the site. This percentage is similar to other excavations in Barnwell with Coldhams Lane having three ridge tiles out of 571 tiles (Atkins 2013b) and Brunswick a single fragment out of 735 (Atkins 2012a). Elsewhere in Cambridgeshire the percentages were similar with Wisbech having four out of 836 tiles (Atkins 2010) and Huntingdon Town Centre where there were two ridge tiles out of 485 sherds (Atkins and Fletcher 2009).

Ctxt	No	Wt (g)	Comments	Feature	Per
787	1	194	Ridge tile in orange sandy fabric	Layer	3
910	1	302	Yellow. Well-made.?post-medieval.	Pit **874**	4
1044	1	106	Yellow	Well **1051**	4
1429	1	264	Hard orange	Cess pit **1424**	3
1435	1	139	Orange sandy with grey core. Dark green brown glaze on exterior	Pit **1436**	2
1584	1	195	Orange with grey core	Pit or well **1577**	3
2024	1	275	Orange sandy. Base of finials survives on top of tile – uncertain what the decoration would be. Light green glaze.	Inn **2061**	3
2158	1	76	Orange. Yellow/green glaze on exterior	Pit **2157**	3
2345	3	205	In two fabrics: 1) One orange sandy (121g)	Cess pit **1424**	3

Ctxt	No	Wt (g)	Comments	Feature	Per
			2) Two yellow (84g)		
2348	1	470	Yellow. It was originally made as a peg tile (1-hole type). More than 235mm (9¼"+) long, c.140mm (5½") wide. It has been warped deliberately before firing to create a curve for a specific part of a roof (*i.e.* used as a ridge tile). Has been mortared both sides.	Cess pit **1424**	3
2677	1	55	Orange sandy	Pit **2682**	2
2988	1	117	Pink to purple fabric with occasional very small flint inclusions. Exterior it has a green slightly brown glaze	Pit **2986**	2
3274	1	66	Orange sandy. Distinct curve, but small size means identification as ridge tile not certain.	Pit **3280**	2
3353	1	31	Yellow/red	Pit **3354**	2
3471	1	162	Yellow	Pit **3478**	2
3474	2	335	Yellow	Pit **3478**	2
3477	1	73	Yellow ridge tile.	Pit **3478**	2
3507	1	84	Orange with grey core (84g). Curve suggests ridge tile.	Pit **3503**	3
3529	1	45	Orange with grey core	Posthole **3528**	3
Total	*22*	*3194*			

Table B.5.9: *Ridge tile*

Ceramic stove tile

B.5.54 Part of a possible stove tile (18g) was found in Period 3 layer 3024. It was part of a decorative moulding in a late medieval fabric, comprising pinkish red sandy with a bright green glaze on top. Stove tiles are uncommon, with few examples found in Cambridgeshire. A possible stove tile was found at Coldhams Lane in a Period 4.1 pit (645; Atkins 2013b) and an example came from Wisbech Castle (Atkins 2010).

Pantile

B.5.55 Thirty-one pantile fragments (3.291kg) were found in 16 contexts (Table B.5.10). Pantiles from the site were all well-made and are likely to date to the late 18th to 19th centuries. The vast majority were recorded from Period 4 features and a floor. One definitely residual example was found in a Period 2 feature.

Ctxt	No	Wt (g)	Comments	Feature	Per
113	1	253	Pantile. Yellow/red clay mixed. Mid 18th to 19th century	Pit or well **114**	2
537	2	58	Orange. Late 18th-19th century	Drain **538**	4
1994	1	124	Orange	Pit **1995**	4
2216	1	137	Yellow with nib	Pit **2215**	4
2398	2	241	In two fabrics: 1) One hard orange (64g). Has nib. 2) Yellow (177g)	Pit **2393**	4
2473	2	548	Orange. One with large nib	Cellar **2474**	3
2657	1	23	Orange	Pit **2747**	4
2752	1	110	Orange	Pit **2751**	4
2766	1	84	Orange	Pit **2765**	4
2790	1	67	Orange. Has nib.	Layer	4
2808	1	74	Orange	Post pad **2808**	4
2814	2	194	Orange	Floor	4
2835	11	365	Orange	Wall 2870	4
3029	2	843	Orange. 240mm (9½") wide	Post hole **3030**	3
3596	1	116	Orange	Pit **3589**	4
3621	1	54	Orange	Pit **3597**	4
Total	*31*	*3291*			

Table B.5.10: *Pantile*

Drain

B.5.56 Eight drain fragments (2.923kg) were found in seven contexts (Table B.5.11). Most of the drain fragments were discarded in the excavation, although a tiny fragment of water and sewage pipe was kept. Half of the fragments (three in Period 2 and one of the Period 3) were definitely residual.

Ctxt	No	Wt	Comments	Feature	Per
113	1	1752	Yellow. 20mm (1") thick. Large. Horseshoe shape. Well made. 19th century	Pit or well **114**	2
997	2	520	Salt glaze. Late 19th-20th century	Layer	3
2019	1	110	Yellow. Late 18th-19th century	Ditch **2020**	3
2101	1	309	Salt glaze. Late 19th-20th century	Drain **2102**	4
2888	1	51	Salt glaze. Late 19th-20th century	Layer	4
3399	1	108	Salt glaze. Late 19th-20th century	Pit **3397**	2
3502	1	74	Salt glaze. Late 19th-20th century	Pit **3499**	2
Total	*8*	*2923*			

Table B.5.11: *Drain*

Fired Clay

B.5.57 The excavations produced 121 fragments (22.39kg) of fired clay and daub (Table B.5.12). The vast majority of the fired clay/daub came from medieval features with 83 fragments (21.395kg) found in 30 contexts. Two features seem to have remains of former superstructures. Oven/kiln **2604** had 13 large fired clay fragments (10.978kg). Many of these had withy impressions, smoothed sides and vegetative impressions. From oven/hearth **2452** there was similar material but on a far smaller scale (16 fragments, 0.447kg).

B.5.58 Pit **3081** had large fragments from former hearth/oven(s) (8 fragments, 6.546kg). Two other features (pit **3478** and well **784**) had far fewer fragments, but these were small parts of hearth/ovens which may have been formerly located close to them. Both features each had seven moderately large fragments (respectively 1.086kg and 1.235kg). Several very small fragments of hearths/ovens and possibly daub were found in many other Period 2 features but in very low quantities.

B.5.59 In post-medieval contexts there were far fewer fired clay/daub fragments, with just 37 small pieces weighing 0.977kg from eight features and layers. It is likely that most or even all of these were residual medieval deposits. A single very small fragment (18g) of fired clay was recovered from a Period 4 layer.

Ctxt	Tr	No.	Wt (g)	Comments	Feature	Per
39	1	1	184	Light Brown. Brick or fired clay/daub	Posthole **38**	3
79		1	30	Cream to white clay sand with frequent vegetative impressions	Floor	3
88	5	1	6		Pit **80**	2
102	5	1	100	Light brown daub	Pit **99**	2
117	4	2	25	undiagnostic	Pit **118**	2
123	4	3	14	Orange sandy	Pit **124**	3
620		2	25	Cream to white clay sand. One smoothed side. Heavily burnt dark grey to black.	Floor	3
704		1	18	Cream to white clay sand	Layer	4
778		2	651	Cream to white clay sand with abundant vegetative impressions. Both have a smoothed side. One burnt slightly pink on interior side.	Well **784**	2
779		2	354	Cream to white clay sand with vegetative impressions	Well **784**	2
916		1	39	Cream to white clay sand	Layer	3
1245		2	147	Cream to white clay sand with vegetative impressions. One has a smoothed side. Has a withy impression. One fragment slightly burnt	Well **784**	2
1246		1	83	Cream clay sand with small white chalky clay inclusions. Burnt dark grey to	Well **784**	2

Ctxt	Tr	No.	Wt (g)	Comments	Feature	Per
				pink on interior.		
1418		8	623	Cream clay sand with small white chalky clay inclusions. Seven have a single smoothed side. Five have signs of burning – dark grey to pink on interior.	Floor	3
1512		20	52	Cream on edge. Mostly dark grey to black	Floor	3
1628		1	69	Cream to white clay sand with frequent vegetative impressions. One smoothed side	Pit **1621**	2
1629		2	18	Cream to white clay sand with some vegetative impressions and very occasional flint	Pit **1621**	2
1631		2	10	Cream to white clay sand	Pit **1630**	2
1796		1	11	Cream to white clay sand	Pit **1794**	2
1899		1	10	Cream to white clay sand. One smoothed side. Slightly burnt dark grey on one side.	Posthole **1898**	3
1937		1	29	Cream to white clay sand with frequent vegetative impressions	Well **1939**	2
1970		1	14	Pink to purple ?burnt fired clay.	Pit **1969**	2
1971		1	89	Cream to white clay sand with frequent vegetative impressions. Partly burnt grey/black on interior side	Pit **1969**	2
2067		1	20	Cream to white clay sand. Has a smoothed side	Pit **1969**	2
2098		1	2	Cream to white clay sand	Pit **2096**	2
2323		14	364	Cream to slightly pink clay sand with some vegetative impressions and very occasional flint. Three have one smoothed side surviving.	Oven/hearth **2452**	2
2330		2	83	Cream to slightly pink clay sand with some vegetative impressions. Smoothed side	Oven/hearth **2452**	2
2518		3	224	Cream to white clay sand with frequent vegetative impressions and very occasional flint. All with one smoothed sides. One withy on one.	Pit **2515**	2
2605		13	10978	A) Cream to white clay sand with frequent vegetative impressions. One large fragment (1556g). 50mm thick. One smoothed side. All three withies were parallel and between 40mm to 45mm in diameter. Large superstructure. B) Same fabric. Ten fragments (8394g). All have one smoothed side- one slight curve. Thickness varies from 15mm to 40mm. One has two withies (30mm in diameter), four others have single withies at 28mm, 30mm, c.35mm and c.50mm diameter. One slightly burnt. C) Two fragments in cream to white clay sand with frequent vegetative impressions and very occasional flint up to 28mm (1028g). Both have one smoothed side. One withy 43mm diameter. One burnt dark grey.	Oven/kiln **2604**	2
2867		1	10	Cream to white clay sand. Partly burnt grey/black on interior side.	Well **2554**	2
3010		1	340	Cream to white clay sand with frequent vegetative impressions and very occasional flint. Has smoothed side and two withies (20mm and 40mm).	Pit **99**	2
3083		5	6508	Five fragments varying from 560g to 2072g. Cream to white clay sand with frequent vegetative impressions and very occasional flint inclusions. Single smoothed sides. Thickness c.26mm. Sometimes single or up to two withies on a fragment. Withies measurements were: one ??, c.30mm x 3, 38mm, 40mm, 46mm and c.70mm.	Pit **3081**	2
3128		4	20	Cream to white clay sand but burnt orange to dark grey	Well **2412**	2
3138		5	83	Cream to white clay sand with frequent vegetative impressions. Two with single smoothed sides. Some burning on four causing them to go dark grey to back.	Pit **3137**	2
3217		1	2	Cream on one side. Burnt mostly dark grey to black	Pit **3215**	2
3227		1	10	Cream to orange clay sand	Pit **3226**	2
3472		7	1086	Seven fragments in a cream to white clay sand with frequent vegetative impressions and very occasional flint inclusions (1086g). Frequent very small holes. Four have a single smoothed side. All are 40mm to 50mm thick.	Pit **3478**	2
3501		1	21	Cream to white clay sand. With a smoothed side.	Pit **3499**	2
3611		3	38	Cream to white clay sand with frequent vegetative impressions. Two with a smoothed side. One partly burnt to dark grey	Pit **3481**	2
Total		*121*	*22390*			

Table B.5.12: *Fired clay/daub*

B.6 Architectural Fragments

By Mark Samuels

Introduction

B.6.1 The excavation covers a strip of properties running southwards from the frontage of Newmarket Road. Only the rear parts of these properties survived the 20th-century road widening. Barnwell Priory stood on the north side of the road. The parish church of St Andrew-the-Less survives nearly opposite the excavation footprint. This church originated as the lay cemetery and parochial church of the priory. Documentation in the case of the church survives much better than the priory itself.

B.6.2 The architectural fragments do not derive from the buildings excavated on the site. Almost all derived from the priory. We know this formed a convenient quarry for colleges much further afield after 1538 (RCHME 1988, 299). Unlike elsewhere in Cambridge, we can be reasonably sure where the stones came from but problems of interpretation remain. An understanding of how stone was likely to be re-used is most important (Stocker 1993, 21).

B.6.3 Old building stone was a highly prized commodity, usually ruthlessly harvested. Certain superstitions also affected re-use, for example, householders in Glastonbury refrained from using monastic stone for building dwelling places until the 18th century (Stukeley 1776, 152). Paradoxically, it is those fragments least suitable for re-use that are most likely to survive, because they incorporate the sort of fussy undercutting that caused the demolition workers on site to reject them. In this assemblage there is nothing of that nature.

Circumstances of Survival

B.6.4 Of the architectural fragments 358 out of a total of 589 are derived from only five contexts. A cess pit wall 1432 was built from 194 architectural fragments while 89 derived from a foundation 974. The inference is that an important house was built fronting Newmarket Road shortly after the Dissolution and was provided with a correspondingly fine cess pit. No superstructure was apparently recognised during site reduction, nor has documentary evidence for this yet been recognised (R. Atkins, pers. comm.).

B.6.5 A total of 37 architectural fragments derived from a floor 827 and 31 from pit fill 2724. In no instance was an architectural fragment found *in situ*. With the exception of foundation 974, no context contained non- (or post-) monastic architectural fragments. The scarcity of any architectural fragments that are later than *c.*1350 hinders any attempt to be more specific and highlights the chief criticism of dating which relies on published examples of mouldings.

B.6.6 Seven contexts contained discrete groups of architectural fragments that significantly predated the Dissolution but this is not evidence that monastic stone was re-used for lay purposes when the priory was in existence. However, architectural fragments could be and were re-used within the precinct of the priory. This is proven by the 'turning' of dressings (see below).

Recoding and Analysis

B.6.7 The term 'building campaign' is familiar in the study of old buildings. Here it used as a 'computer-friendly' label quite distinct from the non-specific language of architectural history. Classifying typestones is analogous to 'site phasing'. Directly relating to the 'site phasing structure' is not possible with this site (building campaigns and stratigraphic

phases should however be equated where possible). The building campaigns refer almost entirely to the priory to the north of Newmarket Road and not to post-medieval structures within the site 'footprint'.

B.6.8 It must be appreciated that a 'building campaign' may bear *no* relationship to any defined site phase. Such a situation would only be possible where there are *in-situ* structures and deposits contemporary with the architectural fragments (demolition rubble or later structures built directly from architectural fragments originating in the site footprint are situations where a shared phasing structure is possible).

B.6.9 Where building campaigns are identified, these can be compared to the periods and structures presciently defined by Clark (1893, *passim*) from the Cartulary.

B.6.10 An ideal finalised typestone hierarchy (where relation to phase is carried out) is described here. In this instance there is however no reference to 'Phase'.

P1.BI:TSG(a)<103> = Strat. 'Phase 1 1190–1250'

BI:TSG (a)<103> = Earliest building campaign within Phase

TSG(a)<87> = Earliest Typestone Group within a building campaign

<87> = *ad-hoc* typestone number

Note on individual *worked stone numbers* (WSN): the original number allocated by site or finds staff is here used by me (but see below). It is however often necessary to introduce an entirely new numbering system. There are various reasons for this. The WSN might be lost - or 'multiple bagging' or 'context-based finds numbering' has been carried out; both of which cause problems. The all-important thing is that each stone has its own unchanging number for reference. At CAMEAG14, some stones had either lost labelling, or were never given a WSN number in the first place. Such architectural fragments have been given new WSN numbers starting at <1000>. For convenience turned dressings (re-cut) have been given a separate number for the re-cut.

B.6.11 The whole process of reconstruction is akin to 'reverse engineering' but any determination (such as the radius of an arch) has to be averaged out from several measurements, to allow for degrees of error.

B.6.12 The simplified presentation here (Table B.6.1) is 'stand-alone' (*i.e. not* related to site phase). The 'Early Date' refers to the earliest known published use of such a moulding *in situ.* Some plain typestones are dated only by confirmed association with a typestone with a datable moulding; usually by building stone/tooling marks. Tooling marks should only be a dating method of last resort (Samuel 2001, 153–4).

Architectural fragments (AF)	Context	BS	TSG	BC	Early date
399	598	Sandstone	a	I	1112
85	491	LL	b	I	1140
384	464	Barnack	a	II	1180
388	464	Barnack	a	II	1180
463	2724	Barnack	a	II	1180
495	2724	Barnack	a	II	1180
518	2736	Barnack	a	II	1180
474	2724	LL	b	II	1180
470/1008	2724	Barnack	d	II	1190
206	+	Barnack	e	II	1200
446	+	Barnack	e	II	1200
491	2724	Barnack	e	II	1200
512	2736	Barnack	f	II	1200

Architectural fragments (AF)	Context	BS	TSG	BC	Early date
112	1432	Burwell	g	II	1200
75	1432	Burwell	h	II	1200
512	2736	Barnack	i	II	1200
1007 /383	2724	Barnack	j	II	1200
188	1432	Barnack	a	III	1225
415	+	Burwell	b	III	1225
144	1432	Barnack	c	III	1230
63	1432	Burwell	a	IV	1250
137	1432	Burwell	a	IV	1250
199	1432	Burwell	a	IV	1250
1001	1432	Burwell	a	IV	1250
1002	1432	Burwell	a	IV	1250
1004	1432	Burwell	a	IV	1250
116	1432	Burwell	b	IV	1250
1006	1432	Burwell	b	IV	1250
94	1432	LL	c	IV	1250
1008/470	2724	Barnack	d	IV	1250
1005	1432	LL	a	V	1270
494	2724	Burwell	b	V	1290
539	+	Burwell	c	V	1290
387	464	Burwell	d	V	1290
450	464	Barnack	e	V	1300
483/1007	2724	Barnack	a	VI	1340
425	+	LL	b	VI	1350
209	+	Ketton	a	VII	1700
234	974	Ketton	b	VII	1700
242	974	Ketton	b	VII	1700
251	974	Ketton	c	VI	1700

Table B.6.1: *Building campaigns I–VII with associated features*

B.6.13 Technical similarities can do more than state that 'somewhere in the priory, building occurred within the following date-bracket'. At best, they point to the employment of a specific lodge, using the methods and materials of that lodge. It should not be forgotten that the building campaigns are sometimes no more than 'dumps' for broadly contemporary typestones (as judged on the basis of art-historical evidence). As such, they illustrate building activity during wide and arbitrary date brackets. The implicit connections are weakest in this case, but rather stronger where technical similarities are also manifest. The defined 'archaeological' building campaigns and their relationship to the relatively fulsome documentation are tentatively correlated below. 'Building campaigns' may seem to correspond to the documentary evidence, but this does not confirm them; they illustrate rather than prove. In legal language, they are 'circumstantial evidence'.

B.6.14 It may be assumed that all architectural fragments mentioned here owe their survival to having been re-used in other structures. It has only been thought necessary to mention those instances where some other agency preserved them.

B.6.15 For the most part, 're-use' mortar was fortunately soft, but no cleaning was carried out after excavation.

Building Campaign I

B.6.16 There are no dressings that certainly date before 1180, and there is a complete absence of specifically 'Norman' (Romanesque) detail such as cushion capitals or surface patterning such as *diaperwork* (significantly no chevron fragments were recognised). Several dressings *could* date before 1180, but this is a measure of the difficulty of accurately dating tooling marks in the absence of art-historical patterns.

B.6.17 These absences may say more about the 'modishness' of the buildings' ornamentation than their exact date (see below). Taking all this into consideration however, only two fragments (of totally different character) can be doubtfully placed before *c*.1180.

Sandstone Coffin

B.6.18 This 'trough-like' fragment (AF399, see Table B.6.1; Fig. B.6.1–2) derives from a rectilinear stone coffin (or sarcophagus). It formed part of the wall of a post-medieval brick cellar. The fragment formed one end of a monolith; hollowed out and shaped using no tool other than the *Ascia*, an axe-like hafted tool. This was wielded from various directions to produce distinctive parallel marks. The grey rock is hard, dense, homogenous and fine-grained, without apparent bedding and as such, it is unique to this assemblage. Barnack rag was widely used for medieval coffins, perhaps due to its permeability, but the use of an impermeable sandstone is less usual.

B.6.19 The original length and height of this piece is unknowable. It lacks typical 'medieval features' which can be summarised as: (a) coffins dating from about 1100 to 1400 typically taper, being widest at the head. (b) a head-shaped surround prevents the head of the corpse from lolling to one side. Although roughly executed, it was certainly rectilinear and significantly narrower and lighter than a typical 13th-century sarcophagus. It can be compared to the coffin of *Godfrey the Trumpeter* (Bowsher *et al.* 2007, fig. 143). Going by the width alone, the Cambridge coffin may have been intended to contain a child burial.

B.6.20 This coffin may have been encountered when the road was widened in the 19th century; but other sources within the priory cannot be ruled out. The coffin is either an unusual late medieval type or of ?Saxon or ?Roman date, being re-used for burial after the foundation of the Priory in 1112.

Angle Roll or Bowtell

B.6.21 This fragmentary moulding (AF85, see Table B.6.1; Fig. B.6.3) seems to have formed part of the jamb of an elaborate opening; either a large window or a portal; but such a moulding would more normally have been employed in arches (Morris 1992, 8). It was disturbed from its architectural setting well before final deposition. Abrasion and weathering subsequently occurred.

Building Campaign II (1180–1225)

B.6.22 In order to define this group, it was necessary to place considerable reliance on a common building stone. Although no formal identification of the Harvest Way assemblage has been carried out by a trained geologist, Simon Timberlake has identified architectural fragments of Barnack stone of the same period found at the Easterngate Hotel. This 'spar-prominent' oolitic limestone has characteristics typical of Barnack stone as described by Hudson and Sutherland (1990, 22–3 and fig. 6). A fragmentary moulding <470> clearly displays the poorly sorted coarse, highly fossiliferous stone (Figure B.6.4). The faint bedding characteristic of Barnack stone was apparent.

B.6.23 The toolkit, as revealed by the marks, is likewise distinctive – it is characteristically late Romanesque; being dominated by the use of a hafted adze-like tool and by a wide chisel (*boaster*) for finishing. The recent controlled dismantling of piers at another contemporary Augustinian house allowed detailed study of the masonry craft (Samuel 2011, 142). The adze was used for the joints and the boaster to create a vertical 'reeded' (also called 'batted') finish on the external faces of column drums and ashlars. Mouldings were similarly finished but with sharp ?chisels on edge; occasionally a polish being created with an abrasive. It is clear, from the study of assemblages of similar date, that while no dramatic changes in the toolkit occurred, the tools were controlled with much greater *finesse* (Samuel 2001, 153-4).

B.6.24 Three typestone groups have been recognised. Almost all derived from three contexts. A pit fill 2724 contained no less than 25 fragments, all discarded. These show much in common.

B.6.25 Patterns typical of the 'Transitional' period were present: *keels, angle rolls, quirks* and *simple chamfers*. Lancet openings were almost certainly employed (see below). The 'keel' can be dated to 'not earlier than *c*.1180', but the fortunate survival of one base moulding allows close dating of the most important of the structures represented.

Large and Small Lancet Windows

Stylistic Features

B.6.26 The window fragments (AF384, 388, 463, 495, 518; Table B.6.1) are characterised by the *external rebate* – a completely functional type that appears in the last quarter of the 12th century and which remained widespread for many years. An unvarying moulding was employed, which hints at 'mass-production' at the quarry. The outer margin of the window dressings therefore formed a regular line parallel to the light (opening). This contrasts with the more familiar long-and-short work of later medieval windows.

B.6.27 A simple square reveal within the rebate gave way to an internal splay, typically at about 45 degrees to the line of the wall. The inner sill likewise sloped sharply to the same end – to allow sunlight the widest possible ingress. Delicate irregularities were deliberately introduced into this moulding. These made the dressings stand slightly proud of the wall surface. This would have been made up flush when the wall-faces were rendered (*harled*).

B.6.28 The label <384>, (Fig. B.6.5) alongside one other moulding, plays an important role in refining the date of this building campaign. The *quirk* and the *keel* place these lancets firmly in the last quarter of the 12th century.

Technical Features

B.6.29 An arch voussoir <388> (Fig. B.6.5) and an internal *scoinson* <495> share a 45° embrasure splay. A sill <463> and jamb <518> share a different splay. This illustrates that two lancets were represented. No apex element survived to suggest that these were lancet openings. The lancet is also known as the *acute* arch; where an equilateral angle fits exactly within the width and height of the arch. On this assumption, the single extant voussoir <388> formed a light fifteen inches (0.381m) wide.

B.6.30 The width (0.2121m) of the smaller window light can be determined from the half-sill <463> (split on the window mid-point). The behaviour of the lancet arch is here predicted wholly from that value. Corroborating evidence for this conjecture comes in the form of a label voussoir <384>. The soffit geometry corresponds precisely to the outer border of the putative voussoir. On the basis of comparative evidence, one can

assume that the label met a continuous string course running between arrayed lancets (Fig. B.6.6).

B.6.31 Hinged shutters were absent and more laborious methods were used to secure timber shutters ('glazed' with parchment or horn?) within the rebate on both window types (these are to be regarded as composite reconstructions).

B.6.32 In the larger of the windows, horizontal slots allowed short lengths of timber to be wedged in position against the board from the outside, holding it firmly in place. In the smaller window the shutter was simply pegged in place by tapering timber dowels, hammered in at an angle against the edge of the frame at regular intervals. This is the more common arrangement, and is present on many excavated architectural fragments from London (author's observation).

B.6.33 The wall thickness and the height of the openings are conjectural (the height of the restored elevations is guesswork). The embrasure of the smaller window was proportionately narrower (see above), hinting at a thinner wall.

Chamfered Reveal possibly associated with Lancets

B.6.34 This complete chamfered ashlar (AF474, Table B.6.1) was disposed of in the same pit as the lancet elements. An internal setting close to the lancet windows is probable.

B.6.35 The ashlar dressed a right-angled quoin. It met another ashlar on the same course at ninety degrees. Such a quoin may have served a number of roles. This may have formed part of a door embrasure at the point of meeting with the internal wall face. The course height (18.2cm) is regular but does not correspond to any historic units of measurement.

Clustered ?Pier

B.6.36 This moulding (AF470, Table B.6.1.) has been re-cut to form a weathering <1008>. The ashlar face was heavily weathered, but the original finish of vertical 'reeding' on the shafts survived well. The course height was 18.3cm; a value used for the contemporary quoin <474>. This illustrates a favoured course height used during this building campaign.

B.6.37 The clustering of shafts was likely to be employed on a variety of structures, such as a clustered pier. Another recent excavation (Newman 2013) produced architectural fragments that included a fine respond capital <5>, which rested on clustered shafts. The similarity in style is worthy of mention, although the scale was larger (Samuel, 2017).

Columnar ?Church Arcading

B.6.38 Unlike the other architectural features, these three typestones (AF206, 466, 491; see Table B.6.1) are not associated by re-use in a common context. Two complete drum segments <491> (Fig B.6.7) and <206> were found. The former was found in the pit **2722** that produced so many other fragments, but had lain loose in the open for years before ultimate deposition. In contrast the latter segment was well-preserved, probably due to direct re-use. Both retained traces of the original sandy bedding mortar. Allowing for the bed, the course height was probably six inches (15.2cm) and seven inches (17.8cm) respectively.

B.6.39 The most important part, a base moulding (<446>) (Fig. B.6.7) showed a chequered history: it was almost completely encased in re-use mortar when found during machining. It may have been initially re-used as part of a well and was probably 're-re-

used' in the foundations of the recently demolished factory. Despite all this, important details survived.

B.6.40 Enough survived to show that this formed the base moulding of a semi-circular wall respond, more probably marking the end of the arcade than an aisle vaulting respond. The radius of the *torus* could be measured (0.5468m). The upper bed and seating were damaged, but a column diameter (*c*.0.9038m) could be arrived at by subtracting the base moulding. The base probably rested on a chamfered sub-plinth, following normal practice.

B.6.41 The drum segments (analogous to the slices of a cake) were used to build (or face) the round piers (most of each columnar pier was weak rubble and mortar). Such piers were likely to have been employed in the body of the church. Given the importance of these fragments, some special efforts were required to determine the correct scale of these columns. It was not obvious if a single column — or three of different diameter — were represented. A demonstration one way or the other was needed.

B.6.42 Two categories, 'segmental' and 'converging' joints needed to be taken into consideration (Table B.6.2).

AF	Rad. (segmental)	Rad. (converging)
206	0.936	0.826
491	0.974	0.811
446	0.902 (rest.)	0.982 (rest.)
Av. diam=	**Sgmtl= 0.938**	**Converg.= 0.874**

Table B.6.2: *Columnar arcade – diameter reconstruction (metres)*

B.6.43 The aggregate of readings average out close to the *Statute Yard* (0.9142m). The English foot was certainly widely established by the 12th century and may even have existed before the Conquest (Fernie 1985, 252). However, this does not necessarily mean that the column was a yard wide, as explained below.

B.6.44 The segments are the more reliable readings because their cutting directly followed an incised circle on the bed as shown by similar piers from Holywell Priory (Bull *et al.* 2011, fig. 39). A boaster, vertically aligned, allowed the curvature to be exactly followed. The joints were probably roughly cut by eye using a hafted blade about two inches (5cm) wide. Each course was roughly fitted together in advance, and once the best fit was determined, only then was the circle inscribed on the upper bed. After that, the curved faces were carefully cut using a boaster chisel so as to create a 'reeded' finish. Consequently, the segment values vary less than the values obtained from the convergence of joints (Table B.6.2). The average reading of 0.938m may be taken as the more accurate illustration of the column's diameter.

B.6.45 A column diameter of *c*.0.96m is repeatedly encountered in Augustinian churches of the late 12th century; both in extant churches and excavated examples. It is encountered in the extant presbytery of the Priory of St Bartholomew's, Smithfield (0.964m: author's observation). Archaeological instances include the nave of the Convent of Holywell Priory (*c*.0.97m: Bull *et al.* 2011, 114), and the destroyed ?church of St Mary Spital (*c*.0.96m: Samuel 1997, 186).

String Course

B.6.46 A simple drip-moulded string course (AF112, Table B.6.1; Fig. B.6.5) probably forming an internal ornament (paint survives on the hollow) was a simplified version (lacking lower roll) of a widespread and persistent type.

Ogee-keel Wall Rib

B.6.47 This fine internal wall rib (AF75, Table B.6.1) was broken into two prior to common re-use after the Dissolution, but it was possible to re-unit the two fragments for recording.

B.6.48 The rib was characterised by the use of the ogee keel (Fig. B.6.5). A central triple-roll-in-echelon was separated by flanking hollows from larger rolls. The putative arch had a radius of *c.*1.88m, but its original employment is unknown.

B.6.49 The moulding was brought to a high finish. Unusually this rib retained traces of polychromy. After setting, it was finely whitewashed with the *arris* picked out in maroon ('bull's blood'). Later, successive coats of coarse whitewash were applied indiscriminately overall.

B.6.50 The ogee keel typifies '*Early English* arches and ribs' *c.*1200–1250 (Morris 1992, 8). The inclusion of this architectural fragment as part of this building campaign is questionable and the shared re-use context hints at association with the massive lancet windows (BC IV, a).

Multi-order Window Label

B.6.51 This moulding (AF512, Table B.6.1; not illustrated) underwent abrasion and damage after demolition. The moulding can only be conjecturally restored, but probably consisted of a keel flanked by beaks. *In-situ* weathering illustrates its role in an external arch. The arch radius was *c.*0.88m (a yard?). The relatively small size of this arch illustrates a window label, but no example of a compatible window archlet survived.

B.6.52 The moulding (conjecturally restored) was of a widespread Early English type; being employed in, for example, arches at Leverington Church in the same county (Fletcher 1943, 454g). Beaks were similarly employed in the arcade arches of Westminster Abbey as late as the 1260s (1260–69: RCHME 1924, 95).

Capitals in echelon (clustered pier?)

B.6.53 The element (AF1007/383, Table B.6.1) is recognisable as the 'primary state' of a dressing later adapted for re-use (Fig. B.6.8). Surfaces are all weathered and abraded but its original purpose is clear. The incomplete outline of one 'bell capital' is apparent with parts of two other capitals apparent to either side.

B.6.54 The capital was supported on at least three clustered shafts about six inches wide, arranged in circular formation to form a clustered pier or respond. This feature was removed during the existence of the priory. This occurred during, or soon after, the mid-14th century (see <383>).

Building Campaign III (1225–1250)

B.6.55 The distinction between this and earlier and later campaigns is an interpretative convenience. This 'campaign' is a 'dump' for a handful of mouldings with characteristics that are most conveniently placed as 'second quarter of the 13th century'. Most were cut from Burwell stone, a designation commonly given to 'white stones' or 'clunch' quarried at Cherry Hinton, Reach, Burwell and Isleham (Purcell 1967, 24–8). They could be carved very finely but, due to their absorbency, were highly vulnerable to weathering and frost. It is mostly known from College building accounts, but was evidently in wide-scale use nearly two hundred years before the earliest mention in 1415.

Weathered string course

B.6.56 This string course (AF188, Table B.6.1) was severely weathered before re-use. Some adhering mortar from its primary usage survives. The string seems to have acted as a

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corbel table such as one might find at the base of a parapet (Fig. B.6.9). The reverse is neatly cut but not parallel to the moulding run. This may be to adapt it for re-use.

B.6.57 The pattern was widespread and long-lived; being used in the nave aisle at Bridlington (*c.*1250) and the choir at Whitby (Sharpe 1846, *string-courses*). A cloister abacus at Selbourne Priory can be dated to not long after 1233 (Baker 2014, figs 6.15–16).

Arcade arch

B.6.58 Despite post-excavation damage, this moulding (AF415, Table B.6.1) was fresh and unweathered when found. It represents the apex of an arch; only slightly pointed and with, at the soffit, a simple chamfered profile. In principle, it is possible to reconstruct the geometry of the entire arch, but only an approximation can be expected in the circumstance.

B.6.59 The arcade moulding was asymmetrical, with (it seems) a secondary order on one side only. The arch was certainly a *drop arch*. The arch was *c.*4.5m wide (fifteen feet?) and rose 3.09m (ten feet?) from the springing line to the apex. An intentional 2:3 relationship (15:10 feet) is illustrated (Figs B.6.9 and B.6.10).

Large window

B.6.60 This intact window jamb stone (AF144, Table B.6.1; Fig B.6.9) shows an internal splay (Fig. B.6.11), with traces of a ?plaster coating and with weathering damage on the external rebate/chamfer. This certainly occurred when the stone was *in situ*. There is a rough glazing groove cut into the reveal.

B.6.61 The window was technically similar to the small lancets, but the dressing was keyed into the wall core. This is the more familiar and later practice. The embrasure splay was probably ashlared, but the outer wall was rubble-faced (judging by the differing treatment of the joints). The window took glass directly; a groove in the reveal taking the lead *cames.* Whether this was original is unclear (see below).

B.6.62 The moulding is closely paralleled at Rievaulx in the choir and north transept (*c.*1230), where it was employed in the clerestory. However, the relation of the moulding is there ‘reversed’; the splay being external. The East window (*c.*1240) at the Cistercian house of Netley (Hampshire) had the same external profile as at Barnwell (Sharpe 1846, *East, West & Transept*) but was apparently glazed from the outset. Tintern Abbey shows the same persistence of the external rebate (*ibid*) against the glazing groove. Doubtless the technique had its adherents.

Building Campaign IV (1250–1270)

Structure characterised by Massive Arrayed Lancet Windows

B.6.63 Thirty-two fragments were recognised as deriving from the same building. These had all been re-used in a post-medieval cesspit wall (1432). About twelve of the dressings were substantially complete, but some degree of re-cutting had been carried out on many of the others. These items were assigned <1000+> numbers (AF63, 137, 199, 1001, 1002, 1004; see Table B.6.1). Many of the stones were partially obscured by re-use mortar at the time of recording.

B.6.64 Several dressings were not relatable by moulding (though broadly compatible in style). They showed chisel usage and paintwork and (with one exception) the exclusive use of Burwell stone.

B.6.65 The mouldings were (as recovered) in good condition. Some variation in the quarry stone can however be detected. The reconstruction provides a ‘general fit’ that does no

violence to the evidence (Fig. B.6.12). The mason's design was transferred to the bank with a high degree of precision (see below).

B.6.66 The tools used were sharp and wide chisels, and boasters were used for the beds (Fig. B.6.13). Curved chisel blades were used for raking out hollows *etc*. (no comb was used). The external wall finish was vertically reeded. The mouldings were cut the same way but the reeding was usually polished off.

B.6.67 Almost everything that could be learnt about the structure derived from three selected typestones – a standard voussoir, an apex piece and a jamb stone. Some mention is made of other survivals where these add further light. Unfortunately, no element from the sill was recognised.

B.6.68 The moulding was technically similar to the other windows of earlier date, being of lancet form with an external rebate only distinguished by mild weathering (Fig. B.6.14) and the absence of paint. The interior showed multiple coats of whitewash, no other colour ever being employed. In one instance, the interior of the window seems to have been covered by a thin screed of plaster <1004>.

B.6.69 The voussoirs were of constant outline (a constructional demand), but the jamb stones were of varying sizes, to aid structural stability. Occasionally, the jamb moulding was pieced together from two elements, split at one of the deep hollow chamfers. Their radial dimension fell just short of a foot (29.7cm) but the wall-depth measurement (always exactly 36cm) does not correspond to any number of inches.

B.6.70 The regular *extrados* (outer margin) indicates a radiused weather label, but no example of this survives. The internal margin of the arch is rather irregular and was probably embedded in the fabric of the rere-arch.

B.6.71 Part of the moulding was symmetrical. Both aspects carried *three-quarter-hollow-and-fillets* as well as rolls set in semi-circular hollows (Fig. B.6.12) but the external hollow was reduced to permit inclusion of the shutter rebate. The light reveal was set just 'outboard' of the central axis of the moulding; a bead and hollow at that point reflects the larger rolls (see above).

B.6.72 The form of the embrasure is unknown, but the presence of an external ?buttress can be detected by differential weathering and tooling on one jambstone (Fig B.6.14). The difference between the diagonal tooling (intended for concealment) and the reeding is marked by a scribe line. Differentials in weathering show that the buttress was placed closer to the window than was planned.

B.6.73 The window was not directly glazed. Instead, the external shutters were held in place by timber draw bolts. The mortice of one survived on the voussoir <137>. These draw bolts were probably integral to the shutters, and could only be slid into place from the interior after the shutter was externally positioned (Fig. B.6.12).

B.6.74 The timber shutters were later replaced by iron *saddlebars* <1002> at horizontal intervals of about one foot to which lead cames were externally attached. The quirk between the roll and reveal was re-employed as a groove for the lead cames. This 'update' was not carried out in all cases, hinting at the presence of at least two windows (see below). The chisel marks left by the demolishers of the window were clearly visible, showing that the cames were removed from the exterior of the building.

B.6.75 The 'lancet' nature of this arch is proven by the apex element <199> (Fig. B.6.16). Extrapolation from this one element places the *arch centre* close to the arch soffit. This illustrates the use of an arch based on an equilateral triangle. At least two lancets of

this type existed; the clue being the apex blocks (only one *handed* example can derive from a window).

B.6.76 Close agreement between the different arch centre readings illustrates that the radius was in the region of 0.724–0.739m (Table B.6.3). For this exercise, the arch is treated as truly equilateral and 0.737m wide (29 inches). It was 0.6421m high.

Voussoirs	Segment (metres)	Convergence (metres)	Average (Segm. + conv.)
199 apex	0.360*	0.670 (mirrored)	*unreliable reading
1001 common	0.745	0.810	=0.777
137 spr. line	0.703	0.694	=0.701
Averages	**0.724**	**0.727**	**0.739**

Table B.6.3: *The Lancet window arches (BC IV); measurements from soffit reveal*

B.6.77 An aggregate length of at least 4.24 metres of jamb survived (in 2016) and this type of window was clearly tall and/or numerous.

B.6.78 It is possible to make some observances about the course heights respected. Nine jamb stones were broadly uniform in height (ranging from 19.5 to 20.5cm in height). An eight-inch course was aimed at, allowing for a small allowance of mortar (3 mm). Another four occupied a different 'size class' of 26-27.1cm. Seven were of 'random' heights.

B.6.79 Rough 'X' marks were often scratched onto the beds of the jamb stones (Fig B.6.15). These probably were 'quality control' or 'completion marks. It is less easy to explain the three concentric circles inscribed onto one bed. Only the outer circle was drawn with a compass, the inner circles being merely 'sketched' in. Some see such compass-drawn marks as apotropaic, but a wide variety of 'non-signatory marks' were employed during the construction of Merton Priory (Samuel 2007, 191–3 and fig. 190). They were placed in positions where they would be invisible on the laying of the next course. It is possible that this circle, alongside the others marks, were 'glyphs' intended in an age of illiteracy to instruct about heights, orientation *etc*. for the benefit of the builders.

B.6.80 There is no extant known parallel for the lancet moulding but the 'undercut hollow chamfer [has]...at least one of the terminal fillets adjoins a deep hollow (usually more than a semicircle), so that the moulding appears cut off from the rest of the formation...' (Morris 1978–9, 43). Morris dated the earliest English examples to about 1280 (*ibid*, 45) and saw it as a result of links across the North Sea, particularly to the Lower Rhine. I have opted for a somewhat earlier date, on the basis of technical features (the employment of detachable 'window frames' for example). A date of *c*.1250–1270 is suggested; the role of the building can also be suggested in the light of the Cartulary documentation (see below).

Rere-arch Label probably associated with the Massive Lancets.

B.6.81 These two labels (AF116, 1006; Table B.6.1; Fig. B.6.16) show signs of indirect association with the lancets (IV.b) and were recovered from the same cesspit wall (the reverses were cut to form its facing). The moulding appears initially identical, but slight differences in proportion indicate that these were not employed in the same feature.

B.6.82 Sharpened curved blades were used to rake out the hollows and it is likely that a coarse abrasive stone was used for final finishing of the drip. The jointing surfaces were cut with a boaster held diagonal to the axes of the moulding.

B.6.83 Both labels were internal and bore well-preserved traces of polychromy, unique in the assemblage. Fragment <1006> bore paintwork of five hues. The chamfer was painted a dark brown while the quirk and arris were picked out in whitewash. The drip was

painted carmine, and later, it seems, a dark orange hue. The other label <116> was simply whitewashed with progressively coarser coats over the years.

B.6.84 The segment radius at the soffit is effectively identical on both labels: 1.637m (<1006>) and 1.632m (<116>), witnessing the skill of the masons. This value is considerably larger than the *extrados* of the lancet (1.029m) which was also externally framed by a label (no example survived).

B.6.85 There is reason to suppose that these labels adorned the lancet rere-arch. The presence of a substantial and splayed embrasure would account for the difference in the radius, if it is assumed the two shared a common arch centre. On the basis of this assumption it is possible to suggest a minimum bay interval for the parent structure of 8.27m. This is because the label met the springing line at a point whose distance from the lancet mid-point can be safely extrapolated (Fig. B.6.12).

B.6.86 The label would have framed a rere-arch turned with plain scoinsons. After the Dissolution, plain blocks were always especially desirable and were probably removed elsewhere. The freshness of the paint hints that the lancet dressings were directly re-used and not stockpiled.

B.6.87 The moulding rings the changes on various patterns freely employed in the Early English and Decorated period. The combination of a chamfer over a drip is however relatively unusual; appearing in a more elaborate form in the choir at Gisborough Priory, N. Yorkshire (Sharpe 1846, *string courses*). This was largely reconstructed after a serious fire in 1289 (Historic England 1994).

Buttress Weathering

B.6.88 This simple weathering (AF94, Table B.6.1; Fig B.6.16) was cut from a hard Lincolnshire Limestone – probably Barnack stone. The surfaces were vertically reeded with a boaster chisel; the marks being barely weathered.

B.6.89 This probably derived from a sloping base-course or (less probably) a buttress. One *perpend* (vertical joint) seems to be have roughly adapted at the time of setting. Perhaps the probable base-course ran into a re-entrant wall surface. Observation of similar usage (see below) illustrates that this was the lowest of several sloping courses.

B.6.90 There is good cause to suppose this base-course derived from the same parent structure as the massive lancets. The use of a resistant stone for such an application would be normal practice. The nave base-course at Bridlington Priory employed a similar drip moulding (Sharpe 1846, *Base-courses*) but the formation was extremely common.

Building Campaign V, Miscellaneous Mouldings (1270–1340)

Cloister Arcade Respond? (problematic)

B.6.91 The characteristics of the building stone (AF1005, Table B.6.1) resemble those of *Weldon* stone '... a shelly oolitic limestone with ooliths less than 1mm in diameter. Shell fragments, mostly oysters, about 3 to 5mm across, occur as layers in the rock. It is porous with little cement' (Hudson and Sutherland 1990, fig. 3). The bedding is horizontal to the run of the moulding. This element was cut with chisels, but one face bears marks of a saw, with the characteristic snapped 'burr' at the edge.

B.6.92 The polygonal moulding (not illustrated) is ambiguous. It bears similarities to simple chamfered mullions (quirks similarly break the chamfers in an early published example at Troyes-St. Urbaine; 1262-6: Morris 1978–9, 11). A related fragment (not otherwise recorded) incorporated a crude stop to the quirk; quite 'un-medieval' in appearance).

B.6.92 This could be a respond for a cloister arcade. The adaptations illustrate re-use in a post-medieval probable tomb. That it originated as a medieval moulding is not to be doubted.

Clustered Respond Capital

B.6.93 This was severely damaged during and after demolition; it can nonetheless be understood to be a respond capital (AF387, Table B.6.1). The fresh condition indicates that this was always an internal feature. The design was inscribed on the underside of the capital. This survival has played an important role in the comprehension of the fragments.

B.6.94 The bed and *impost* were cut with a sharp chisel blade about 5.5cm wide while the exposed surface was finely finished. A 'leaf' on the capital displays graffiti of unknown significance.

B.6.95 The capital probably served as part of a respond capital formed from three dressings (Fig. B.6.17). The respond capital was formed from three parts: two formed the rear part and a third the central projecting capital (this does not survive but its form can be predicted). The surviving element was keyed deeply into the wall; confirming its role.

B.6.96 Beaker-shaped sub-capitals were separated by 'leaves'. No trace survives of the upper margin of the capital, other than the impost surface whose original width can be conjectured at about 0.78m.

B.6.97 In its original state, the capital rested on a clustered pier of five shafts arrayed in echelon. These were equidistantly arranged on common alignments with wide hollows between them.

B.6.98 Such a respond was employed in an arcade, but an arcade completely different to the columnar arcade. It was characterised by the *three-quarter roll and hollow* moulding; vividly conveying advances in design in the mid-13th century. A relatively old-fashioned toolkit was used, and this might be an early example of this type in England.

Major Vault Wall Rib

B.6.99 This rib moulding (AF494, Table B.6.1; Fig B.6.18) was recognisable despite severe damage, weathering and abrasion. Virtually all tooling marks had vanished, but the moulding was probably brought to a fine finish with a comb.

B.6.100 This acted as a wall rib; the putative free rib had an axis of symmetry on the axial termination. The hollow-chamfered moulding is characterised by a fillet (gone) at the axial termination, this was flanked by ogees, in their turn meeting short canted pieces. Shallow hollow chamfers met beads and small three-quarter hollows at the margin of the plain and deep dosseret (the reveal meeting the vault web).

B.6.101 The rib was slender and deep (*c*.12.4 x *c*.24.8 cm). The uncertain status of the surviving faces hinders measurement, but extrapolation indicates an arch centre of 1.48m. Typically, such a wall rib would have framed a rere-arch at clerestory level.

B.6.102 A type widely employed in the early *Perpendicular*. Morris (1978–9) placed it in his first family (*lateral roll mouldings*, 1979, 13). Subsidiary ribs employed in the presbytery at Ely (1322 *sqq*: *ibid*, fig. 14, b) show the probable appearance of the free rib.

Window Tracery

B.6.103 This unprovenanced moulding (AF539, Table B.6.1; Fig B.6.18) was greatly damaged and abraded. There is no adhering re-use mortar.

B.6.104 It originated as the junction of an *arcuated supermullion* within the arch of a large traceried window. The centre as measured from the extrados was approximately 2.17m. The moulding was of a common (virtually standard) late-medieval type; a small roll forming the axial termination. This was separated from two flanking hollow chamfers by short straight pieces – not canted. The interior is rebated with a plain rectilinear axial termination. The mullion probably represents a minor order. Evidence for original glazing is ambiguous.

Base of Chimney

B.6.105 A large curved block (AF450, Table B.6.1) was essentially complete but all surfaces were severely weathered to a greater or lesser degree, including those joints that might normally have escaped weathering. The block had also undergone much abrasion before and since excavation. The piece was roughly hewn with a *racer* or a boaster at the joints. The execution and geometry are likewise haphazard.

B.6.106 This block formed slightly less than a quarter of the plinth of a round chimney (diam. = *c*.0.692 m) (Fig B.6.19). The hollow-chamfered base of the chimney was held together by U-shaped metal staples. At least four blocks were used for this purpose. The base was two and a half feet (0.7726m) and contained a flue *c*.0.46m wide. The flue was picked out with a *point tool*. Further weathered pieces <453> and <454> from the same context (assessed 2014) included a greatly weathered polygonal cornice (not illustrated).

B.6.107 The entire chimney could have stood two metres or so high and was hundreds of years old at the time of demolition. Such an 'open cylindrical chimney' cannot be dated with any precision, but an '...octagonal plan was in vogue' by about 1325 (Wood 1965, 284). The implication is that this was slightly earlier, despite its polygonal cresting.

Building Campaign VI (1340–1538) miscellaneous features

External Surround of Large ?Window

B.6.108 This badly-weathered moulding (AF483 recut, Table B.6.1) originated as a clustered pier capital (BC II, j). The capitals had been cut back and survived only in outline (Fig. B.6.18).

B.6.109 The dressing (not illustrated) was to enable fresh use as a quoin adorned with a *sunk wave*. This early Perpendicular pattern was paralleled (for example) in the Chancel at Astley (Worcs, 1343 *sqq*; Morris 1978–9, fig. 2:g). The quoin served for hundreds of years in an outside location, probably as part of a large window.

Well Head

B.6.110 The dense and fine-grain building stone used for this curved block (AF425, Table B.6.1) is distinctive. No macroscopic fossils are visible and it more resembles a sandstone with a fine greenish-buff tint (?Magnesian stone). Traces of soft re-use mortar are consonant with re-use in a 19th- or 17th-century structure.

B.6.111 The visible surfaces were finely finished with combs, while the *clawtool* was used for perpends. The inner face of the shaft was left in a roughly dressed state. The upper margin is rounded, as if worn.

B.6.112 The large block was broken during machining and the other half not seen. Despite this, it can be identified as part of the lip or coping of a wellhead.

B.6.113 The block is geometrically precise, allowing the plan of the well to be closely determined. Eight such curved blocks would be required. They were joined by eight

staples on the underside (Fig. B.6.20). The well-head had an external diameter of six feet (1.81m), while the interior was four feet (1.20m) wide. The internal face of the shaft was *pitched* (left in the rough). The absence of weathering hints that this well was covered by a shelter, or was otherwise enclosed.

Building Campaign VII: Post-medieval structure

Balustrade of Monumental Tomb

B.6.114 As many as eighty-nine Ketton stone fragments were derived from a single context, wall 974. Most were plain blocks or paving stone fragments. Twenty-two were retained for further examination (Table B.6.1: AF209, 218, 220, 221, 232, 234, 242, 244, 268, 269, 272). The surviving fragments must only be a small fraction of the parent structure even allowing for machining losses (see below).

B.6.115 Eight fragments could be recognised as parts of balusters. These were carefully turned with barely detectable variation. Their high finish showed slight weathering. Six (including <209>) formed parts of free-standing balusters. Two <234> <242> were segmental in section, as if to lie against a flat surface (Fig. B.6.21).

B.6.116 The 'basic' baluster was slightly less than two feet high (0.597m: the mortar bed was allowed for?) and it was represented by <209>, <220>, <269>, <272>, <274> and <232>. The 'applied' baluster fragments included a rectilinear ?capital. This retained a mortice for an ?iron tenon to attach the baluster to a 'banister' of stone. These segmental balusters were rarer;<215>, <234> and <242>. Complete balusters were sawn down the mid-line to make the segmental balusters; this would explain why these are segmental rather than truly semi-circular in profile.

B.6.117 Three cavetto mouldings <221>, <244> and <268> (not illustrated) probably formed the weathered plinth of the structure. One cavetto-moulded cornice fragment <218> (not illustrated) may have derived from the 'banister, which incorporated re-entrants. Such 'doglegs' would normally mark the projection of solid pilasters at the corners of an area enclosed by a stone balustrade.

B.6.118 Such light stone balusters are most easily compared with those used on stairs. A house dated to 1698 in Gloucestershire (Alcock and Hall 1994, 2) employs a similar if more attenuated type. A solid structure with an ornamental applied 'blind' balustrade around the base is illustrated.

Monumental Tomb Epitaph

B.6.119 The weathered and abraded fragment (AF251, Table B.6.1) was part of a larger panel of stone. Only part of one margin survives. One side bears part of a weathered inscription. The margin of the fragments was keyed to accept a tongue projecting from a vertical member. The panel sheared along a channel in the rear which perhaps marked its midpoint. It is therefore possible to suggest that the field of the inscription was originally 20 inches (0.507m) wide (Figs B.6.22 and B.6.23).

B.6.120 Parts of three lines survive:

Swift was his flight...

He clos'd his eyes as...

The Flesh...

B.6.121 This is obviously part of an epitaph; calligraphy, spelling and capitalisation illustrate a post-Restoration date. The balustraded structure bore this inscription on a

central free-standing tomb. The tomb was evidently destroyed when Newmarket Road was widened over part of the graveyard of St Andrew-the-Less.

B.6.122 Given the suggested available width of field, the inscription may have read something like:

Swift was his Flight (at the End of his Life).

He clos'd his Eyes as (his Soul departed)

The Flesh (he cast off as if a Garment).

Conclusions

B.6.123 At this point, it is appropriate to compare the results to Clark's 123-year old interpretation of the *Barnwell Cartulary* (1893, passim). Rigold stated that 'too much can be read into dedication dates' before describing the various pitfalls awaiting the unwary (1977, 102).

B.6.124 The random sample provided by the assemblage independently illustrates a building history of the priory. Clark's useful summary remains largely unchallenged (*ibid*, 231–2) but some clarifications are provided. The assemblage also provides some knowledge of works carried out after 1295, when the 'Cartulary' (more accurately described as a historical account and miscellany of useful reference material: *ibid*, 223) comes to an end. His 'Period I' (1112–1175) equates with the architectural fragments BC I (1112–1180). This period is barely represented in the assemblage. The Cartulary explicitly records that a church of 'wonderful beauty and massive work' was commenced shortly after the removal of the canons to this more salubrious site in 1112. Work on the church was vigorously carried forward after 1112.

B.6.125 The only moulding that can be associated with this church of *ponderosa operis* is a massive rib stone, comparable in scale and pattern to those used in the aisles of Durham Cathedral (1095 *sqq*). This rib stone was found some distance to the east of the Coldhams Lane excavation in 2012 (Samuel, in prep). Tellingly, it was re-cut to form a string course but at a later date than is convenient for the arguments here (*c*. 1250–1350). The only other architectural fragment that *might* date from this period was an angle roll, as might have been employed in the jamb of a portal.

B.6.126 The ?re-used Roman sarcophagus is the most unusual of the architectural fragments. Such sarcophagi, if found in the vicinity of Cambridge (as they have historically been), are likely to have been re-used. Its exact connection to the priory is unknown, but it probably made several journeys before it finally found its way into a post-medieval wall. It may have no connection with the Priory at all.

B.6.127 The death of the original patron Pain Peverel brought work to an end, and his son chose to settle in the Holy Land, never returning. An energetic Canon, Robert, succeeded as fifth prior in 1175. This brought an end to a long period of inertia. A wealthy soldier, probably concerned for his everlasting soul, teamed up with the new Canon. The result was a drastic fresh start. Their aim was to create a new church 'of more suitable character'. A simpler style of architecture had been introduced to Britain by the Cistercians at that time. One can speculate that Everard de Beche had travelled far and seen much. Either way, the old half-completed Romanesque church had to go.

B.6.128 '...the church which had been nobly commenced of wondrous dimensions and massive work was pulled down to the foundations'. Clark suggested that the term *ecclesiam* referred only to the nave, given the practical problems and sacrilegious risks caused by wholesale demolition of the old church. The virtual absence of architectural

fragments of Romanesque character at this stage suggests that the Cartulary stated the plain truth. The old church would have provided an excellent quarry for the new church.

B.6.129 The church was consecrated in 1190, and Robert died in 1208. He was buried 'in front of the great rood'. Was the church actually complete by either of these dates? It was possible for a liturgical consecration to be carried out on the east end of a new church while the nave was still being built.

B.6.130 Lancet openings were freely employed, but their location is of course unknown. The larger of the two represented *might* derive from the church and a claustral building respectively, but this is speculation. Perhaps sixteen discrete architectural features, in the absence of documentation, would point to much work going on in a period loosely delimited by 1180 and 1200. The new church was, it seems, in the 'Transitional' style, employing fashionable patterns: keels, angle rolls, quirks and lancets.

B.6.131 A handful of fragments illustrates that two types of arcading were employed, probably but not certainly in the church. Clustered shafts using simple campaniform capitals were employed as well as a much more elaborate (but gravely weathered) vault respond capital. This capital was surmounted by five shafts in echelon and was once comparable to some of the finest churches of the period (Samuel, in prep).

B.6.132 There is better evidence for a columnar arcade, employed at some point in the church.

B.6.133 The diameter of the Barnwell columns (0.964m) closely follows the diameters of the columns in several contemporaneous priory churches; excavated or extant. The repetition of this 'random' dimension is probably connected with a proportionate system used for setting out Augustinian and other churches in the Plantagenet period (Samuel 2014, 196 *passim*).

B.6.134 The chancel of St Bartholomew's, Smithfield (?1160s) has an internal width of 18.13m (author's observation) while recent excavations at Holywell Priory, Shoreditch (1152 *sqq*) gives the width of the nave (as remodelled in the ?1180s) as about 46 feet internally (13.98m) and 50 feet externally (15.26m; Samuel, in prep). These analogues illustrate that the Barnwell church was of an 'intermediate' size order.

B.6.135 Seen in isolation, the 'fit' with the documentation is impressive; it does however suggest that the nave was not complete by 1190. Rigold would have placed the respond base squarely in the first decade of the 13th century (1977, fig. 7:227). Whether a complete cut-off would have occurred at 'the [Papal] Interdict' is however questionable.

B.6.136 The church may have originally been illuminated by large and simple lancet windows with external rebates and splayed embrasures (III, c). There is tenuous evidence that these windows were 'modernised' (see below)

B.6.137 Seven architectural features correspond to Clark's 'Period III' 1213–65. The cloisters and their buildings were all built or rebuilt in stone in this period. Clark identified the probable position of the cloister circuit; using the final surviving part of the priory as an anchor for his theories. The Priorate of Laurence of Stanesfield, who held office from 1213-1251 saw a near-complete renewal of the necessary ancillary buildings of a priory – all built through his efforts.

B.6.138 The Prior's chamber and chapel were built between 1254 and 1265 by Prior Jolanus of Thorley (Clark 1893, 232). It is tempting to place the massive arrayed lancet windows in these structures. Jolanus also built or rebuilt three 'panes' of the cloister and the chapter house. The south cloister (against the church) is not mentioned, probably

because it had been completed with the nave half a century earlier. The Prior's chapel may also have been embellished by a fine Rayonnant-influenced arcade. The earliest examples of the three-quarter roll moulding and hollow in alternation occur in key works of Parisian *Rayonnant* in the 1240s and in the second half of the century, it spread to other areas, being popular in Normandy, from where the idea spread to England (Morris 1978–9, 5).

B.6.139 From this point on, Clark had no evidence to go on, except for the vivid description of the burning out of the church tower in 1287. The Cartulary comes to an end eight years later at 1295. Few architectural fragments derive from the obscure period between 1295 and the Dissolution; there are however tantalising hints of demolition and reconstruction. Large-scale vault construction occurred some date shortly before or after the Black Death. A weathered quoin likewise bears a moulding that can be pinpointed to after 1340. This is of interest because it originally formed part of an arcade ?respond capital.

B.6.140 Replacement of earlier windows by current types was illustrated by rare and fragmentary pieces of tracery from both sites on Newmarket Road (Samuel in prep). The mouldings were 'stock-in-trade' *Early Perpendicular* types. The Priory supposedly suffered a 'thousand pounds of damage' during the Peasant's Revolt in 1381 (Haigh 1988, 7). This damage, if limited in extent to the smashing of windows *etc*, would have provided an incentive to carry out wholesale replacement; repairs would have to be carried out in any case. However, it should be mentioned that programmes of window replacement were fairly common after the Black Death. Bermondsey Abbey was subject to a well-documented 'rolling programme' of upgrading and repair (Samuel 2011, 198).

B.6.141 One of very few architectural fragments that can be attributed to a building other than the church is a round chimney with a polygonal coping, perhaps over two metres high (V, e). This undated structure bore the weathering of centuries. That it survived the Dissolution cannot be ruled out, given that such functional buildings might have found new use. The 'Cellarer's Checker' (or *warming room*) retains a (blocked) fireplace (Clark 1893, fig. 1) and it is conceivable that the chimney once served it.

B.6.142 A large finely-appointed well with a shaft four feet wide (1.2m) was built of ?Magnesian stone at some date after the Black Death (the tooling marks are the sole evidence of date). The well head coping still bears the wear of ropes. The interior was deliberately pitched (left rough); perhaps to provide foothold to those charged with its maintenance. Clark noted the presence of a ?rectilinear well in the plan prepared for him by St John Hope (Clark 1893, pl. xli). It seems this was visible in the limit of the quarry excavation. He indicates that it was in the subvault (undercroft) of the dorter (dormitory). This seems quite likely as the sheltered location would keep the water clean, but what evidence he used other than extrapolation is unrecorded.

B.6.143 Several wells may have served the Priory (Barnwell Spring had been one of the factors determining the relocation of the priory in the 12th century). These wells may have been retained, like other useful features, after the Dissolution. A sump might be employed in the centre of the cloister as at St Gregory's Priory, Canterbury (Hicks 2001, fig. 95), but this well head seems too grand for such a purpose. Central cloister wells are a common feature on mainland Europe (Kate Hamlyn, pers. comm.)

B.6.144 Long after the destruction of the Priory, a tomb was built in the graveyard of St Andrew-the-Less. The tomb was ornamented with balustrading; applied directly as decoration to the free-standing tomb, and an outer balustrade formed a barrier from the

profane. This was clearly the resting-place of a rich and important parishioner who died around the turn of the 17th century. The name does not survive.

B.7 Metalwork

By Chris Howard-Davis

The Copper Alloy

Introduction

B.7.1 In all, there were 203 fragments of fine metalwork, probably representing, with the coins and jettons, around 169 objects. Most were from stratified contexts spanning Periods 2 to 4, but 34 items were unstratified. Condition varied, but was generally fair to good, although many of the objects were covered with a hard, crystalline corrosion product, which, on occasion, made identification difficult.

B.7.2 The assemblage contained significant numbers of later medieval and early post-medieval objects, reflecting the periods of activity identified from other sources of information. There is an obvious emphasis, at all periods, on items associated with personal appearance and, especially, apparel. Period 3 cellar **1906** (fill 1907) on Plot 12, produced more material than any other individual context (27 items, *c.*16% of the assemblage), with a marked concentration on objects from the late 17th to mid 18th centuries.

Coins

B.7.3 Two medieval silver coins were recovered from the site. A long-cross penny of Edward I (?) (**1**), was from Period 2 pit **1940** (fill 1941) at the front of Plot 6. The other (**2**), found unstratified, is poorly preserved and illegible, but has clearly been cut in half, making it a halfpenny.

B.7.4 A low denomination copper alloy coin of 18th-century date (**3**) and another which remains undated (**4**) came from cellar **1906** (fill 1907) on Plot 12, and the fill (732) of boundary ditch **830**, at the rear of Plot 14. A single farthing (**5**) attributed to Victoria, came from Phase 4 layer 214, and can probably be dated to after *c.*1860. The remainder of the coins (**6**–**11**) were unstratified, and cover the reigns of William III and George II, III, and IV.

1, Silver long-cross penny. Possibly Edward I (1279 coinage??), Obv: full-face portrait, legend illegible, Rev: long cross, legend illegible, SF202, 1941, Period 2

2, Silver cut halfpenny, Obv: illegible, Rev: illegible, SF419, unstratified

3, George III (first issue). Halfpenny, Obv: laureate and cuirassed bust, right, Rev: Britannia seated, left, SF223, fill 1907 (cellar **1906**), Period 3

4, Halfpenny?, Obv: illegible, Rev: illegible, SF44, fill 732 (ditch **830**), Phase 3

5, Victoria. Farthing. Possibly *c.*1860?, Obv: bust obscured. VICTORIA, Rev: illegible, SF64, Period 4, layer 214

6, William III (??first issue, 1696). Farthing, Obv: laureate and cuirassed bust right. GVLIELMVS, Rev: Britannia seated left, SF36, unstratified

7, George II Halfpenny. Poor condition, Obv: laureate and cuirassed bust left. GEORGIVS, Rev: Britannia, detail lost, SF16, unstratified

8, George II Halfpenny. Very worn. Poor condition. Obv: ?young laureate and cuirassed bust left, Rev: Britannia, detail lost, SF23, unstratified

9, George III. Halfpenny (first issue). Worn, Obv: laureate and cuirassed bust right. GEORGIVS III REX, Rev: Britannia, seated. 1773?, SF35, unstratified

10, George IV. First issue farthing (1721–6), Obv: laureate and draped bust left. GEORGIUS IIII DEI GRATIA, Rev: Britannia right. Date below. SF34, unstratified

11, Halfpenny? Very worn, Obv: Illegible, Rev: Illegible, SF31, unstratified

Jettons and tokens

B.7.5 Apart from the silver penny described above, Period 2 contexts produced no further coins and only one jetton (**12**), from pit **2096** (fill 2033), again on the frontage of Plot 6. French jettons appeared in England in the second half of the 13th century, but were not common until the 1330s. From then, until the end of the 15th century, they are the most commonly found jettons in the country (Mernick and Algar 2001, 224). After that date, Nuremburg jettons come to precedence, continuing in use until 1630–50, when the use of jettons seems to have ceased in England (Egan 2005, 172).

B.7.6 There was an appreciable number of jettons from Period 3 contexts, all were late medieval or early post-medieval in date, the majority being of French origin. Jetton **13** is from well 1456 (fill 2248) towards the front of Plot 11, and on Plot 12, jettons **14** and **15** come from floor 75 and pit 1741 (fill 1710), both on the frontage, and **16** from cellar fill 1907, at the rear of the plot. Several others (**17** – **19**) were recovered unstratified. Egan (2005) has noted the vast and apparently random variation in the decorative elements of both French and Nuremberg jettons, and especially the latter. Following his stance, the jettons listed below are not described in painstaking detail.

12, French jetton, early 15th century? See Mernick and Algar 2001, no's 64 and 71, Obv: Crown with three trefoils on band. +AVE MARIA GRATIA P, Rev: Triple-stranded cross flori in quadrilobe. A V E M between crosslets in spandrels, SF332, fill 2033 (pit **2096**), Period 2

13, Jetton, fragmentary and in poor condition, Obv: illegible Rev: illegible, SF290, CAMEAG14, 2248 (well **1456**), Period 3

14, French jetton? with perforation. Mid to late 14th century?, Obv: not legible, Rev: fleur-de-lis within ?double-stranded, bowed cross flori, SF94, floor 75, Period 3

15, Nuremburg jetton. Issuer not determined. Mid-16th century on. Obv: Imperial orb surmounted by cross patteé within a tressure, within a circle. Rev: double-stranded arcuate cross flori alternating with lis within a ring, SF123, fill 1710 (pit **1741**), Period 3

16, French jetton, early fifteenth century? Obv: Crown with ?? between annulets on band. +AVE MARIA GRATIA PL[, Rev: Triple-stranded cross flori in quadrilobe. AVE[ ] between five-point stars in spandrels, SF222, fill 1907 (cellar **1906**), Period 3

17, French jetton. Punched depression in centre of obverse face. Mid to late 14th century, Obv: Possibly standing king under canopy., Rev: Single-stranded cross flori in quadrilobe. Illegible letters in spandrel, SF20, unstratified

18, Jetton?, Obv: Illegible, Rev: Illegible, SF96, unstratified

19, Largely plain token, edges cut. Obv: small ?crowned head, punched just off centre., Rev: blank, SF51, unstratified 99999

Items of apparel

B.7.7 The group is dominated by buckles and buttons, along with small numbers of aglets (points, or lace tags) and other belt fittings. In addition, there is a large group of dress pins (*c*.34, based on the number of pin-heads present) many of which would have been used to secure items of clothing and feminine headwear (Beaudry 2006, 14), as well as in sewing, and for other purposes, like securing papers (Biddle and Barclay 1990).

Buckles and belt fittings

B.7.8 Only two of the buckles come from Period 2 contexts, and both are later medieval forms. Both come from pits located to the rear of Plot 2. Buckle **20**, from pit **3354** (fill 3353) is a complete, but broken, plain double oval frame, and **21**, from pit **3351** (fill 3346) is also a double oval frame, this time incomplete. The surviving loop has knops.

B.7.9 Although not precisely dateable, double frames were perhaps most common in the late 14th and 15th centuries (Egan and Pritchard 1991, 53), with their use continuing into the 16th (Hinton 1990a, *e.g*. fig. 132, no 1206; Whitehead 2003). There is, in addition, the cast pin from an annular buckle or brooch (**22**) from a buried soil, 828, on Plot 5. Large buckles of this kind can date as early as the mid-13th century, but as they remained in use into the mid 15th (Whitehead 2003), there is no reason to think that SF47 is any earlier than the other buckles from Period 2.

B.7.10 Period 2 also produced three examples of embossed decorative strap or belt mounts. Mount **23**, from levelling layer 1612 in Plot 5 is octofoil in form, and can be paralleled amongst medieval examples from London (Egan and Pritchard 1991, fig 122). Item **24**, from pit **2725** (fill 2732) to the rear of Plot 6, is rectangular, with an embossed lozenge framing an animal head, perhaps a fox. Sheet copper alloy mounts such as these appear in the early 13th century and continue, probably, into the 16th century (*op cit*, 162). Mount **25**, from pit **1638** (fill 1636) to the front of Plot 8, is round with four perforated lobes on its perimeter, and is embossed with a rather cheerful lion; it is probably of late 14th- to 15th-century date. Egan and Pritchard illustrate an example with a hound in the same pose (*passant guardant*), but lacking the four fixing loops, and make mention of an example embossed with a lion in a private collection (*op cit*, 167). A mount of similar form, but with an engraved wyvern, comes from a 12th-century context at Ludgershall Castle (Robinson and Griffiths 2000, fig 64, no 25). There are a number of buckles with similar lion motifs (see for instance Howard-Davis 2007, fig. 8.20, no. 23; Margeson 1993, fig. 13, no. 135), which seem to have been particularly popular in the mid-14th century.

B.7.11 Object **26**, from Period 2 surface 1613 on Plot 5, has tentatively been identified as a belt plate or reinforcement of some kind, and **27**, from pit **2665** (fill 2664) to the rear of the same plot is a strap end of medieval form.

B.7.12 It seems likely that buckle **28**, with a rectangular frame and buckle plate from Period 3 floor 75 on Plot 12 is also of medieval date (several examples from London are from contexts dated *c*.1350–1400; Egan and Pritchard 1991), although the form is long-lived (Whitehead 2003), and could possibly be later. Annular buckle **29**, from Period 3 floor 620 on Plot 14 is also likely to be late medieval. Its size, only 26mm in diameter, might suggest it served as a shoe buckle.

B.7.13 A square-framed buckle found unstratified (**30**) is also of medieval date, with a close parallel from London dated to the second half of the 14th century (Egan and Pritchard 1991, fig. 62, no. 447). Another example is known from Colchester (Crummy 1988, fig. 18, no. 1744), but was recovered from topsoil. Whitehead (2003, 77–8, no. 479) suggests a later date for these distinctive buckles (late 15th to 16th centuries) and raises the likelihood that they were used only on waist belts and sword belts.

B.7.14 A small annular buckle (**31**), also found unstratified, has a distinctive appearance, being in the form of a five-petalled flower (a 'rose buckle'); examples are known from Colchester and Norwich (Crummy 1988, fig. 18, no. 1734; Margeson 1993, fig. 15, no. 157). These buckles, often cast pewter, seem to be of late 15th- to 16th-century date

(Whitehead 2003, 46). A double loop oval frame (**32**), most common in the period *c.*1550–1650 came from Period 3 pit **2355** (fill 2359) at the front of Plot 10.

B.7.15 The group of four decorative two-piece shoe buckles (**33**–**36**) from Period 3 cellar **1906** (fill 1907) on Plot 12 are all of late 17th- to mid-18th-century date. Both **33** and **34** have stud chapes, allowing them to be fixed to the shoe and/or removed with ease, and can thus be dated *c.*1660–1720, although their use was not widespread until the 1680s or, in the case of SF209, 1690s (Whitehead 2003, 96).

B.7.16 A small, plain rectangular buckle (**37**) came from Period 3 pit 1741 (fill 1710) also on Plot 12 (front), as did a small, plain buckle plate (**38**, fill 1709), although it cannot be part of the same buckle. Plain buckles like this were in use from the mid-14th century to the end of the 17th century, but most excavated finds are from late 16th- to 17th-century contexts (Whitehead 2003), a date range which would seem appropriate here.

B.7.17 Another six buckles (**39**–**44**) were found unstratified and most are likely to fall within a similar date-range. Trapezoidal buckle **39** is probably of early 17th-century date. Buckle **40**, a plain, or slightly decorative rectangular one-piece buckle, has a long currency, from the mid 14th to the 18th century, with most known from the period 1570–1700 (*ibid*). Plain rectangular shoe buckle **41** is of 18th-century date. Buckle **42**, a D-shaped buckle with an offset bar, cannot be dated, but might derive from harness rather than clothing. Buckle **43** is a late form, with two pins on a roller. The outside frame is made from sheet, rather than being cast, suggesting a different use. The size and shape are reminiscent of 18th-century stock buckles, but it lacks the distinctive chape associated with these specialist buckles and could be more recent. A plain strap end (**45**) was also found unstratified, and cannot be dated with any accuracy.

20, Double oval buckle, cast. Broken, probably as a result of wear, but pin remains *in situ*, medieval/early post-medieval, L: 50mm; W: 44mm; Th: 3mm, SF490, fill 3353 (pit **3354**), Phase 2.2

21, Double oval buckle with knops on the loops, medieval, L: 45mm; W: 46mm; Th: 3.5mm, SF503, fill 3346 (pit **3351**), Phase 2.2

22, Cast pin from annular brooch or buckle, medieval, L: 50mm; W: 11mm; Th: 4mm, SF47, buried soil 828 (Layer 1), Phase 2.1

23, Round belt mount embossed with eight-petalled decoration. There is a central perforation, but no rivet remains, L: 23mm; W: 20mm; Ht: 3mm, SF131, levelling layer 1612, Period 2

24, Rectangular, lobate belt mount. Embossed with the head of an animal (possibly a fox), surrounded by beading, within a lozenge. There are two small perforations above and below the head, within the lozenge, L: 16mm; W: 16mm; Ht: 1mm, SF411, fill 2732 (pit **2725**), Period 2

25, Round belt mount embossed with the figure of a lion, *passant guardant*, within a beaded border. There were, originally, four equally-spaced perforated lobes for attachment, L: 18mm; W: 18mm; Ht: 1mm, SF129, fill 1636 (pit **1638**), Period 2

26, Sub-oval object with elongated surviving end bent round as if to secure through leather, L: 43mm; W: 14mm; Th: 1mm, SF133, surface 1613, Period 2

27, Trapezoidal strap end, with 'eared' terminal. Criss-crossing rocker decoration on the upper side. A single perforation survives for fixing. Underside plain, L: 36mm; W: 10mm; Th: 0.5mm, SF382, fill 2664 (pit **2665**), Period 2

28, Complete rectangular buckle and intact pin, with elongated, tapering buckle plate with a single rivet, L: 50mm; W: 20mm; Th: 4mm, floor 75, SF95, Period 3

29, Plain annular buckle with pin intact. Diam 26mm, Th: 3mm, SF92, floor 620, Period 3

30, Complete square buckle frame with central bar, the pin is broken but survives in part. The upper surface is decorated with groups of inscribed diagonal lines set within outer and inner borders, L: 48mm; W: 48mm; Th: 2mm, SF19, unstratified

31, Small double loop annular buckle in the form of a five-petalled flower. Pin absent. Possibly pewter, L: 27.5mm; W: 25mm; Th: 2mm, SF14, unstratified

32, Double-loop oval frame with moulded pin rests and further groups of moulded ridges. Pin absent, L: 33mm; W: 27mm; Th: 3mm, SF331, fill 2359 (pit **2355**), Period 3

33, Large two-piece trapezoidal shoe buckle with stud fastening. Probably concave sides with moulded knops around the spindle holes, and moulded pin rests flanked by knops on the outer edge of each loop. Although the stud fastening survives, the pin is lost, L: 55mm; W: 35mm; Th: 7mm, SF195, fill 1907 (cellar **1906**), Period 3

34, Rectangular decorative shoe buckle with stud fitting. Transverse collar moulding over spindle holes. Although the stud fastening survives, the pin is lost, L: 45mm; W: 34mm; Th: 3mm, SF209, fill 1907 (cellar **1906**), Period 3

35, Ornate cast trapezoidal buckle, probably with iron bar. Concave sides with moulded bifid knops around the spindle holes. Moulded pin rests flanked by knops on the outer edge of each loop. Probably a shoe buckle, L: 39mm; W: 27mm; Th: 4mm, SF194, fill 1907 (cellar **1906**), Period 3

36, Rectangular shoe buckle with pointed ends. Drilled for iron spindle, but bar missing, L: 45mm; W: 35mm; Th: 5mm, SF210, fill 1907 (cellar **1906**), Period 3

37, Plain, small rectangular buckle with central bar. An iron pin probably survives within corrosion products on the bar, L: 30mm; W: 21mm; Th: 3mm, SF172, fill 1710 (pit **1741**), Period 3

38, Small plain buckle plate with three (iron?) rivets, L: 26mm; W: 19mm; Th: 4mm, SF173, fill 1709 (pit **1741**), Period 3

39, Trapezoidal double-loop buckle with pointed ends and a lobed protrusion each side of the central bar. Bevelled outside edge, L: 42mm; W: 21mm; Th: 3mm, SF100, unstratified

40, Plain rectangular buckle, with baluster ends, perhaps with slight ridges. Pin absent. L: 46mm; W: 45mm; Th: 5mm, SF91, unstratified

41, Plain rectangular two-piece shoe buckle. Spindle missing, L: 42mm; W: 37mm; Th: 4mm, SF98, unstratified,

42, D-shaped buckle with offset bar, L: 30mm; W: 31mm; Th: 8mm, , SF450, unstratified

43, Narrow rectangular buckle with two pins on a roller bar. Frame made from sheet rather than being cast., L: 64mm; w: 32mm; Th: 5mm, SF12, unstratified

44, Oval buckle with central bar. L: 30mm; W: 25mm; Th: 8mm, SF32, unstratified

45, Plain strap-end or possibly chape, L: 38mm; W: 22mm; Th: 6mm, SF381, unstratified

Other Items of Dress

B.7.18 Lace tags, intended to sheath the ends of laces and prevent fraying, are a feature of medieval and later laced clothing. Although known from as early as the 13th century, they are most typically of 14th-century or later date (Egan and Pritchard 1991, 284), reflecting the fashion for tightly-laced clothing which emerged at that time. They do, however, seem to have come into wider use at an earlier date on the Continent (Gilchrist 2012, 72), and persisted in use well into the 17th century (Crummy 1988, 12; White 2005, 31). Two corroded fragments (**46**) came from Period 2 pit **3574** (fill 3571) on Plot 2, and a further three were from Period 3 contexts, all on Plot 12: floor 79 (**47**), pit **1741** (fill 1771; **48**), and pit **3002** (fill 2850; **49**). Where discernible, the examples

from Period 3 have edge-to-edge seams (Oakley 1979, type 1; Crummy 1988 type 1) like medieval examples from London (Egan and Pritchard 1991, 285).

B.7.19 There were also considerable numbers of dress pins (at least 34); their distribution is shown in Table B.7.1. Where it is discernible, they are, for the most part, of the wound wire head type (Type 1; Crummy 1988, 7), some of them crimped into a spherical head (Type 2; *ibid*), generally suggesting a medieval or early post-medieval date; none is illustrated. The range of shaft lengths generally supports Oakley's observation that 16th- and 17th-century pins tend to be shorter than medieval ones, with most of those from Period 3 being 30mm or less in overall length. Although probably in use earlier, dress pins came into common use from the late 13th century (Egan and Forsyth 1997, 222), and by the 15th century they were imported in enormous quantities (*ibid*). They were used extensively in 16th- and 17th-century dress, for instance to secure ruffs and headwear, or in place of buttons, and this seems a likely origin for many of the pins from the site. They were, however, also used in a range of other activities, including dressmaking and sewing, and albeit they are all unstratified, there are five thimbles and a sewing ring from the site, clearly indicating that sewing was taking place. Although imported in large quantities, with considerable amounts found in late medieval and early post-medieval contexts in London (*ibid*), elsewhere they are not often recovered in large numbers, presumably because of their fragile nature. SF576, from Period 2 clay-lined pit **3076** (fill 3078) on Plot 4, is unusual in having a larger, hemispherical (possibly cast) head, some 3.5mm in diameter. Similarly, pin SF246, from Period 3 pit **1424** (fill 2119) to the front of Plot 9, although probably of Type 2, is appreciably longer than all the others recovered from the site, being 62mm in length.

Period	Plot	Feature	Context	SF	Type	Length (mm)	No. frags	No. pins represented
2	2	Pit 3574	3571	541	2	27	1	1
2	3	Pit 3451	3461	536	1	24.5	1	1
2	6	Pit 1940	2063	573	-		1	1
2	6	Pit 1969	2021	232	2	38	1	1
2	7	Well 1939	1937	201	1	20	1	1
2	7	Pit 2038	2039	233; 234	2; 2	41; 43	3	2
2	7	Pit 2486	2493	317	-		1	1
3	9	Pit 1424	2333	330	2	23	1	1
3	9	Pit 1424	2336	329; 572	2; 2	18; 26	2	2
3	9	Pit 3503	3507	517, 519, 577	1 (x5); 2 (x 4)	>41	11	11
3	10	Pit 2355	2359	314	-		1	1
3	12	Pit 3002	2850	575	-		1	1
3	12	?Well 1577	1584	127	-		2	1
3	15	Pit 2136	2232	318	2	33	6	3
4	32	Layer	214	65	2	32	1	1
4	34	Foundation 350	455	26	1	23	1	1

Table B.7.1: *Distribution of pins (note that lengths have only been given for complete examples)*

B.7.20 Buttons have been in use since the early 13th century, but were not in widespread use until the early 15th (Egan and Forsyth 1997, 221), when they largely replaced brooches as a means of fastening clothes, as well as serving a decorative purpose. Only one, poorly preserved, button (**50**) was recovered from a Period 2 context, layer 954. It cannot be dated with any accuracy as the appearance and method of manufacture of early buttons changed little from the early 14th to the mid-17th century (*op cit*, 222), but is assumed to be medieval.

B.7.21 Most of the buttons associated with Period 3 came from cellar **1906** (fill 1907) on Plot 12, which produced six examples (**51**–**56**). It is possible that **51**, a hollow-cast hemispherical button with integral loop, could be of late medieval date, but most of the group are effectively contemporary with the buckles from the same deposit, placing them in the late 17th to mid-18th century. Button **56**, however, a stamped four-hole sew-through button inscribed 'Parfitt Cambridge' is without doubt considerably later. Button **57**, from pit **3503** (fill 3507) at the rear of plot 9, and **58**, from boundary ditch **816** (fill 818) at the front of Plot 14, are both of probable 18th-century date, but **59**, again a stamped four-hole sew-through button, inscribed 'Kettering Co op' which is from pit **2659** (fill 2660) at the rear of Plot 13, is considerably later, post-dating the foundation of the Kettering Industrial Co-operative Society in 1866.

B.7.22 Three more buttons came from Period 4 contexts (not catalogued below): SF105 from the fill of structure **1221** on Plot 32, SF558 from pit **3589** (fill 3595) at the rear of the same plot, and SF349 from pit **1995** (fill 1994) on Plot 33, are all late, SF558 probably being of 19th- or early 20th-century date. Two more, probably modern, buttons were recovered unstratified (SF10, SF11).

46, Two fragments of plain tapering cylinders of thin sheet, possibly a lace tag, L: 20mm; Diam: 1.5mm, SF578, fill 3571 (pit **3574**), Period 2

47, Long plain tapering lace tag, edge-to-edge sheet, L: 33mm; Diam: 3mm, SF263, floor 79, Period 3

48, Fragment of rolled sheet. Lace tag? L: 18mm; Diam: 2mm, SF320, fill 1771 (pit **1741**), Period 3

49, Plain tapering lace tag, edge-to-edge seam? One small perforation close to open mouth. L: 23mm; Diam: 2mm, SF415, fill 2850 (pit **3002**), Period 3

50, Poorly preserved button with domed cap and wire loop to rear, Diam: 20mm; Ht: 6mm, SF623, layer 954, Period 2

51, Hollow-cast spherical button with integral loop to rear., Diam: 11mm; Ht: 16mm, SF213, fill 1907 (cellar **1906**), Period 3

52, Hollow cast button with loop to rear, Diam: 20mm; Ht: 22mm, SF192, fill 1907 (cellar **1906**), Period 3

53, Large slightly domed round button with wire loop to rear, Diam: 22mm; Ht: 10mm. SF193, fill 1907 (cellar **1906**), Period 3

54 Hemispherical button with loop to rear, Diam: 15mm; Ht: 7mm, SF214, fill 1907 (cellar **1906**), Period 3

55, Biconvex, round-headed button with loop to rear. Geometric decoration on cap, Diam: 16mm; Ht: 7mm, SF215, fill 1907 (cellar **1906**), Period 3

56, Stamped four-hole sew-through button. Stamped Parfitt Cambridge, Diam: 16mm; Ht: 3mm, SF264, fill 1907 (cellar **1906**), Period 3

57, Button, probably made from two sheet hemispheres, held together with lead, Diam: 13mm; Ht: 12mm, SF518, fill 3507 (pit **3503**), Period 3

58, Slightly domed round button with wire loop to rear, Diam: 20mm; Ht: 7mm, SF43, fill 818 (boundary ditch **816**), Period 3

59, Stamped four-hole sew-through button. Embossed 'Kettering Co-op', Diam: 18mm; Ht: 2.5mm, SF410, Fill 2660 (Pit **2659**), Period 3

Other personal items

B.7.23 Part of a robust purse frame (**60**) was amongst finds from Period 3 pit **2636** (fill 2632) on Plot 15. Metal-framed purses did not appear until the end of the medieval period (Ward-Perkins 1940, 159), and were probably only fashionable from the late 15th to mid-16th centuries (Egan and Forsyth 1997, 233). This example appears to be Ward-Perkins' Type B2, and is most likely to date from the late 15th to early 16th century. A bent and twisted fragment of perforated U-sectioned strip (**61**) from pit **1741** (fill 1709) on Plot 12, possibly used as binding, could also, perhaps, be part of a second purse frame, of Ward-Perkins Type A1 or 2.

B.7.24 There was, in addition, a plain tapering sheath (**62**), probably a sword or dagger chapel (see, for instance Howard-Davis 2008, fig. 268) from Period 3 pit **1424** (fill 2344) on Plot 9, and a fragment of a probably early post-medieval rowel spur (**63**) was found unstratified.

B.7.25 Although all found unstratified, the thimbles include at least one possible medieval example (**64**), and a second example (**65**) is likely to be early post-medieval, perhaps 16th century. The irregular arrangement of the hand-punched holes on thimble **64** might suggest an early date, perhaps spanning the period 1400–1550 (Holmes 1999). Thimble **65**, now crushed, has evenly-placed punched holes spiralling up from the base, and continuing, in concentric rings, onto the top. Holmes (1999) suggests that the spiral arrangement was most common by the 16th century, providing a *terminus ante quem* for the object. Of the remainder, all taller, and made from sheet metal, **66** and **67** are probably early to mid-17th century, whilst the top of **68**, with close lines of holes, suggests it might be dated 1730–1800.

B.7.26 A sewing ring (**69**) has hand-punched holes, rising in an uneven spiral from the base. The uppermost row is truncated, perhaps suggesting that the upper part of the ring is lost. Like thimble **65**, it is possibly of mid-16th-century date.

60, Part of a purse frame, with an articulated bar (the suspension loop is missing), with part of one of the two pendent loops remaining. There are two suspension loops on the latter, presumably for attaching the fabric of the purse, L: 114mm; W: 33mm; Th: 112mm, SF376, fill 2632 (pit **2636**), Period 3

61, L-shaped strip, now bent double, with perforation holes. Pendent loop from purse?, L: 113mm; W: 11mm; Ht: 3mm, SF175, fill 1709 (pit **1741**), Period 3

62, Possible chape. Tapering ferrule or sheath made from sheet., L: 102mm; W: 22mm; Ht: 10mm, SF328, fill 2344 (cess pit **1424**), Period 3

63, Rear part of rowel spur with, probably, a small rowel, although this is now missing, L: 50mm; W: 63mm; Ht: 16mm, SF291, unstratified,

64, Small round-topped thimble with eight irregular rows of holes on the sides and several (partially obscured) concentric rows on the top. Flattened. L: 13mm; W: 18mm; Ht: 11mm, SF13, unstratified

65, Tall dome-headed thimble with eight rows of hand-punched holes, probably arranged in an uneven spiral, above an engraved line, *c*.2mm above the bottom. Dome covered with concentric lines of holes. Now crushed, Ht: 23mm, L: 20 mm; W: 11.5mm, SF90, unstratified

66, Tall, very narrow thimble. Two engraved lines *c*.5mm and 6mm above base. Holes not evident, surface probably almost completely eroded. Diam: 11.5mm; Ht: 18mm, SF37, unstratified

67, Tall thimble, stamped with holes, but surfaces too corroded for description. Flattened, L: 18mm; W: 12mm; Ht: 18mm, SF547, unstratified

68, Stamped thimble. Very fine pits on side on slight spiral, *c*.17 rows. Head larger holes in diagonal lines. Crushed, L: 20mm; W: 7mm; Ht: 18mm, SF93, unstratified

69, Open-topped thimble or sewing ring, Circular hand-punched holes set in a spiral rising from the base, where there is also a single engraved line, *c.*1mm above the bottom. Holes are *c.*1.25mm in diameter. The uppermost row of holes is incomplete, perhaps suggesting that the upper part of the ring has been lost, or that it has been cut down from a thimble., Ht: 13mm; Diam: 19.5mm; Th: 1mm, SF97, unstratified

Household Goods

B.7.27 Most of the remainder of the identifiable objects are day-to-day household types. A tentatively identified vessel fragment (**70**) came from Period 2 pit **1940** (fill 2498) to the front of Plot 6, but nothing else from Period 2 seemed to have an obviously domestic origin. There is also a small oval tag, with a small perforation at one end (**71**), as if intended to be used as a label, from pit **1783** (fill 1784) to the rear of Plot 8.

B.7.28 Period 3 cellar 1906 (fill **1907**) on Plot 12 produced two relatively small pan weights (**72**, **73**), a very poorly preserved drop handle (SF265), and small copper alloy nails and tacks (SF196, SF197, and SF321), but no other recognisable objects. A small round lock plate (**74**) from pit **1741** (fill 1710) at the front of the same plot, was again post-medieval or later. More small nails, possibly brads or panel pins (SF350) were from pit **3503** (fill 3507) to the rear of Plot 9. This plot also produced drop handle **75**, which, having a threaded screw fixing is presumably a late item, found on external surface 1260.

B.7.29 The most easily identifiable household objects, for instance spigot or tap handles **76** and **77**, teaspoon **78** and late medieval/early post-medieval crotal bells **79** and **80**, were all found unstratified. Similar tap handles from Norwich are seen as probably 17th-century in date (Margeson 1993, fig. 102, no. 932), being transitional between the cockerel-topped medieval types, and more simple 18th-century examples.

B.7.30 Five small plain rings ranging from 24mm to 28mm in diameter, and used for a wide range of purposes, all came from Period 3 contexts, three (SF211, SF212, SF224) from cellar **1906** (fill 1907) on Plot 12, one (SF225) from boundary ditch **2020** (fill 2018) at the front of Plot 14, and one (SF315) from pit **2136** (fill 2135) at the front of Plot 15.

70, Part of a simple rim from a slightly flaring vessel, L: 90mm; W: 55mm; Th: 4mm, SF350, fill 2498 (pit **1940**), Period 2

71, Stamped oval tag or fitting with one surviving perforation. No obvious decoration, except for a faint line round the margin, L: 21.5mm; W: 17mm; Th: 1mm, SF181, fill 1784 (pit **1783**), Period 2

72, Flat round pan weight, Diam: 32mm; Ht: 5mm, SF191, fill 1907 (cellar **1906**), Period 3

73, Flat round pan weight, Diam: 46mm; Ht: 6mm, SF217, fill 1907 (cellar **1906**), Period 3

74, Plain oval lock plate with keyhole set asymmetrically, L: 42mm; W: 36mm; Th: 1mm, SF171, fill 1710 (fill **1741**), Period 3

75, Oval round-sectioned ring running through square-headed screw (threaded), L: 448mm; W: 34mm; Th: 9mm, SF109, external surface 1260, Period 3

76, Plain bifurcated tap or spigot handle, L: 90mm; W: 40mm; Ht: 20mm, SF22, unstratified

77, Top of plain spigot handle, L: 17mm; W: 38mm; Th: 6mm, Sf 33, unstratified

78, Teaspoon with oval bowl, stamped from sheet, L: 57mm; W: 30mm; Th: 6mm, SF15, unstratified

79, Two piece cast crotal bell with broad strip suspension loop, L: 27mm; Ht: 17mm, SF255, unstratified

80, Approximately one third of a cast crotal bell with decorated top, L: 21mm; W: 27mm, SF418, unstratified

Modern finds and other fragments

B.7.31 A small ferrule, part-filled with lead (SF106), came from Period 4 structure **1221** (fill 1225) on Plot 32. Probably the latest copper alloy find from the site, SF30, from Period 4 pit **628** (fill 629) on Plot 33 is part of a telephone or wireless radio (Gecophone) patented by The General Electric Corporation (GEC). The GEC was founded in 1889, and continues in existence to today.

B.7.32 A few small drips and runs of solidified metal might point to limited copper alloy-working in Periods 2 (SF284, SF625) and 3 (SF218, SF114), but they provide insufficient evidence for further speculation.

B.7.33 As with any copper alloy assemblage, many fragments remain unidentifiable. Others are small fragments of sheet metal, some cut into strips, or triangles and presumably offcuts from use in some other purpose. Further description of these items can be found in the site archive.

The lead and pewter

B.7.34 The site produced a small assemblage of lead, in all, 27 fragments weighing 1.148g, and representing probably 24 objects, plus a large number of small amorphous drips (not quantified, but included by weight). Condition varied, but was generally good. Lead was only recovered from contexts assigned to Periods 2 and 3, with its complete absence from Period 4 being surprising, if not an artefact of systematic collection for recycling at that time, or the on-site collection policy. Apart from the large numbers of small drips from Period 3 layer 573 and pit **574**, both on Plot 10, there were no particular concentrations of finds.

Period	Weight (g)
2	150
3	727
US	541
Total	*1418*

Table B.7.2: *Lead and pewter finds*

Period 2

B.7.35 Very few of the lead fragments associated with Period 2 were from recognisable objects. The material appeared, for the most part, to derive from the day-to-day use of lead within buildings. Most obvious of these were two small fragments of milled lead came (SF543) from pit **3574** on Plot 2. Although milled came was first produced in the 14th century (Knight 1985), the deep H-section of these fragments (Knight's type G; King 1987, fig. 35) indicates a post-medieval date. It is possible that SF189, a fragment of cast strip from pit **1868** (fill 1717) at the front of Plot 5, was also intended to be used to produce came.

B.7.36 Three cut fragments of sheet (SF170, SF259, SF364), from the fill (1684) of boundary ditch **1683** at the front of Plot 1, the fill (2098) of pit **2096** at the front of Plot 6, and the fill (1941) of pit **1940** in the same vicinity, are most likely to be offcuts generated by the use of sheet lead in construction, as are the three small rolls of sheet (SF183), one of them chisel-cut, from the fill of pit **1794** (1796), to the front of Plot 5.

B.7.37 Only one object from Period 2 can be associated with daily life. A small cast plug (SF569) of a type commonly used to repair ceramic vessels, came from a fill (3643) of

well **3388** at the rear of Plot 2. Although a small fragment of pottery remains visible within the plug, it cannot be characterised, and does not contribute towards dating.

Period 3

B.7.38 The range of lead objects from Period 3 is broadly similar, deriving mainly from the structural use of lead. Short fragments of thin milled sheet (SF135 and SF205) from cellar **1906** (fill 1907) on Plot 12 and pit **985** (fill 983) on Plot 13, if not window came *per se*, must be closely associated. Twisted and folded fragments of twisted strip from floor **1285** (SF110, Plot 9) and levelling layer 422 (SF24; Plot 10), and sheet from layer 810 (SF42, Plot 13) are most likely to be offcuts, and solidified drips of melted metal come from pit **473** (fill 471, SF452), and pit **474** (SF52 from fill 576 and SF453 from fill 577), both at the front of Plot 10, and cellar fill **1907** (SF204, Plot 12). An oddly-shaped annular fragment (SF369) from pit **2612** (fill 2614) at the front of Plot 14, could also have been formed by a spill of molten metal.

B.7.39 A single heavily corroded pan weight (140g = *c*.5oz) came from the fill (1907) of cellar **1906** on Plot 12, and two almost identical, but unidentifiable, objects, both heavy lunate objects (134g = 4.7oz) with a small knob on their upper surfaces (SF428, SF429) and presumably weights or lids of some kind, came from levelling layer 3024 on Plot 33.

B.7.40 Unstratified finds comprise a plain oval label (SF18), a roughly cast conical weight (SF99), weighing approximately one pound (438g = 15.45oz), and a bale seal (**1**), identifying the contents as Russian flax, with an inspection date of 1817.

B.7.41 Now crushed, a small, flaring, half-round vessel, likely to be of pewter, was found unstratified (**2**). It has been identified as a food or water container from a bird or small animal cage. See, for instance Egan (2005, fig. 124.617), where the type is given a date of late 15th/early 16th to late 17th century, at the latest. Although undoubtedly common when in use, with a considerable number known from the Thames in London and several recorded in the PAS database (see for instance SUR-F2EC81; SUR-E84588), elsewhere these are relatively uncommon finds.

1, Russian flax bale seal. Good condition, almost complete. Obverse:]NP * Reverse: KAH,]P12H, ABALO, N26*, NP indicates the contents as flax, P probably indicates the grower, 12H the quality, and 1817 the date of inspection, SF39, unstratified

2, Semi-circular, flaring almost campanulate vessel. Undecorated. Complete but crushed, L: 53mm; W: 72mm; Ht: 21mm, SF21, unstratified

The Ironwork

B.7.42 In all, 562 fragments of ironwork were x-rayed, and the identifications given below are based on those images. None of the items were regarded as robust enough, or significant enough, to be cleaned or conserved. A full catalogue can be found in the site archive. It should be noted that the dimensions given are approximate, being derived solely from the x-ray images. Most items were from stratified contexts within Periods 2 and 3, with only a small number from Period 4, and only two were recovered unstratified. Condition varied only slightly, and was generally poor, all of the objects being obscured by ferrous corrosion products. The chronological distribution of ironwork is shown in Table B.7.3.

B.7.43 As is often the case, the majority of the ironwork is effectively undateable, being, for the most part simple and long-lived forms. Although the horseshoes offer some potential for corroborating the general dating, the ironwork is largely dated from its context, rather than *vice versa*. There was no ironwork from Period 1 contexts, and very little from

Period 4. The latter is probably, in part, an artefact of selective collection from the latest contexts on the site.

	Total	Nails			Other		
	ironwork	No frags	% total ass	% Period ass	No frags	% total ass	% Period ass
Period 1	0	0	-	-	0	-	-
Period 2	186	129	22.9	69.3	57	10.1	30.6
Period 3	357	274	48.7	76.7	83	14.7	23.2
Period 4	17	11	1.9	64.7	6		
Unstrat	2	0	-	-	2	-	-
Total	*562*	*414*	*73.6*		*148*	*26.3*	

Table B.7.3: *Distribution of ironwork from the site by period*

B.7.44 The assemblage seems to have a relatively limited range, with almost nothing standing out as diagnostic of specific activity, with most of the recognisable items deriving from structures on the site, or reaching it in material dumped from elsewhere. Particular concentrations of ironwork were unusual, with even as many as 10 objects from a single context being rare. Period 3 cellar **1906** on Plot 12, however, stands out, with well over 100 items. This echoes the concentration of other material groups in the same deposit, and presumably reflects the long-term use of the cellar for storage and/or the haphazard accumulation of unwanted items and other rubbish.

Personal Attire

B.7.45 Period 2 produced only a single possible buckle (SF514) from pit **3478** (fill 3474) to the rear of Plot 2. Only a large oval loop survives, and as a consequence it cannot be dated with any precision.

B.7.46 Object **1**, from Period 3 layer 494 on Plot 10, is a complete D-shaped buckle comparable with late 13th- to mid-14th century examples from London (see especially Egan and Pritchard 1991, no. 397). Iron buckles seldom reflect changes in fashion and in decoration, and are thus considerably less easy to date with precision, but **2** and **3** would not be out of place in the large group of later 17th- and 18th-century objects seen in cellar **1906** (Plot 12) and pit **1424** (Plot 9). It should be borne in mind that the larger iron examples, being somewhat utilitarian, could equally derive from horse harness.

1, Small D-shaped buckle with pin intact. X-r K16/470, L: 28mm; W: 26mm, SF27, layer 494, Period 2

2, Large rectangular roller buckle, part of pin remains. X-ray suggests a sheet cylinder or roller. X-r K16/482, L: 61mm; W: 48mm, SF149, fill 1907 (cellar **1906**), Period 3

3, Oval buckle loop, possibly tinned? Broken and deformed. X-r K16/477, L: 52mm; W: 23mm, SF333, fill 2348 (cess pit **1424**), Period 3

Domestic Items

B.7.47 Although a number of blade fragments and parts of handles were found in both Period 2 and Period 3 contexts, none was particularly well preserved (see also worked bone for handles).

B.7.48 Blade fragments came from Period 2 pits **1853** (fill 1843, to the rear of Plot 8; SF269), and **1940** (fill 1968 to the front of Plot 8; SF227) and well 3293 (fill 3297, to the rear of Plot 7; SF499). Recognised by their distinctive triangular cross-section, seen in breaks, they were in such poor condition that x-ray did not elucidate their form. Fragment SF352, also from pit **1940** (fill 2063), appears to be part of the tang of a scale-tanged blade, a method of hafting popular in the later medieval period (Moore 1995). X-ray shows SF274, again from pit **1940** (fill 1941) to be a highly corroded (?)bone plate with

copper alloy rivets. Whilst narrow (only 8mm wide), it could derive from a late medieval or early post-medieval scale-tang blade, but equally could derive from a composite object, perhaps a comb.

B.7.49 Object **4**, from a fill (2149) of Period 3 pit **1424** on Plot 9, appears to be a complete late medieval or Tudor eating knife, with a long, narrow, tapering blade and bone handle plates secured with copper alloy pins. It finds broad parallels in 15th-century material from London (Cowgill *et al.* 1987) and also in 16th-century examples from the city (Egan 2005), and elsewhere (Moore 1999).

B.7.50 Other, less complete, blade fragments came from a range of Period 3 contexts; pit **1424** to the front of Plot 9 (fill 2117; SF248), well **1456** to the front of Plot 11 (fill 1459; SF270), which also produced fragments of what appear to be highly corroded scale plates, with copper alloy rivets (fill 1460; SF475), boundary ditch **830** at the rear of Plot 14 (fill 732; SF68), and pit **2636** (fill 2634, to the rear of Plot 15; SF378). More fragments of what appear to be highly corroded scale plates with copper alloy rivets, came from pit **3503** on Plot 9 (fill 3505; SF522). A single possible blade fragment came from Period 4 pit **1010** (fill 1009, Plot 33).

B.7.51 Several items are associated with household security. There is a well-preserved plate lock (**5**) from Period 2 pit **3451** to the rear of Plot 3 (fill 3456; SF552). It is very similar in form to examples from medieval London (Egan 1998) and 16th or 17th-century contexts in Norwich (Goodall 1993, no. 1243) and Winchester (Goodall 1990). A second example (**6/7**) comes from Period 3 cellar fill 1907 (Plot 12), where fragments **6** and **7** are probably parts of the same mounted lock. Much of the inner detail can be seen, with **7** comprising the bolt set within oval loops, and **6** being part of the outer housing, with a keyhole clearly visible. There is also a single large rotary key (**8**) from Period 3 levelling layer 3024 (Plot 33); it is probably of Ward-Perkins (1940) type VIIB, dated to the 15th-century or later.

B.7.52 Fragments of narrow, curving iron strip (SF511) from Period 2 well **1927** (fill 3297) to the rear of Plot 7, seem likely to be from the hoops of a stave-built vessel, perhaps even a bucket.

B.7.53 A twisted bar of forged iron, some 244mm long, from Period 3 pit or well **1577** (Plot 12, fill 1584; SF128) appears to be decorative in intent, but cannot be further identified. In addition, a small and disparate group of other iron objects, probably all best regarded as household objects, came from cellar fill 1907 (Plot 12). These included chain links (SF627), a large deep cylindrical collar (SF157), a less substantial collar or ferrule (SF208), and a corner reinforcement (SF158), the flaring shape of which might suggest that it was intended to be decorative. A lid (SF207) from the same fill (1907) appears to be a modern threaded jar lid, acting as a reminder that this context also contains a range of quite recent artefacts.

4, Fine blade with ?wooden/bone handle with three ?copper alloy pins holding the scale plates in place. Blade *c*.95mm long. X-r K16/467, L: 147mm; W: 5mm, Sf 253, fill 2149 (cess pit **1424**), Period 3

5, Square plate and associated lock mechanism. Detailed image of lock and lock plate can be seen on X-ray, comprising a double-toothed bolt held by a pair of staples and other fragmentary lock components. X-r K16/485, L: 63mm; W: 63mm, SF552, fill 3456 (pit **3451**), Period 2

6, Lock plate – keyhole visible. L: 35mm; W: 40mm, SF145, cellar fill 1907, Period 3

7, Probably part of a lock, an irregular toothed bar within two oval loops, *c*.25mm apart, and *c*.20mm diameter. X-r K16/483, L: 43mm; W: 13mm, SF147, cellar fill 1907, Period 3

8, Large rotary key with kidney-shaped to oval loop, solid stem, and symmetrical bit. X-ray K16/475, L: 135mm; W: 27mm, SF430, layer 3024, Period 3

Horse gear

B.7.54 There were a number of fragmentary horseshoes from the site, with four from Period 2 contexts, and seven from Period 3. Those from Period 2 surface 1613 (Plot 5; SF134) give the appearance in x-ray of having the wavy edge associated with Clark's (1995) type 2 dated from the 11th to the mid-14th centuries. Fragments SF277, SF280, and SF516, from pits **3478** (Plot 2, fill 3474), **1940** (Plot 6, fill 1968), and **2096** (Plot 6, fill 2033) respectively, are most probably Clark's type 4, very common from the mid-14th century on. Evidence from London (Clark 1995) and elsewhere (Egan 2005) indicates that the form remained in use into the 16th and 17th centuries, which would concur with dating supplied by other classes of finds seen in Period 3 contexts. Chronologically undiagnostic horseshoe fragments were recovered from pit **1424** on Plot 9 (fill 2149, SF250; fill 2348, SF334), pit **430** on Plot 10 (546, SF75), well **1456** on Plot 11 (fill 2369, SF470), and, on Plot 12, pit **1741** (fill 1709, SF174), and foundation trench **2089**. The scarcity of horse gear might be regarded as surprising in view of the interpretation of one of the structures on Plot 12 as an inn.

Structural items

B.7.55 As is apparent from Table B.7.3, the ironwork from Period 2 was dominated by nails, and nail fragments, with 56 contexts producing at least one, but only eight producing more than five, and none more than nine, perhaps suggesting that nailed structures, furniture or fittings were rare, or the nails assiduously collected and recycled. As most were recognised from x-radiographs, it cannot be stated with complete certainty that all are hand-forged, but this seems most likely to be the case. It is clear that only a relatively small proportion could be regarded as complete, and of these, the longest were *c*.60mm from point to head. Heads ranged from *c*.8mm to *c*.12mm in diameter. A small number were bent at approximately 90 degrees, indicating that they had been clenched (having been driven through a timber, they are then bent over to secure the join). Measurements from x-ray show clenches at approximately 14mm, 34mm, 40mm, and 46mm, giving some indication of the thickness of timbers used. Very few of the Period 2 nails showed signs of being extracted from timbers intended for reuse.

B.7.56 The ironwork from Period 3 was similarly dominated by nails, which comprised almost 77% of the period assemblage. Nowhere were there large concentrations of nails with the exception of the group from cellar **1906** (fill 1907) on Plot 12, which produced in excess of 160 nails, and can be regarded as exceptional for the site. The group was noticeably fragmentary, with few appearing complete. Where complete examples survived, however, they were, with a very few exceptions, similar in size to those of the previous period. There were, however, one or two longer specimens, for example one from cellar fill 1907 (SF154) which was in excess of 105mm in length, with a head *c*.23mm in diameter. The fragmentary nature of the group has meant that there is no information with regard to clenching, or removal from timber. Interestingly x-rays showed that nails from pit **574** (fill 577) towards the frontage on Plot 10, were accompanied by a considerable amount of lead spatter, which might suggest that the ironwork had been deposited after a structural fire, intense enough to melt lead structural elements, like, for instance, flashings. The few nails associated with Period 4 contexts were little different to those of the preceding periods.

B.7.57 There were only a few other recognisable structural items. Only two were from Period 2 contexts, both of them fragments of perforated strip (SF555 from pit **3451** (fill 3454) on Plot 3 and SF344 from pit **2272** (fill 2502) on Plot 6) which could derive from hinges,

although neither is well-enough preserved for certainty. Other possible hinges came from Period 3 pit **3503** on Plot 9 (fill 3507, SF521) and cellar fill 1907 (SF146, SF148, SF155, SF158) on Plot 12. Of these, SF158, appears to be a trapezoidal plate, reminiscent of some 18th-century hinge forms (see, for instance, Alcock and Hall 1994, 24, butterfly hinges, or Egan 2005, fig. 57).

B.7.58 There were, in addition, three L-shaped pintles or wall-hooks, one from Period 2 (SF108 from well **784** (fill 1246) on Plot 3), and two from Period 3 contexts (SF79 from pit **430** (fill 546) on Plot 10, and SF156 from Plot 12 cellar fill 1907). The latter also produced a large staple or carpenter's dog (SF144), which would have been used for joining timbers. There were, in addition, two wedges from Period 3 pit **1424** on Plot 9 (SF243 from fill 1888, and SF249 from fill 2117). Whilst not strictly structural, both could have been used in splitting timbers for use.

B.7.59 Although there was only a small group of ironwork from Period 4 contexts, it seems relatively varied, and alongside the ubiquitous nails, there was a long spike (SF596), most likely to have been used within a timber structure, from pit (**628**, fill 629) on Plot 33. There was a vessel fragment (SF49) from well **931** (fill 927) on the frontage of Plot 13. Although it was not possible to be conclusive, it seems likely to be of cast rather than wrought iron, placing it firmly in the post-medieval or modern period. A second item, SF395, from backfill 2756 on Plot 33, is also clearly cast iron.

B.7.60 The remaining ironwork from the site is, despite x-ray, effectively unidentifiable, being small fragments of sheet, narrow strip, or amorphous lumps. Further details of these fragments can be found in the site archive.

B.8 Worked Stone

By Ruth Shaffrey

Summary and Quantification

B.8.1 Eighty-two pieces of stone were retained during the excavation. The objects are mostly whetstones and querns but a few other items were also found including mortars, a lamp and a rotating grindstone (Tables B.8.1–2).

Category	No.
Whetstone	52
Quern	15
Vessel	4
Other	6
Structural	2
Total	*81*

Table B.8.1: *Quantification of worked stone*

Methodology

B.8.2 The stone was catalogued, function and lithology were assigned where possible (Table B.8.2).

Description

B.8.3 The assemblage contains a significant number of whetstones (52). These can be broadly divided into three groups: Group A (schist), Group B (sandstone) and Group C (slate). The schist hones here are generally very crudely produced; many appear to have exploited unfinished pieces of schist and there are none of the finely made, pierced examples. Some of the schist pieces, although classified as whetstones for assessment purposes, do not appear to have been used or reworked. This, combined

with the crude nature of most examples, indicates that the raw material was being imported to Cambridge (as has been observed in other towns). The implication is that there may have been a whetstone-making workshop within the settlement. The vast majority of these whetstones are from medieval (Period 2) contexts.

B.8.4 Group B forms a coherent group of very well made whetstones in stark contrast to the schist examples. Small pierced examples are notable by their absence and, although the whetstones cover a fairly wide range of profiles and cross sections, they appear broadly consistent in size, being large hand-holdable stones. Chunky square-sectioned whetstones are particularly common. The sandstones exploited vary from medium to coarse grained sandstones, some being coarser grained than is typical for whetstones.

B.8.5 Group C comprises a small group of slate whetstones, perhaps better classified as touchstones. A single rotating grindstone was also recovered (SF89); these are more commonly found in urban than rural contexts, so we might have expected there to be more than one example given the number of whetstones.

B.8.6 Fifteen quern/millstone fragments were recovered, at least two of them are from millstones. A single stone is of Millstone Grit, the remainder being of Lava. Millstones were recovered from Phase 3 and 4 contexts whilst querns were also found in Phase 2 contexts. This suggests they derive from a mill of post-medieval date. It is possible that the querns and/or millstones relate to brewing, rather than flour production.

B.8.7 Four examples of vessels were recovered. These include a fragment of an octagonal lamp (comparable to a 13th-century example from Canterbury (Frere and Stow 1983, 183), but from a post-medieval context here), one definite mortar, and two possible mortars or bowls. Four other items of stone comprise two rubbed stones, one disc and one unusual dimpled stone, the function of which is not clear. These might be best viewed as processors along with one other stone (SF560). A single weight was also recovered (SF506). Two final pieces of stone, both oolitic limestone, appear to be structural.

SF No	Context	Function	Notes	Lithology
	1246	Quern	?Quern/Mill Stone Fragments	Lava
	3124	Quern	?Quern/Mill Stone Fragments	Lava
	1941	Quern	?Quern/Mill Stone Fragments.	Lava
	2033	Whetstone raw material	Raw material	Norwegian Rag schist
	2187	Possible whetstone	Worked Stone	Stone
	2197	Marble or whetstone	Worked Stone	Stone
	2249	Artefact	Worked Stone. Rubbed / concave	Sandstone
	2311	Stone	?Quern/Mill Stone Fragments	Lava
	3078	Whetstone	Unshaped raw material that is slightly worn on one face and thus probably used	Norwegian Rag
	3096	Stone	?Quern/Mill Stone Fragments.	Lava
25	455	Whetstone	Not especially shaped or worked but is well used on two flat faces	Norwegian Rag
28	546	Whetstone	Square section	Sandstone
38	99999	Whetstone	Unstratifed. Tapered end	Sandstone
40	779	Whetstone	Small whetstone, flat with one well-worn side	Norwegian Rag
41	787	Whetstone/touchstone	?Whetstone	Slate
57	779	Quern		Lava
81	1233	Mortar		Oolitic limestone
82	593	Lamp	?Stone, sooting on inner surfaces. Octagonal flat bottomed lamp	Clunch
83	1407	Vessel	?Stone Mortar Frag. Vessel	Oolitic limestone

SF No	Context	Function	Notes	Lithology
88	1449	Whetstone raw material	Not used or shaped but a whetstone raw material	Stone
89	610	Rotating grindstone		Sandstone
111	1285	Whetstone raw material	No evidence that this crude lump has been used for sharpening or shaped but it is a the raw material so may indicate manufacture	Norwegian Rag
115	75	Whetstone	Neat long example with one surviving end (rough).	Norwegian Rag
116	1457	Whetstone	Square section.	Sandstone
118	1499	Whetstone	Small neat whetstone. One original end, other damaged.	Norwegian Rag
119	1504	Whetstone	Good example of bulbous ended whetstone. One (fat) original end.	Norwegian Rag
124	1709	Whetstone	Square section.	Sandstone
125	1709	Whetstone	Good flat example. One side is flat but the stone is tapered so that the second side is pointed.	Norwegian Rag
126	1584	Quern		Lava
152	1757	Whetstone		Sandstone
153	520	Artefact	Burnt stone artefact with polished surface	Paludina limestone
161	1843	Disc	Roughly shaped disc, ?Re-used Roofing Tile	Sandstone
162	1843	Whetstone	Slightly irregular but generally rounded cross section. One probable original end, one damaged end	Norwegian Rag
163	2033	Whetstone	Square section, well-made but unusually coarse.	Coarse sandstone
164	1994	Whetstone	Square section	Coarse sandstone
165	1994	Whetstone	Square section, neat	Sandstone
166	2100	Whetstone	Roughly formed rectangular whetstone	Norwegian Rag
167	2100	Whetstone	Rounded oval section. Rough original end. Not especially shaped but probably used	Norwegian Rag
168	2100	Whetstone	Roughly triangular section, not shaped	Norwegian Rag
203	1907	Whetstone	Square section	Sandstone
221	99999	Mill Stone	Unstrat: ?Quern/Mill Stone	Lava
237	1907	Whetstone	Does not look especially well shaped but it has definitely been used as it is smooth on some sides	Norwegian Rag
239	2089	Whetstone	Square section, neat.	Sandstone, coarse
240	812	Whetstone	Long bulbous and slightly irregular whetstone. Grooves from point sharpening	Norwegian Rag
241	2089	Whetstone		Sandstone
254	2163	Quern	?Quern/Mill Stone	Lava
261	2191	Whetstone	Well used, interesting shape	Slate
287	2117	Whetstone/touchstone	?Whetstone, Pierced. Possibly a writing slate originally? Check date	Slate
292	2197	Whetstone	Worn stone, possibly natural	Stone
323	2098	Whetstone	Neat with square section.	Micaceous sandstone
324	2801	Whetstone	Very neat square section, tapered to a point.	Sandstone
335	2348	Mill Stone		Lava
339	2496	Whetstone	Rectangular form and section, Deep grooves on one face	Norwegian Rag
356	1968	Quern	?Mill Stone	Lava
358	1994	Whetstone	Oval section, unusually coarse	Coarse sandstone
363	1994	Whetstone	?Whetstone. Grooved down one side	Sandstone
371	2312	Quern	?Mill Stone	Lava
372	2311	Whetstone	Roughly triangular cross section, bulbous at one	Norwegian Rag

SF No	Context	Function	Notes	Lithology
			end	
373	2616	Whetstone	Concave faces, square section	Sandstone
380	2628	Quern	?Quern/Mill Stone	Lava
383	99999	Structural	Unstrat: Worked	Oolitic limestone
412	2774	Artefact	?Whetstone	Micaceous sandstone
421	99999	Whetstone	Rounded whetstone, bulbous	Norwegian Rag
463	2386	Quern	?Quern/Mill Stone	Lava
464	3269	Possible mortar	Small Quern Fragment	Stone
471	2197	Mill Stone	Re-used, covered in Mortar	Lava
487	3277	Whetstone	Edge fragment from a Whetstone. Not especially shaped but a little used	Norwegian Rag
500	3353	Whetstone raw material	Unshaped piece of schist. Unused or worked	Norwegian Rag
501	3353	Whetstone	Good example of a long slim whetstone	Norwegian Rag
506	3269	Weight	Worked Stone Artefact, Re-worked	Stone
507	3269	Structural	Worked Stone	Oolitic limestone
539	3502	Whetstone	Square section	Sandstone
540	3502	Whetstone	Square sectioned with flat faces and generally sharp arrises	Norwegian Rag
545	3460	Whetstone	Neat flat long whetstone. Appears to have both its original ends	Norwegian Rag
549	3460	Whetstone	Rectangular flat lump, not shaped but apparently used on one side	Norwegian Rag
550	3457	Whetstone	Small roughly shaped whetstone used along the edges	Norwegian Rag
557	3326	Mill Stone	Rynd chase	Millstone Grit
559	3643	Artefact	Dimpled both sides, interesting object needs properly recording	Clunch
560	3638	Processor		Shelly limestone
570	3460	Whetstone	Crude elongate lump that does not appear to have been shaped. However it has been used	Norwegian Rag
3212	317	Rotary quern		Lava

Table B.8.2: *Catalogue of worked stone*

B.9 Worked Bone and Miscellaneous Small Finds

By Chris Howard-Davis

B.9.1 In all, 32 fragments of worked bone or ivory, representing 27 objects, were recovered during the excavations. All but two of them were from stratified contexts, mainly pit and quarry fills. The fill (1994) of phase 4 pit **1995**, stood out in producing six objects (20% of the assemblage). Most of the items were in good condition, although the condition of several of the knife handles was clearly affected by the proximity of highly corroded ferrous blades. There were no worked bone finds from Period 1, six from Period 2, six from Period 3, and 13 from Period 4, presumably reflecting, amongst other things, the relatively recent nature of the latter.

B.9.2 The assemblage comprised a narrow range of objects, mainly knife handles, and objects concerned with personal grooming and or hygiene. Only one object could be regarded as unequivocally medieval in date, with the remainder probably spanning the post-medieval and early modern periods. Most are effectively undateable except by stratigraphic context, and for this reason have been discussed in phase rather than function groups.

Bone objects from Period 2

B.9.3 The character of the worked bone objects from Period 2 contexts is markedly different to those from the later phases, for the most part lacking the emphasis on knife handles seen in later groups. There are two plain bone pins (**1** SF343, **2** SF368) from the fill (2067) of quarry **1969**, and the fill (2311) of quarry **2318** respectively; a third example (**3** SF112) was recovered unstratified. All three are carefully trimmed, have a flat, undecorated top, and show some polish from use on their shafts. They are effectively undateable, as is needle **4** (SF336), from the fill (2440) of pit **2447**, but as long-lived types, are probably contemporary with the contexts from which they were recovered.

B.9.4 Item **5** (SF502), from quarry **3354** (fill 3353) is a long tapering object with a small perforation in the surviving, rounded end. Its purpose is not obvious.

B.9.5 Two items from this phase could be seen as having broadly ecclesiastical connections. A finely-turned spherical-headed pin (**6** SF338) from a fill (2487) of quarry **2486**, has been identified as a so-called 'parchment pricker' or more likely, stylus (MacGregor 1985), of medieval type. Although not exclusively ecclesiastical in origin, these are significantly more common on religious sites, and, given the site's close connection with the Augustinian Canons of Barnwell, it seems reasonable to suggest its ultimate origin in the Priory. It must be noted, however, that these items seem to have remained in use well into the post-medieval period (Riddler 1998; Howard-Davis 2008, 414). A small, and markedly asymmetrical biconical bead (**7** SF583) from well **2412** (fill 3129) has a noticeably high gloss. In general terms, necklaces were not fashionable in the medieval period (Margeson 1993, 5) and it is suggested that at this date beads are more likely to have come from rosaries. Bone beads were often used in them (Gottshall 2008), and though not conclusive, it would seem reasonable to suggest that the very noticeable wear-polish is a result of the repeated handling required of a rosary.

B.9.6 Finally there is an ivory knife handle (**8** SF236) from pit **2059**, assigned to this phase. Square-sectioned, and intended to seat a whittle-tanged blade (now absent); it came from pit **2059** (fill 2054). The form of the handle suggests a 19th-century or later date (Moore 1995, 28), raising the likelihood that this item is, in fact, intrusive. In addition, it bears a strong resemblance to an example from Period 4 (SF300).

1, Carefully trimmed, tapering bone point, L: 97mm; W: 7mm; Th: 5.5mm, SF343, fill 2067 (quarry **1969**), Period 2

2, Carefully trimmed, tapering bone point, L: 102mm; Diam: 8mm, SF368, fill 2311 (quarry **2318**), Period 2

3, Carefully trimmed, tapering bone point, L: 103mm; W: 4mm; Th: 4.5mm, SF112, unstratified

4, Flat-headed pin or needle made from pig fibula, with elongated sub-rectangular perforation on the carefully-trimmed head, L: 134mm; W: 11.5mm; Th: 3mm, SF336, fill 2440 (pit **2447**), Period 2

5, Long narrow tapering object. One end missing. Roughly-made, with much cancellous tissue visible, but polished from use. The surviving end is rounded, with a single perforation, *c*.3mm in diameter. L: 125mm; W: 17mm; Th: 7mm. SF502, fill 3353 (quarry **3354**), Period 2

6, Parchment pricker or stylus, point broken. Thick, turned shaft with spherical head above a narrow bead, L: 80mm; Diam: 7mm, SF338, fill 2487 (quarry **2486**), Period 2

7, Irregularly-made bone bead with biconical cross-section and asymmetrically-placed perforation. Very high polish, Diam: 6mm; Ht: 5mm; Diam perf: 4mm, SF583, Fill 3129 (well **2412**), Period 2

8, Square-sectioned knife handle seated for bolstered blade. Probably ivory. Poor condition, end missing, blade absent, L: 68mm; W: 18mm; Th: 8.5mm, SF236, Fill 2054 (pit **2059**), Period 2

Bone objects from Period 3

B.9.7 Items associated with personal appearance appear for the first time during this phase, albeit represented only by a small fragment from a one-piece double-sided comb (**9** SF235). Probably made from ivory and thus probably an expensive item, it has been trimmed to serve as a single-sided comb, presumably after breakage of some of the finer teeth, and would have been used to dress natural hair or, in the 18th century, the elaborate wigs fashionable at that time (White 2005). A similarly modified example can be seen amongst late material from Colchester (Crummy 1988, no 1851). This is the dominant comb form from the late medieval period onwards (MacGregor 1985); and this example, from Period 3 cellar **2061** (fill 2028), would seem to contribute towards dating the construction of the 'inn'.

B.9.8 A small bone die (**10** SF628) came from quarry **2096** (fill 2333). It has the traditional arrangement of pips, with opposite sides totalling seven (MacGregor 1985). Such dice have been in use for games of chance, effectively unchanged, since the Roman period. A somewhat damaged pierced metapodial (**11** SF107) came from pit **1288** (fill 1287). The purpose of these items remains uncertain, and they have been described as toggles, bobbins, and 'buzz-bones' intended as a noise-making plaything. The latter interpretation, suggested by MacGregor (1985) and by Margeson (1993, 215), can be backed by a number of ethnographic parallels.

B.9.9 The remaining worked bone objects from Phase 3 are all handles; **12** (SF58), from floor 433, is roughly made from a sawn longbone, and clearly-defined file marks over much of the surface might suggest it to be unfinished, and **13** (SF599), from cellar deposit 2473, is probably the remains of a relatively insubstantial folding knife with only the very thin scales now recognisable, the blades now surviving only as a corroded mass.

B.9.10 Handle **14** (SF600), somewhat poorly preserved, is also from a scale-tanged blade, the scales fixed by two rivets. Like folding knife **13**, it was found in cellar deposit 2473. In general terms, scale-tanged knives became popular in the 14th century, continuing well into the post-medieval period (see for instance Egan 2005). Without an indication of the form of the blade, these simple handles are effectively impossible to date, but would seem to precede the 18th century.

9, Comb, originally double-sided but now modified to be used as a single-sided comb. The fine teeth have all been broken or cut off. The surviving coarse teeth are spaced at four per centimetre, L: 33mm; WL 45mm; Th: 3.5m, SF235, fill 2028 (wall 2028), Period 3

10, Small, carefully-made die, L: 7mm; W: 7mm; Ht: 7mm, SF628, fill 2333 (Quarry 2096), Period 3

11, Toggle made from perforated pig metapodial. Perforation c 4mm. Broken mid-shaft, with one epiphysis missing, L: 54mm; Max w: 17mm, SF107, fill 1287 (pit **1288**), Period 3

12, Roughly-made handle, cut from long bone. Surfaces faceted from extensive trimming and, in many places, file marks survive, giving the impression that the handle is unfinished, L: 63mm; W: 35mm; Th: 30mm, SF58, floor 433, Period 3

13, Very corroded penknife/folding knife, with the blades surviving but now corroded beyond recognition. The bone scales are very thin (*c*.1.5mm), cut square at one end and with bevelled corners at the other. Both are held in place with two rivets. The square-cut end probably indicates the position of the hinge for the blade or blades, L: 65mm; W: 14mm; Th: 11mm, SF599, cellar deposit 2473, Period 3

14, Bone handle and part of very poorly preserved scale-tang blade (now detached). Scale plates are held in place with two or more rivets, L: 165mm; W: 20mm; Th scale: 5mm, SF600, cellar deposit 2473, Period 3

Bone objects from Period 4

B.9.11 Most of the worked bone finds can be assigned to Period 4, which produced a slightly wider range of object types than earlier phases, although again, many of them are simple handles for blades.

B.9.12 Two came from pit **1995** (**15** F22, **16** SF360). Handle **15** is a fragmentary example of the pistol-grip type, popular from the later 17th century to the 1770s (Moore 1995), but appearing, on occasion, in 16th-century contexts (Hinton 1990b, fig. 261, no. 2902). The latter, more utilitarian, is a scale-tang blade, again probably of early post-medieval type.

B.9.13 A third plain, rectangular-sectioned example probably intended for a bolstered blade, the seating for the tang part-filled with lead (**17** SF300) was from pit **2327** (fill 2324) and is likely to be of later date, being similar to **8** (probably intrusive in Period 2). The purpose of **18** (SF385), a fragment of cut and polished bone from pit **2494** (fill 2495) remains unknown, although its use as a handle is not impossible.

B.9.14 There was a single pin or needle (**19** SF391), roughly trimmed from a ?pig fibula (the head is missing) which came from 2496, associated with the disuse of quarry **1940**. Such simple pins have an extremely long currency, and in consequence, it cannot be dated.

B.9.15 Object **20** (SF384), from pit **2735** (fill 2736) can be identified as a pin or needle case, used to store and protect metal needles. These are known at all periods from the early medieval onwards, but little is known of their typological development (Beaudry 2006). This particular example seems likely to be of 18th- or 19th-century date. Such items were personal possessions found within a sewing kit (*ibid*).

B.9.16 There are surprisingly few bone buttons (although there are two of Mother of Pearl and a number of copper alloy examples). Two (**21** SF348, **22** SF362), both from pit **1995** (fill 1994) are of the 'one-hole button mould' type, used as a former for stamped metal or fabric buttons (White 2005, 69) and in use by the 18th century, see, for instance examples from Portchester Castle (Cunliffe and Garratt 1994, fig. 29). A third button (**23** SF601) is a four-hole sew-through type with a raised bead at the edge, and probably of similar date, although Margeson (1993) suggest that they might appear in Norwich in the late 17th century.

B.9.17 There was also a small and highly decorative point (**24** SF414) from pit **2494** (fill 2495). Its purpose is not clear, though use as pointer intended as an aid to reading can be ruled out. It seems too short to be a hairpin, or associated with dress, but it is clearly intended for display. Its size, and the wear at the point might suggest a more prosaic use, as a toothpick. Bone toothpicks, however, were often juxtaposed with an ear scoop, or intended to be suspended in sets, but neither is the case with this example. A Tudor or Stuart date might seem appropriate, with bone ear scoops from the Mary Rose wreck having broadly similar decoration (see https://museumcrush.org/eleven-tudor-treasures-recovered-from-the-wreck-of-the-mary-rose/)

B.9.18 Pit **1995** also produced the back of a small bone brush (**25** SF262), with some of the organic bristles, now carbonised, surviving. Bone brushes appear in the early post-medieval period and continue in production into the 20th century (McGregor 1985), with bone and bristle tooth brushes remaining in production until 1947 (Mattick 2010). There

is no detailed chronology yet available for bone brushes other than toothbrushes, but a similar example was amongst those seen in 18th-century deposits at Norton Priory in Cheshire (Howard-Davis 2008, fig. 288.11).

B.9.19 Finally, pits **1995** (fill 1994) and **2494** (fill 2495) both produced small bone domino pieces (**26** SF346, **27** SF413), clearly from different sets. The game of dominoes is Chinese in origin, appearing in Britain towards the end of the 18th century (Kelley 1999, 13; Brown 1990, 697), and has been popular ever since. Many early domino sets were made by French prisoners of war during the Napoleonic wars (Cunliffe and Garratt 1994). A single domino from the Mary Rose (sunk 1549) has raised the possibility that the game reached England at an earlier date, although this is challenged by others (Bass 2004).

15, Small pistol-grip type handle, the full length of the handle is now lost. Highly polished, presumably from use, L: 66mm; W: 15mm; Th: 9mm, SF322, fill 1994 (pit **1995**), Period 4

16, Plain scale tang knife handle with three small rivets. Poorly preserved fragment of knife tang survives, L: 84.5mm; W: 21mm; Th: 6.5mm, SF360, fill 1994 (pit **1995**), Period 4

17, Plain, square-sectioned handle seated for bolstered blade, one side broken away, showing the perforation to be part-filled with lead. Probably ivory, L: 92mm; W: 17mm; Th: 8mm, SF300, fill 2324 (pit **2327**), Period 4

18, Fragment of cut and polished bone, L: 63.5mm; W: 20mm; Th: 11mm, SF385, fill 2495 (pit **2494**), Period 4

19, Pin or needle roughly trimmed down from a ?pig fibula. The head is broken across and missing, L: 86mm; Max w: 10mm; Max th: 4mm, SF391, fill 2496 (pit **1940**), Period 4

20, Tapering lathe-turned tube, screw-threaded at the wider end. There is a single engraved groove marking the shoulder below the screw thread, and a second at the opposing end, below this, the terminal is missing. The cap or lid is missing. Carefully turned, but otherwise undecorated. Good condition, incomplete, L: 56mm; Max diam: 7mm, Int diam: 3.5mm, SF384, fill 2736 (pit **2735**), Period 4

21, One-hole button, now fragmentary and in four pieces. Probably burnt, Diam: 16mm; Th: 1mm; Int diam: 2.5mm, SF348, fill 1994 (pit **1995**), Period 4

22, One-hole button, complete, Diam: 19.2mm; Th: 1mm; Int diam: 2mm, SF362, fill 1994 (pit **1995**), Phase 4

23, Four-hole sew-through button with raised bead at edge, Diam: 18.8mm; Th: 2mm; Diam perfs: 2mm, SF601, backfill 2756, Period 4

24, Delicate, ornately-decorated pin or pointer. Mainly square-sectioned, with a broadly baluster-shape, with and incised square motif on the top. Mainly square sectioned, but decoration continues down the point as a spiral, suggesting that it was not intended to be used as a dress pin. Some use polish on point. L: 54mm; W: 5mm; W; 5mm, SF414, fill 2495 (pit **2494**), Period 4

25, Small brush plate with perforated diamond-shaped handle at one end. There are five rows of bristles, an outer row, encircling the brush (diam 1.5mm) and three rows of larger holes within (3mm). The upper surface is grooved to accommodate the copper wire used to fix the bristles, the bone being stained green. Some ?carbonised bristles remain. L: 83mm; W: 19mm; Th: 5mm, Sf 262, fill 1994 (pit **1995**), Period 4

26, Small, carefully-made domino tile (3/0). All surfaces show fine file marks. L: 27mm; W: 12.5mm; Th: 4.5mm, SF346, fill 1994 (pit **1995**), Period 4

27, Small domino tile (3/3), trapezoidal and inexpertly made, with one edge slightly bevelled as a result of the natural contour of the bone. Drilled depressions vary in size. Some filing marks on both surfaces, L: 31mm; W: 15mm; Th: 3mm, SF413, fill 2495 (pit **2494**), Period 4

Unstratified

B.9.20 A well-made, plain bone or (less likely) ivory handle (**28** SF598) was recovered unstratified.

28, Plain bone or ivory handle intended for a whittle-tanged blade. The handle is round in section where the tang enters, but flattened oval elsewhere, with a slightly concave end. Now split longitudinally, L: 91mm; W: 21mm; Th: 13mm, SF598, unstratified

Miscellaneous small finds in other materials

B.9.21 In addition to the metalwork and bone finds already described, there was a small and disparate group in other materials. All were from Period 4 contexts, but otherwise they have little in common, except that most seem to be personal items. Modern material is not discussed.

B.9.22 There is a single ceramic wig-curler, of 18th-century type (SF347), from pit **1995** (fill 1994), which also produced a range of 18th-century bone items. The rounded dumb-bell shape, with indented ends, suggests a date *c.*1730 (Le Cheminant 1978, fig. 1, no. 8). A small ceramic sphere, resembling a late 19th-century bottle stopper, came from cess pit **2199** (fill 2197). It appears to have been painted yellow with brown spots, possibly to imitate a glass marble.

B.9.23 There is a single black glass button (SF409) from the fill (2657) of quarry **2747**. Although black glass buttons were in use in Britain from the late 17th century, this example, having an inset copper alloy loop, is most likely to be of 19th-century date, probably after the invention of press-moulding in *c.*1830, which allowed large-scale production (Tallis and Strutt 2011, 173). It reflects the Victorian popularity of decorative buttons, with cheap black glass widely used to imitate jet (Meredith and Meredith 2012), and was popular for mourning attire. The popularity of black glass buttons peaked with the death of Prince Albert in 1861, but entered a rapid decline from *c.*1880 (Knight 2016).

B.9.24 Cess pit **2199** (fill 2197) and layer 2790 both produced single Mother of Pearl buttons (no SF no's). Both are sew-through buttons, one with two holes, the other with four. Products of a cottage industry, pearl buttons were generally made in the Birmingham area (Tallis and Strutt 2011, 173), from imported shell. These buttons appeared in Britain in the 18th century, and have continued in production and use more or less to the present day.

B.9.25 A cracked and twisted fragment of a hard but brittle red material has been tentatively identified as sealing wax (no SF no.). It was from the fill (2724) of pit **2722**. A single small fragment from a slate pencil (SF420) was found unstratified.

B.10 Worked Wood

By Chris Howard-Davis

Quantification

B.10.1 In all, 20 fragments of worked or potentially worked wood were examined. All of the items were from stratified contexts. Most were in fair to good condition, but with the exception of object 35, were incomplete.

Methodology

B.10.2 As the items were extremely fragile and in need of conservation, in order to facilitate rapid conservation as recommended by Historic England Guidelines (2012, 7) this assessment was undertaken from photographs and measured drawings of the items.

These were used to assign a preliminary identification and, where possible, date range. An outline database was created, using Microsoft Access 2000 format, and the data recorded (context, small finds number, material, category, type, quantity, condition, completeness, maximum dimensions, outline identification, brief description, and broad date) serve as the basis for the comments below. The state of preservation (condition) was assessed on a broad four-point system (namely poor, fair, good, excellent).

Date Range and Distribution

B.10.3 The assemblage comprised a narrow range of objects, predominantly fragments of structural wood, but including two turned dishes or bowls and a large paddle-like object. None of the objects could be dated, except from their stratigraphic context and other classes of finds found in association.

Discussion

B.10.4 The assemblage (Table 6.10.1) is discussed, for convenience, in functionally associated groups. Where individual items are discussed, they are identified by their 'wood ID' number. Not all items were available, and wood numbers 3, 5, 6, 7, 11, 12, 15, 16, 17, 21, 22, 25, 27, 31, 33, 35, 36, 37 (Figs B.10.1 to B.10.5) and 38, were assessed.

Wood id	Context	Cut	SF No	Description	worked?	Fig
1	3292	1927	491	18cm long – piece of wood from branch?	No	
2	3293	1927	492	3 x poorly preserved pieces	?	
3	3294	1927	494	fragment of lathe-turned bowl	yes	B.10.1
4	3295	1927	495	4x poorly preserved pieces.2 twigs	no	
5	3295	1927	496	thin fragment, slight curve – part of barrel?	poss	B.10.1
6	3217	3215	497	26cm long, squared-off thin plank 3cm x 1.5cm	yes	B.10.1
7	3253	1939	489	8.5cm long, sharpened to a point – awl?	yes	B.10.1
8	3294	1927		twig	no	B.10.1
9	3267	2554		2x twigs, 5 x fragments of decaying wood	?	
10	3213	2554		3 x poorly preserved pieces	?	
11	3294	1927	508	part of ?plank with wooden peg	yes	B.10.2
12	3294	1927	509	tenon with peg	yes	B.10.2
13	3294	1927		2x twigs, 4 x fragments of decaying wood	?	
14	3292	1927		6 fragments; some may be from a plank	?	
15	3295	1927	561	branch with pointed end. No tool marks but obv worked	yes	B.10.2
16	3296	1927	562	plank fragment with intact nail	yes	B.10.2
17	3296	1927		piece of plank	yes	B.10.3
18	3297	1927		possibly shaped fragment of ?plank	poss	
19	3297	1927		1x twigs, 2 x fragments of decaying wood	No	
20	3296	1927		5 x indet fragments	No	
21	3297	1927	510	turned bowl base (with partial sides). Large Fe obj attached along with bird bone	yes	B.10.1
22	3296	1927	512	turned handle of ?knife. Fe tang and small protrusion	yes	B.10.3
23	3291	1927		6x fragments – some from a plank	yes	
24	3293	1927		branch, possibly cut	poss	
25	3266	2554	563	two small, thin planks joined with wooden peg	yes	B.10.3
26	3266	2554		10 x wood fragments including twigs	no	
27	3297	1927		stave?	yes	B.10.3
28	3269	2554		plank fragment	yes	
29	3269	2554		4x thin plank fragments	yes	
30	3269	2554		9 x branches/twigs	no	
31	3295	1927	564	long plank with 4 holes and 3 part holes	yes	B.10.4
32	3295	1927	565	plank, narrowing at end with two small holes	yes	

Wood id	Context	Cut	SF No	Description	worked?	Fig
33	3295	1927		branch	no	B.10.4
34	3295	1927		small part of plank	yes	
35	3297	1927	566	paddle with notched handle	yes	B.10.5
36	3295	1927	567	plank with three Fe nails	yes	B.10.5
37	3295	1927		branch	no	B.10.4
38	3295	1927		large branch with Fe nail in one end and a transverse plank attached	yes	
39	3269	2554		very decayed branch in four parts – 2 in bag and 2 pieces on plank support	no	

Table B.10.1: *Worked wood*

B.10.5 Domestic life, in the form of evidence for eating and drinking, was represented by fragments of two turned wooden bowls (no's 3 and 21; Fig. B.10.1). Although well-known, and without doubt in use over a very long period, wooden bowls are not frequently found. There seem to be no particularly sensitive typological features, and these two, one with a simple upright rim, the other with an out-turned brim, could be of any date, but are perhaps more likely to be later medieval or early post-medieval.

B.10.6 A single knife handle, with the remnant of its iron blade (no. 22) was also noted (Fig. B.10.3). The style, probably with a whittle tang blade, though not particularly chronologically sensitive, would seem to reflect that of bone handles from the site, pointing to a possible 17th-century date.

B.10.7 The identification of no. 35 (Fig B.10.5) is not certain, whilst clearly a paddle, beater or bat, between 0.5–0.6m in length, its purpose or use is not clear. One obvious use is as a stirrer in large cooking vessel, or perhaps in cheese-making. Butter paddles are usually considerably smaller. Similar objects could have been used in the processing of flax (Earwood 1993), or its size, and strong resemblance to early examples, raises the possibility that it is in fact, a cricket bat. The game was in existence from the 1620s, and the spliced handle typical of modern examples was not introduced until the 1830s.

B.10.8 Two large fragments from Phase 2 well **1927** (fill 3295; no's 31 and 36; SF564, SF567) (Figs B.10.4 and B.10.5), both tangentially-cut or split planks, are clearly from a structure of some kind. No. 31 has a series of peg holes, whilst no. 36 is otherwise unmodified.

B.10.9 No. 12, although small, is one element of a pegged lap joint and no. 11, although now largely featureless, also retains evidence for the use of pegs (Fig B.10.2). Object 25 is also pegged, with the peg joining two thin laths (Fig. B.10.3). Object 16 (Fig B.10.2) is also pegged, but little remains of the original object.

B.10.10 A small split fragment (no. 7b) seems likely to be a barrel or tub stave, but diagnostic features are now missing. Other fragments include pegs or roughly cut stakes (*e.g.* no. 15, no. 27), the former cut from small-diameter roundwood.

B.11 Glass

By Carole Fletcher

Introduction

B.11.1 Archaeological works produced a moderate assemblage of glass weighing 35.041kg, a total of 940 individual shards from 122 contexts, recovered from 83 features and 27 layers. The bulk of the assemblage is vessel glass, minimum number of vessels (MNV) of 267, the majority of which are utility bottles, mostly natural black or green glass wine bottles, although one wide-mouthed squat cylinder bottle, used for preserving or

storage, was recovered from cellar **2474**. A number of pharmaceutical bottles, phials, Codd-type and Hamilton-type bottles were also recovered. A small collection of drinking vessels was recovered from six features and a single layer; the majority of the drinking vessels were recovered from cellar **2474** and pit **2735**. The drinking vessels present are mainly 18th- and 19th-century tumblers and stemware vessels, however, shards from a 17th century Venetian-style glass cylindrical beaker with optic-blown mesh decoration were recovered from cellar **2061**. The Venetian-style glass beaker is the earliest vessel glass recovered from the excavation.

B.11.2 A few shards of medieval window glass were also recovered from the excavation, and a single fragment of painted medieval window glass (SF622), was recovered from pit **204**. The painted glass design has not been identified. All the remainder of the medieval glass shards are abraded, in poor condition, and not closely datable beyond a broad medieval date. There are also examples of later window glass, including large shards of bullseye or bullion glass from layer 2937 and pit **3597**. This type of glass (bullseye) is from the centre of a large circular sheet of glass, known as crown glass and widely manufactured until the 19th century. The crown was cut into panes or quarries, which were diamond-shaped or square, with the bullion, including its pontil mark, being left at the end of the process. Some fragments of window glass from various contexts show evidence of having been leaded.

B.11.3 Some of the glass recovered from cellar **1906**, context 1907, has been exposed to considerable heat, enough to cause distortion and devitrification, suggesting a high temperature fire. This may be evidence of the fire that, in 1731, destroyed 50 dwellings in the village of Barnwell.

B.11.4 The most unusual find was from pit **2199**, context 2197, from which were recovered fragments of fine, hollow tubes of glass used in lamp-working to produce glass baubles. No other evidence of glassworking was recovered from the assemblage and this material may relate to craft working.

Methodology

B.11.5 The glass was scanned and catalogued, weighed and recorded, as individual vessels where possible. The assemblage is, in part, a sample of the contexts that produced the larger glass collections. Due to the fragmentary and sharp nature of glass bottle body shards, and the health and safety requirements with cleaning and storage, the decision was taken not to recover undiagnostic body shards from those contexts producing significant numbers of base and/or rim-lip shards. This has probably reduced the apparent MNV recovered for a limited number of contexts, by a small percentage.

B.11.6 The glass that is not closely datable may be dated by association with the pottery and other material with which it was often found (see Anderson and Fletcher, and Fletcher, Sections B1 and B2 above). All dates given for the periods are those assigned by the excavator. The terminology used in the report and the catalogue, for the various glass forms is taken from Haynes (1970), Van den Bossche (2001), Noel Hume (1969), Jones and Sullivan (1989), and Willmott (2002).

The Assemblage

Period 2 (c.1200–1538)

B.11.7 Glass was only recovered from 12 contexts of this period during this excavation, of which two shards were recovered from levelling contexts and neither is closely datable. The remainder were recovered from pits and a single ditch, spread across five plots, each feature produced only one or two shards of glass and they are therefore

summarily recorded in Table B.11.1 rather than discussed as individual features (a full catalogue by context number is available in the archive).

Plot	Cut	Type	Context	Type	Form-description	Colour	MNV	Date
3	**2289**	Ditch	2290	Vessel	Utility bottle (wine)	Olive green	1	19th-20th century
3	**3451**	Pit	3455	Vessel	Uncertain	Opaque, colour could not be established	1	Not closely datable
5		Layer	1612	Vessel	Uncertain	Blue-green	1	Not closely datable
5	**1621**	Pit	1619	Vessel	Utility bottle	Colourless	1	19th-20th-century
5	**2377**	Pit	2375	Window		Blue-green cast		Not closely datable
6		Layer	1614	Vessel	Utility bottle	Opaque, colour could not be established	1	Not closely datable
6	**2318**	Pit	2309	Vessel	Utility bottle	Blue-green	1	19th-20th-century
6	**2482**	Pit	2484	Vessel	Uncertain	Opaque, colour could not be established	1	Not closely datable
6	**2482**	Pit	2484	Window	Crown or cylinder glass	Opaque, colour could not be established	0	Medieval
6	**2486**	Pit	2493	Window		Greenish cast	0	Not closely datable
7	**1621**	Pit	1619	Window		Colourless	0	19th-20th-century
7	**2040**	Pit	2041	Window	Crown or cylinder glass	Opaque, colour could not be established	0	Medieval
8	**1650**	Pit	1651	Vessel	Pharmaceutical bottle (embossed)	Near colourless	1	19th-20th-century
8	**1783**	Pit	1784	Window	Crown or cylinder glass	Opaque, colour could not be established	0	Medieval

Table B.11.1: *Period 2 glass*

B.11.8 Of the glass recovered from these medieval features, four shards are intrusive 19th-20th-century glass and five shards could not be closely dated. Several were completely opaque, but are more likely to be late 16th or 17th century. The remainder of the glass is probably medieval window glass, which, although now opaque, is likely to be English Forest or potash glass and originally clear.

B.11.9 No glass was recovered from this period at Intercell House and no definitively medieval glass was recovered from any other period at Intercell House. Although little medieval glass was identified in the Eastern Gate Hotel excavation, some was recorded. A single fragment of medieval window glass was recovered from F.337, and the description of the window glass from well F.154, including a possible painted shard, also suggests a medieval date, although the report suggests they are likely to be early post-medieval (Herring and Cessford 2013, 82–3). It is very probable that these small fragments of possible medieval glass from both sites may have their origins in the buildings relating to Barnwell Priory, and were removed and relocated during the lifetime of the priory or were removed, relocated or destroyed during the Dissolution. Other small shards of medieval glass were recovered as a residual element from Period 3 features.

Period 3 (c.1538-c.1800) and Period 4 (c.1800 to present) general comparison with the Eastern Gate Hotel assemblage and Intercell House.

B.11.10 The Harvest Way assemblage, excluding the material recorded previously for Period 2, consists of a minimum of 250 individual vessels, of which approximately 80% are utility bottles for food or drink, the bulk of which are probably wine bottles and approximately 3% (MNV 7) of which are sparkling water or soda water bottles, including Hamilton- and Codd-types. The remaining vessel assemblage consists of, among other things, 26 drinking glasses (of which 16 are stemware), one decanter handle, 22 short-necked bottle or phials, bottles thought to be pharmaceutical related either due to their shape or contents, two perfume bottles, one bowl, one bowl or lid, one Codd-type bottle marble stopper, a glass/crystal pendant from a chandelier and six miscellaneous

vessels. By comparison, Intercell House produced in total only 60 individual vessels the majority of which were 19th-century bottles (counts are approximate as MNV was not recorded for the Intercell House assemblage). The Harvest Way excavation also produced 292 shards of window glass, and 16 shards of glass that could not be assigned a form. The assemblage also included 207 (0.078kg) pieces of lampworking debris.

B.11.11 The excavations at the Eastern Gate Hotel site, adjacent to the Harvest Way excavation, produced an assemblage that spans Harvest Way's Period 3 and 4, and is summarised by Herring and Cessford thusly: 'a minimum of 316 individual vessels, of which 88.6% are utility bottles for food/drink, the remaining 11.4% representing 7 drinking glasses, 24 pharmaceutical bottles, 2 perfume bottles, 2 ink bottles and a single vase/bowl. The remainder of the collection is made up of 15 window glass fragments and a single piece of cullet' (Herring and Cessford 2013, 78).

Glass by Plot in Periods 3 and 4

B.11.12 The distribution of glass across the site by plot can be seen in Table B.11.2. Only features with larger assemblages of vessels or window glass will be discussed, except where vessel or window glass is otherwise considered significant.

Plot Number	Period 3 (MNV)	Period 3 Window glass shard count	Period 4 (MNV)	Period 4 Window glass shard count
No plot number			1	
9	3	1		
10	2			
11	2			3
12	16	130		
13	7	10		
14	15	9		
15	3	1	54	7
31			2	
32			33	27
33			71	86
34			41	17
Total	*48*	*151*	*202*	*140*

Table B.11.2: *Period 3 and 4 MNV and window glass shards by plot*

B.11.13 Table B.11.2 indicates that, in Period 3, the MNV is relatively low in all plots except 12, 13 and 14, with a significant number of window glass shards recovered from Plot 12. For Period 4, Plots 15, 32, 33 and 35 produced large individual vessel assemblages, with window glass significant in Plots 32, 33 and 34. There is little overlap between the plots by period, with only Plot 15 producing glass from features in Periods 3 and 4.

Period 3: Plot 12

B.11.14 The bulk of the glass assemblage from this plot (Table B.11.3) was recovered from cellar **1906**, which was also a key feature for the ceramic assemblage. The pottery recovered included a highly decorated Metropolitan-type Slipware bowl (1630–1700) and Tin-Glazed Earthenware vessels, alongside a Frechen Stoneware Bartmann jug, and various post-medieval vessels, and burnt ceramics that might be part of the debris from the 1731 Barnwell fire. The bulk of the window glass recovered from this plot was found in this cellar and some of the window glass shards recovered also appear to have been somewhat distorted by heat; a distinct group of 10 fragments of de-vitrified glassy slag-like material was also recovered. The vessel glass is a mix of late 17th- and 18th-

century bottles (MNV 16 vessels), including a short-necked bottle or phial. The material is all fragmentary and likely to be backfill, as part of levelling off the area after the 1731 fire, incorporating material that was affected by the conflagration.

B.11.15 Cellar **2061** produced a smaller but significant assemblage, alongside a single shard of not closely datable window glass and an intrusive 19th-century utility-wine bottle shard. Also present were three shards from a cylindrical beaker with optic-blown mesh in clear glass having a dark greenish cast (potash/Forest glass), the base has a slightly off-centre conical kick and unpolished pontil scar. The basal edge is rounded and the mesh pattern covers the base, only becoming indistinct towards the apex of the kick (*c*.1600–1650). The example of this type of beaker illustrated by Willmott has a solid applied base ring (Willmott 2002, 39, fig. 9) and Willmott suggests that later vessels often lack this base ring (*ibid*, 37), suggesting that the Harvest Way example is at the latter end of the date range for this vessel type. Willmott lists this type of cylindrical beaker as uncommon and produced in both the Low Countries and England (*ibid*, 39, fig. 9). As the vessel appears to be potash/Forest glass, it may be English in origin. This was the only example of a 17th-century drinking glass recovered from either Newmarket Road or Harvest Way excavations, and although the Eastern Gate Hotel site produced 17th-century glass from F69, the material recovered was from utility bottles.

Cut	Type	Context	Type	Form-description	Colour	MNV	Overall Date
	Layer	853	Window		Greenish cast		Not closely datable
	Layer	1141	Vessel	Utility bottle (wine)	Natural black	1	Late 17th or early 18th century but could be later
	Layer	2799	Window		Clear, near colourless		18th century
	Layer	2890	Vessel	Bottle	Natural black	2	Not closely datable
1906	Cellar	1907	Miscellaneous	Uncertain	Blue-green		18th century
			Miscellaneous	Uncertain, de-vitrified glass, possibly from a bottle	Natural black		
			Miscellaneous	Uncertain, slag-like fragments			
			Vessel	Utility bottle (wine)	Natural black	6	
			Vessel	Pharmaceutical bottle (short-necked bottle or phial)	Blue-green	1	
			Window		Near colourless, slight greenish cast and slight bluish cast		
2061	Cellar	2024	Vessel	Utility bottle (wine)	Mid olive green	1	Uncertain, as contains both 19th-20th century and 17th century glass
		2025	Vessel	Venetian-style beaker	Dark greenish cast	1	
			Vessel	Uncertain	Olive green	1	
		2028	Window		Greenish cast		
2208	Pit	2209	Vessel	Utility bottle (wine)	Natural black	1	18th-19th century
2211	Pit	2212	Vessel	Utility bottle (wine)	Natural black	1	Not closely datable
3030	Posthole	3029	Vessel	Utility bottle	Near colourless	1	19th century

Table B.11.3: *Plot 12 glass*

Period 3: Plot 13

B.11.16 Within the plot, the glass is distributed relatively evenly (Table B.11.4). Pit **985** produced shards from a late 17th- to early 18th-century straight-sided onion bottle, alongside seven shards of window glass of a probable similar date. Next, pit **1573**

produced a partial baluster stem in clear, near colourless highly iridised glass, with a single flattened knop. This is an annular knop, and although the full form of the vessel cannot be established, the stemware is most likely to be 18th century. Pit **2659** contained shards from a minimum of three bottles, including an 18th-century cylindrical natural black glass bottle. The remainder of the material from this feature is not closely datable.

Cut	Type	Context	Type	Form-description	Colour	MNV	Overall Date
985	Pit	983	Vessel	Utility bottle (wine)	Natural black	1	Late 17th-early 18th century
	Pit	984	Window		Slight greenish cast	0	
1570	Pit	1569	Window		Near colourless	0	?19th-20th century
1573	Pit	1574	Vessel	Stem ware	Colourless	1	18th century
2157	Pit	2158	Vessel	Utility bottle (wine)	Natural black	1	18th or 19th century
			Vessel	Pharmaceutical bottle (short-necked bottle or phial)	Near colourless	1	
2659	Pit	2660	Vessel	Utility bottle (wine)	Natural black	3	18th century
2785	Pit	2782	Window		Near colourless	0	Not closely datable

Table B.11.4: *Plot 13 glass*

Period 3: Plot 14

B.11.17 Seven features within this plot produced glass (Table B.11.5), the bulk of which was recovered from ditches; further material came from four pits. The earliest material recovered was the fragment of medieval painted glass SF622, from pit **204**; the feature produced no other glass. The majority of the glass recovered was from bottles, both wine and short-necked bottle or phial, in addition to a small shard from a moulded glass vessel in the form of a basket, in an opaque pale blue 'milk' type glass.

Cut	Type	Context	Type	Form-description	Colour	MNV	Overall Date
204	Pit	203	Window (medieval)		Opaque but likely originally clear		18th century, although may be later.
816	Ditch	818	Vessel	Utility bottle	Pale olive green	1	
			Vessel	Decanter handle	Natural black	1	
			Vessel	Wine bottle	Olive-green	1	
			Window		Clear, with greenish cast		
821	Pit	822	Vessel	Utility bottle (wine)	Natural black	1	Not closely datable
830	Ditch	731	Vessel	Pharmaceutical bottle (short-necked bottle or phial)	Clear, near colourless	1	18th century
			Vessel	Utility bottle (wine)	Pale olive green	1	18th century
			Vessel	Utility bottle (wine)	Natural black	2	Early-mid 18th century
			Vessel	Pharmaceutical bottle (short-necked bottle or phial)	Green	1	18th-century type
			Window		Blue-green		Not closely datable
2020	Ditch	2016	Window		Clear, with greenish cast		Not closely datable
		2018	Vessel	Utility bottle (wine)	Mid olive green	1	18th-19th century
			Vessel	Pharmaceutical bottle (short-necked bottle or phial)	Green	1	
			Vessel	Pharmaceutical bottle (short-necked bottle or phial)	Colourless	1	
			Window		Clear, with greenish cast		

Cut	Type	Context	Type	Form-description	Colour	MNV	Overall Date
2577	Pit	2576	Miscellaneous	Milk glass bowl or spill vase	Opaque pale blue	1	19th century
2584	Pit	2581	Vessel	Utility bottle (wine)	Natural black	1	Not closely datable but likely 18th century
			Vessel	Utility bottle	Mid olive green	1	

Table B.11.5: *Plot 14 Glass*

Period 3 and Period 4: Plot 15

B.11.18 Plot 15 is the only plot where vessel glass was recovered from both Period 3 and 4 features, vessel glass from Period 3 and window glass from Period 4 having been recovered in Plot 11. The small amount of glass recovered (see table 2) from cesspit **2136**, and pits **2139** and **2295** in Period 3 is likely to be 18th century. The bulk of the glass from Plot 15 was recovered from a single feature, cellar **2474** (Table B.11.6), which may have had two phases of infilling or was subject to some disturbance, as fill **2399** produced a base from a tumbler or beaker in clear, colourless glass (Table B.11.7), however, the vessel is probably 19th-century and therefore intrusive in this context.

B.11.19 The cellar context identified as relating to Period 4 produced a minimum of 42 bottles of various types, including wine bottles and short-necked bottles or phials. The majority of these are mid to end of the 18th century; however, a number of bottles, including a green glass octagonal pharmaceutical bottle, one face embossed with horizontal lines marking measurements for using the contents, date to the 19th century. Other bottles present include a complete neck-rim and partial shoulders, and near complete base from a wide-mouthed, squat cylindrical dark green/natural black glass bottle of a type used for preserving or storage. While there is a large number of bottles present, little window glass was recovered, only seven shards in total, four of which appear to be from a square or rectangular pane of possibly 19th-century glass.

Cut	Type	Context	Type	Form-description	Colour	MNV	Date
2474	Cellar	2473	Vessel	Utility bottle (wine)	Natural black	28	Mid-end of the 18th century
			Vessel	Utility bottle (wine)	Mid-dark olive green	1	18th-19th century
			Vessel	Utility bottle	Near colourless	1	19th century
			Vessel	Pharmaceutical bottle (short-necked bottle or phial)	Colourless or near colourless	9	18th or 19th century
			Vessel	Pharmaceutical bottle	Pale green	1	19th century
			Vessel	Small bottle or flask	Near colourless	1	18th century
			Vessel	Utility bottle (food?), wide-mouthed squat cylindrical vessel	Natural black	1	Mid-late 18th century
			Window		Clear with greenish cast		19th century
			Window		Near colourless		18th century

Table B.11.6: *Cellar **2474** glass*

B.11.20 This possibility of two phases of disposal, or curation for some time prior to deposition, is further suggested by the presence of a minimum of 14 drinking vessels, of which 11 are 18th-century and a further two are 18th–19th-century with one ?19th-century vessel. The drinking vessel glass is mostly stemware: at least six of the vessels, all of which appear similar, have a solid conical foot, suggesting the glasses represent a set of wine glasses disposed of as a group. The majority of the drinking glasses are plain stem wine, port or gin glasses in clear, colourless glass with a conical or trumpet-shaped bowl. Two rummers used for wine or ale were also identified. A full description of all the drinking glasses can be found in the catalogue. This is the largest

collection of drinking glasses recovered from a single feature during the excavation (a total of 26 drinking vessels were recovered from the excavation) and appears to be larger than the total number of drinking vessels recovered from the Eastern Gate Hotel site (Herring and Cessford 2013, 78–85).

Cut	Type	Context	Type	Form-description	Colour	MNV	Date
2474	Cellar	2399 (Period 3)	Drinking vessel	Tumbler or beaker (no pontil mark)	Colourless glass	1	?19th century
		2473	Drinking vessel	Stemware (plain stem wine glass)	Clear, colourless or near colourless glass	10	18th century
			Drinking vessel	Stemware (wine glass)	Colourless glass	1	18th century or late 18th-19th century
			Drinking vessel	Stemware (rummer)	Colourless glass	1	18th century
			Drinking vessel	Stemware (rummer)	Colourless glass	1	18th or 19th century

Table B.11.7: *Cellar **2474** drinking vessels*

Period 4: Plot 32

B.11.21 Firmly within Period 4, the glass, although fragmentary, consists of a minimum of 30 vessels from 13 features and seven layers (Table B.11.8), one of which is described as a floor, and most likely relates to the early 18th-century building within this plot, the plot being owned by Olivia Palmby (see Section 1 of main report). In 1848, part of the plot and a portion of the Old Manor House was used by the Mendicity Society. In 1855 Reverend Sparkes Bellett Seaby rented the walled yard behind Mendicity House, containing a children's schoolroom, workshop and outbuildings, from the Parker family, for the use of a school or Sunday school (CRO P24/25/13). It is thought that posthole **1305** may be the remains of one of these buildings. This posthole produced utility bottle glass shards of 19th-century and later date, which most likely relate to the clearance of the areas, rather than usage.

B.11.22 Although Plot 32 produced a large individual vessel assemblage, the majority of the glass recovered is fragmentary and a mix of utility bottles, including wine bottles, a Hamilton-type bottle from **1977**, building 27, and pharmaceutical bottles.

B.11.23 The most interesting find was recovered from pit **3609**, SF551, a near complete ?lead crystal pendant from a chandelier. This glass piece is unlikely to have come from the poorer domestic housing and may have come from part of the Old Manor House during its use by the Mendicity Society. The chandelier pendant was found alongside 19th-century utility bottles. A small fragment from an oil lamp chimney was also recovered from this plot (wall foundation trench **2833**), illustrating another form of 19th-century lighting, and one available to all levels of society.

B.11.24 Window glass recovered from this plot includes three large shards of clear bullseye glass (pit **3597**), flat on one side with a distinct central dome and on the opposing side of which there is a very coarse central knob or bullion, the scar being from a plain or glass-tipped pontil rod. One shard of glass appears to have score marks on either side of the glass. The glass was not successfully broken along these lines, the score marks are very definite and quite deep, running at an angle to each other on either side of the glass, suggesting someone was trying to cut a possible diamond or square-shaped pane from the crown glass, perhaps indicating glazing work occurring on the site, and probably dating to the 18th–19th century. Similar glass was recovered from context **2937**, Plot 33.

Cut	Type	Context	Type	Form-description	Colour	MNV	Date
1305	Posthole	1304	Vessel	Utility bottle (wine)	Olive green	1	19th century
			Vessel	Utility bottle or pharmaceutical	Blue-green	1	19th-20th century

Cut	Type	Context	Type	Form-description	Colour	MNV	Date
				bottle			
			Vessel	Utility bottle or pharmaceutical bottle	Clear with green cast	1	Not closely datable
1977	Room-Building 27	1976	Vessel	Hamilton-type bottle	Clear, near colourless	1	19th century
2833	Wall foundation trench	2834	Lighting	Oil lamp chimney	Clear, colourless	0	19th century
			Vessel	Utility bottle or pharmaceutical bottle	Blue-green	1	19th-20th century
3597	Pit	3621	Vessel	Utility bottle or pharmaceutical bottle	Blue-green	1	19th-20th century
			Window		Clear with blue-green cast	0	18th-19th century
			Window	Bullseye	Clear with slight blue-green cast	0	18th-19th century
3069	Pit	3607	Lighting	Chandelier pendant	Clear, colourless	0	19th century
			Vessel	Utility bottle (wine)	Natural black	3	19th century

Table B.11.8: *Glass from selected features in Plot 32*

Period 4: Plot 33

B.11.25 Plot 33 produced the largest assemblage of vessel glass in any period, MNV of 74 vessels and 86 shards of window glass from 10 layers and 21 features, including material from 11 pits, and two wells. Cess pit **2199** produced the single largest glass assemblage of any feature in this plot by weight, although not by MNV. The combined MNV for the 10 layers which produced vessel glass is 19, however, the largest MNV for any individual layer is four vessels.

B.11.26 Layer **2937** was only the second context in the entire glass assemblage to produce identifiable shards of bullseye glass (18th-19th century), recovered alongside other shards of window glass and an undiagnostic fragment of natural black glass bottle.

B.11.27 Cess pit **2199** produced a large and also interesting assemblage (Table B.11.9), as the pit contained decorative bottles, two delicate (fragmentary) small bottles, the first possibly mould-blown and highly decorated, a pale-mid blue bottle with ribbing and diamond decoration. A small 'base' with partially-finished pontil mark is present, possibly a perfume bottle. A similar bottle in clear colourless glass is present in the Museum of London collection (Museum of London 2004, Acc. No. A7353). The second bottle, also pale-mid blue, is decorated with concentric indented circles. There is no neck or base present on this second example and, although an example in pale blue glass could not be located, similar round bottles in brown or green glass often held smelling salts. Again, the Museum of London collection holds a similar bottle in clear colourless glass that is comparable (Museum of London 2004, Acc. No. A25362).

B.11.28 The most curious items recovered from cess pit **2199** are a group of blue, green, clear and lattimo-type, thin, hollow glass tubes which appear to related to lamp-worked glass. This glass was recovered as a relatively discrete group within the cess pit, suggesting they were discarded together. The material includes several examples where two different coloured glass tubes have been fused together, where tubes have been bent, and where the glass tubes have been inflated, forming balls of glass like Christmas baubles. The pot-metal coloured glass is bright, retaining its original colour with little patination, however, the clear glass appears to have yellowed due to patination and some of the white threads on the surface of the lattimo-type glass are flaking off as the glass loses its surface. The group clearly includes hot worked glass,

and while the majority of fragments are hollow tubes, two short lengths of solid clear glass rod were also recovered. This may represent craft-working on a very small scale, perhaps by a travelling artisan. The majority of the tubes are relatively short lengths and it seems likely that these represent failed baubles, waste and fragments too small to use. No other material of this type was found at Harvest Way and no examples were recovered from the Eastern Gate Hotel site, making this small group of gaudy fragments of glass unique to this one feature.

Cut	Type	Context	Type	Form-description	Colour	MNV	Date
2199	Cess pit	2197	Vessel	Utility bottle	Green	1	19th or 20th century
			Vessel	Utility bottle- three part Rickets-type mould with a mamelon type base.	Natural black	1	19th-20th-century
			Vessel	Utility bottle (wine)	Natural black	1	Late 18th-19th century
			Vessel	?Perfume bottle	Pale-mid blue	2	18th or 19th century
			Vessel	Short-necked bottle or phial	Clear, near colourless	1	18th-19th century
			Vessel	Utility bottle, food bottle or jar	Greenish	1	19th or 20th century
			Miscellaneous	Lampworking glass	Clear, near colourless		
			Miscellaneous	Lampworking glass	Clear with white lattimo threads		
			Miscellaneous	Lampworking glass	Clear, yellowish		
			Miscellaneous	Lampworking glass	Blue		
			Miscellaneous	Lampworking glass	Green		

Table B.11.9: *Glass from cess pit **2199***

B.11.29 The latest glass recovered from this plot came from pit **2494**, which produced a minimum of nine vessels (Table B.11.10), of which six are 18th-century or later, and the remainder are 19th-century or later, including a 19th–20th-century pharmaceutical bottle. The feature also produced 56 shards, some of which is 20th century or later, including a shard of glass with a reeded surface, such as found on privacy glass in office doors.

Cut	Type	Context	Type	Form-description	Colour	MNV	Date
2494	Pit	2495	Vessel	Utility bottle (wine)	Natural black	1	19th century
			Vessel	Utility bottle (wine)	Natural black	1	19th century or later
			Vessel	Utility bottle (wine)	Natural black	7	Mid 18th+
			Vessel	Utility bottle or pharmaceutical bottle	Pale green	1	19th-20th century
			Window		Slightly blue-green		Not closely datable but likely to be 18th or 19th century.
			Window		Slightly blue-green		20th century or later
			Window		Near colourless, reeded surface		20th century or later
			Window		Colourless		20th century or later
			Window		Originally clear		Not closely dated

Table B.11.10: *Glass from pit **2494***

B.11.30 Pit **2735** produced a number of drinking vessels, both stemware and tumblers or beakers (Table B.11.11); this is only the second feature to produce more than individual shards from one or two vessels. The feature produced a minimum of four small tumblers in clear colourless glass, the two bases had polished pontils and no mould lines, indicating handmade glass, dating possibly to the later 18th to early 19th century. Also present is a stemware vessel likely to have been an 18th-century jelly or dessert glass. The final drinking vessel is a represented by a partial hollow-faceted, tapering

stem (hexagonal) with diamond facets on the shoulder of the stem below the bowl and part of the faceted bowl, which also is of hexagonal form. The dating is uncertain, since this glass may have been curated, and deposited after this form of glass went out of fashion (*c*.1760–1810).

Cut	Type	Context	Type	Form-description	Colour	MNV	Date
2735	Pit	2736	Vessel	Utility bottle (wine)	Black	1	19th-century
			Vessel	Utility bottle	Brown or dark amber	1	Early 19th-century
			Vessel	Drinking vessel-tumbler or beaker	Colourless	4	?Late 18th and early 19th century
			Vessel	Drinking vessel, stemware	Colourless	1	18th century
			Vessel	Drinking vessel, stemware	Colourless	1	18th century (*c*.1760-1810)

Table B.11.11: *Glass from pit **2735***

B.11.31 Wells **1051** and **3325** both produced 19th-century assemblages (Table B.11.12), with a MNV of 3 in well **1051** and only a single vessel in **3325**. There is a single black wine bottle and a single shard of window glass from well **1051**, which may be 18th century; however the rest appear to be 19th century.

Cut	Type	Context	Type	Form-description	Colour	MNV	Date
1051	Well	1044	Vessel	Utility bottle (wine)	Natural black	1	Not closely datable but likely to be 18th century
			Vessel	Utility bottle (wine)	Dark olive green or natural black		Not closely datable but most likely 19th-20th century (shard too small to identify as an individual vessel)
			Vessel	Utility bottle or jar	Slightly blue-green	1	19th century or later
			Vessel	Short-necked bottle or phial	Colourless	1	19th century
			Window		Near colourless	0	Not closely datable
			Window		Slight greenish cast	0	Possibly 18th century
3325	well	3319	Vessel	Utility bottle (wine)	Natural black	1	19th century
			Window		Pale greenish	0	Not closely datable

Table B.11.12: *Glass from well **1051** and **3325***

Period 4: Plot 34

B.11.32 The bulk of the glass (MNV 24) was recovered from cellar **2188** (Table B.11.13), including a near complete, flat octagonal bottle, with a slightly damaged lip and string rim, *c*.1740. This was the only non-cylindrical wine bottle within the total assemblage, the significance of which is unclear. Much of the remainder of the assemblage from the cellar consists of olive green or black glass utility (wine) bottles of various dates, one *c*.1750–1780 and others somewhere between mid-18th and early 19th century. Other bottles recovered included a shard from a blue-green moulded flat octagonal bottle. The body is embossed on one side ELIXIR and on the reverse. YARD LONDON. This is from a Daffey's Elixir bottle, Daffey's was a patent medicine, a generic cure-all, popular in the 18th century and still produced in the 19th century. It is referred to in Anthony Trollope's novel *Barchester Towers*, and Charles Dickens' *Oliver Twist*. (https://en.wikipedia.org/wiki/Daffy%27s_Elixir). Four shards from another Daffey's Elixir bottle were recovered from layer 2942 within Plot 33.

B.11.33 Cellar **2188** also produced 18th- and 19th-century pottery (*c*.20kg), with the context dated to the 19th century (*c*.1820–1840). This mixing of material with similar levels of abrasion from different centuries suggests, perhaps, a certain degree of curation of the assemblage, or that the material has been brought from several different sources, simply to be used to fill the redundant cellar.

Cut	Type	Context	Type	Form-description	Colour	MNV	Date
2188	Cellar	2192	Vessel	Utility bottle (wine)	Olive-green	1	18th century
		2192	Vessel	Pharmaceutical bottle	Blue-green	1	19th- 20th century
		2192	Vessel	Pharmaceutical bottle ELIXIR and on the reverse. YARD LONDON.	Blue-green	1	19th century
		2192	Vessel		Natural black	1	*c*.1750-1780
		2192	Vessel	Short-necked bottle or phial	Near colourless	4	18th-century
		2192	Vessel	Utility bottle (wine) flat octagonal	Dark olive green	1	18th century (circa 1740)
		2192	Vessel	Utility bottle (wine)	Olive-green	1	18th century
		2192	Vessel	Utility bottle (wine)	Natural black	1	*c*.Mid 18th century+
		2192	Vessel	Utility bottle (wine)	Natural black	6	*c*.Mid 18th -early 19th century
		2192	Vessel	Utility bottle (wine)	Mid to dark olive green	1	*c*.1750-1780
		2192	Vessel	Utility bottle (wine)	Dark olive green-natural black	6	*c*.Mid-end of the 18th century
		2192	Vessel	Utility bottle (wine)	Dark olive green-natural black	1	Late 18th-early 19th century
		2192	Window		Clear		Not closely datable
		2192	Window		Greenish cast,		Not closely datable likely to be 18th-19th century
		2192	Window		Slight blue-green cast		Not closely datable likely to be 19th century

Table B.11.13: *Glass from cellar **2188***

B.11.34 The remaining features were mostly pits: **1777**, **1995**, **2042**, **2044**, **2046**, **2609**, **2722**, **2751**, which produced relatively small assemblages. Of these, pit **1995** produced shards from a minimum of three black glass bottles, weighing in total 1.409kg, and of late 18th early 19th-century date. Pit **2609** produced various vessels (0.442kg), including fragments from a near colourless glass short-necked bottle or phial, possibly 18th century, and two drinking vessels, a fragmentary 18th-century plain stem wine, port or gin glass and a colourless glass base from tumbler or beaker of 19th-century date.

Discussion

B.11.35 The assemblage produced some early material, including a fragment of medieval painted glass and a 17th-century Venetian-style glass cylindrical beaker, however the bulk of the glass assemblage is dated 18th–19th century, with some 19th–20th-century material. Like the pottery assemblage for this period, consumption is the main focus of the glass assemblage exemplified by wine glasses, possibly to accompany dining, either in private homes boarding houses or hostelries. The mostly natural black or green glass utility (wine) bottles, are the most common form recovered, including a single example of a flat octagonal bottle. It should be noted that there were also no case bottles (a square bottle designed to be easily transported in cases or crates). Most commonly associated with gin, their absence is interesting considering that there are suggestions that this area of Barnwell, especially in the 18th–19th century, was involved in the entertainment industry. 'Barnwell […] contained 10,000 inhabitants, almost exclusively of the very lowest class, and a large proportion of them supported by thieving and prostitution' (Burns 1999, 270). The various Gin Acts of the early 18th century tried to curb the consumption and abuse of gin, by the inhabitants of 'Barnwell,

perhaps at the local dram shops, which women were likely to visit more frequently than the local ale houses' (Blocker, Fahey and Tyrrell 2003, 265).

B.11.36 Some of the utility bottles and vessel glass may also relate to the deposition of collegiate ceramics, which were recovered from various features. Of these, pit **2735** produced collegiate material, including vessels from one or more Trinity College dining services and fragments from four tumblers or beakers and two stemware vessels, alongside 19th-century bottles.

B.11.37 The assemblage is moderately fragmented, and the collection methodology deliberately targeted bases and rim-lips so some bottle forms may be under-represented, however, the overall assemblage contains a wide range of vessel types, with the most variety recovered from the later features. Herring and Cessford suggest that by the late 19th century, as glassware became more common, the Easterngate Hotel deposits became more mixed and from establishments selling a variety of goods, suggesting structure F.83 was a general store/pharmacy (Herring and Cessford 2013, 85). The assemblage from Harvest Way is not so clear cut and it seems likely that the material recovered from at least one feature represents glass and pottery that may have been deliberately brought to site to infill the feature.

APPENDIX C. ENVIRONMENTAL REPORTS

C.1 Human Skeletal Remains

By Natasha Dodwell and Zoë Uí Choileáin

Introduction

C.1.1 A single articulated skeleton, radiocarbon dated to the Late Bronze Age/Early Iron Age, was identified during the excavations. In addition, 138 fragments of disarticulated human bone were recovered from seven features (Period 4) across the site.

Nature of the Assemblage

C.1.2 The skeleton (**1272**) lay on its left side in a crouched position in a grave cut (**1273**) aligned approximately north to south. The head was at the north of the grave, the right arm flexed across the abdomen and the left flexed back on itself so that the hand touched the left shoulder.

C.1.3 The 138 fragments of disarticulated bone were recovered from pits, floor surfaces and layers dated by the ceramic assemblages to Period 4 in plots 33 and 33a.

Preservation

C.1.4 Skeleton **1272** was well preserved with over 75% of skeletal elements surviving (some ribs and extremities were missing, as were the pubic symphyses). The condition of the cortical bone was assessed as grade 4 after McKinley (2004, 16). Whilst the majority of the bones were present, many of the more fragile remains such as ribs and pelvis fragmented during processing.

C.1.5 The disarticulated fragments of human bone are generally small and of a similar size (*c.*80–150mm) with ancient post-mortem breaks. The cortical bone is well preserved, grade 0–2 (*ibid*).

Methodology

C.1.6 All of the human remains were assessed in accordance with national guidelines set out by Mays *et al.* (2005) and with reference to standard protocols for examining human skeletal remains from archaeological sites (Brickley and McKinley 2004; Buikstra and Ubelaker 1994; Cox and Mays 2000).

C.1.7 For the articulated skeleton age was assessed by the degree of epiphyseal fusion, the pattern of molar attrition (Brothwell 1972, 69, fig. 30) and the appearance of the auricular surface (Buckberry and Chamberlain 2002). Sex was determined by dimorphic traits of the skull, mandible and pelvis and by metrical data. An estimate of living stature was made using long-bone length and Trotter's regression equations (1970).

C.1.8 Attributing age and sex to disarticulated elements is far more problematic and is dependent upon which elements survive. In crude terms age could be determined by the size and general robustness of the element but where epiphyseal ends were present or the element was more complete the stage of epiphyseal union could be used. With elements from immature individuals the stage of dental development (Ubelaker 1989) and metrical data (various tables in Schaefer *et al.* 2009) were used.

C.1.9 The disarticulated elements were recorded using Knüsel and Outram's zonation method (2004). Duplicated elements and differences in age and sex were used to calculate the *minimum* number of individuals.

Results

C.1.10 The skeleton (**1272**) is a mature (>45 years) adult male, height 165.7cm.

C.1.11 Changes to the bone characteristic of degenerative joint disease in the spine (marginal osteophytes, and an increase in porosity) were recorded on the bodies and the left superior/inferior articulating facets of the cervical vertebrae. Similar bony changes were observed on the costal facets of the thoracic vertebrae and ribs.

C.1.12 All of the surviving dentition, including the anterior teeth, are extremely worn. The alveolar bone in both the maxilla and mandible has resorbed (periodontal disease) and two left maxillary molars were lost prior to death. The left maxillary 2nd premolar and 1st molar both have large carious lesions; in the latter almost the entire crown has been destroyed. The sockets of these teeth have completely resorbed and there is evidence of a large external/internal draining abscess here, with these carious teeth close to being lost. Flecks of calculus were recorded on several of the canines and premolars.

C.1.13 Raised plaques of new bone, characteristic of a non-specific infection, were recorded on both the left and right ankle joints, where the interosseous ligament attaches to the fibula and tibia. New bone growth occurs when there is soft tissue damage and it is likely that this individual repeatedly twisted his ankles.

C.1.14 Although not pathological it is worth noting that the nasal bone is extremely prominent, protruding at almost 90° from the nasion (the most anterior point on frontonasal suture). The morphology suggests that this elderly man is likely to have had a very distinctive, striking nose.

Disarticulated Material

C.1.15 Disarticulated human bone (Table C.1.1) was recovered from seven contexts. All areas of the body are represented and basic osteological information is presented in tabular form below.

Context	Feature type	Element	Age/sex	Erosion	Notes
1005	layer	u/s mid shaft tibia	adult	1-2	
1009	pit	2x parietal frags. & u/s femur mid shaft	adult	2-3	
1994	pit	r. humerus shaft	adult	0-1	
2185	Building/floor	l. femur mid shaft	adult	1-2	
2186		u/s distal tibia & femur shaft, prox. Hum shaft, rib shaft frag. & r. 3rd metacarpal	adult	0-1	Green staining on the distal end of the MC shaft.
		u/s femur mid shaft (u/s), r. tibia	Infant (c.3mos)	0-1	81.42mm (tibia)
		u/s fibula, l. tibia, r. scapula,	neonate	0	60.48mm (fibula), 61.20mm (tibia)
2495	pit	skull fragments x 13 (inc. occipital & orbits)	adult (male & female)	1-3	
		mandible x 3	adult male, infant (4yrs± 1 year), neonate	1-2	All teeth lost PM except in infant jaw
		Vertebrae x 4 & ribs x 12	adult	1-2	
		Pubic symphysis & loose illiac epiphysis	Adult & subadult (13-18yrs)	2-3	
		Long bone shafts (all limbs) x 30	adult	1-3	predominantly mid shafts but also proximal & distal ulna
		Metatarsals & metacarpals & phalanges (x27)	adult	0-1	Includes 3 x right 5th metatarsals
2736	pit	l. clavicle	Infant (3-5yrs)	0-1	73.45mm
		2 x parietal, 3 x prox.	adult	0-2	

Context	Feature type	Element	Age/sex	Erosion	Notes
		phalanges (inc. a 1st metatarsal), r. rib frag. Spinous process of lower cervical/upper thoracic vertebra			

Table C.1.1 Disarticulated human bone

Discussion

C.1.16 The vast majority of archaeological features on this site are medieval and post-medieval in date although prehistoric ditches were found towards the eastern side of the site, which could potentially be broadly contemporary with skeleton **1272**.

C.1.17 Data pertaining to frequency rates of dental disease in prehistory is sparse and problematic to interpret, largely because of the number of individuals that have been studied and the quality of published data (Roberts and Cox 2003, 85). The dental disease that this skeleton exhibited, principally caries, an abscess, periodontal disease and tooth loss are interrelated and would be a result of poor oral hygiene combined with the age of the individual.

C.1.18 Similarly, the degenerative changes to the spine can be attributed to old age.

C.1.19 The disarticulated remains represent a *minimum* of seven individuals; a neonate, two infants (one aged *c*.3months and one aged 3–5years), a subadult (aged 12–18yrs) and three adults (including one male and one female).

C.1.20 The verdigris (green staining) around the distal end of the 3rd right metacarpal recovered from the floor/building **2186** suggests that a copper alloy object, possibly a ring, was in contact with the middle finger.

C.1.21 Neonate and infant burials are extremely rare in prehistory and this, combined with the difference in cortical preservation between the inhumation and the disarticulated material, suggests that they are not contemporary. It is likely that the disarticulated bones derive from medieval graves or charnel assemblages associated with the priory to the immediate north of Newmarket Road that had been disturbed and become incorporated into features on the Harvest Way site in a similar way that masonry and other materials have been.

C.2 Faunal Remains

By Angelos Hadjikoumis

Introduction

C.2.1 The size of the faunal assemblage produced by the excavations at Harvest Way is quite large, with more than 4000 faunal remains identified to some degree. This total includes the remains of mammals, birds, fish and amphibians recovered through hand collection and water flotation. The volume of faunal remains attributable to Period 1 (Prehistoric) is negligible (NISP = 8), while that of Period 4 (1800–present) is rather small (NISP = 150). Periods 2 (1200–*c*.1538) and 3 (1538–*c*.1800) are well-represented with 2292 and 1222 NISP respectively. Besides the identification of disarticulated remains, complete (or near-complete) skeletons of 11 mammals and 5 birds were also recorded.

C.2.2 This preliminary analysis of the faunal assemblage from Harvest Way is aimed at providing the general characteristics of human–animal interactions at the site, mainly concerning the two well-represented Periods 2 and 3 covering the chronological span between 1200 and 1800 AD. The large size of the assemblage and its chronological

resolution add to its potential of shedding light on human behaviour during the late-high medieval and post-medieval periods.

Methodology

C.2.3 During data recording, obvious new breaks were refitted in an effort to improve identifiability. Identification of anatomical element and species (or more general taxonomic category) was attempted on each specimen with the aid of published osteological atlases for mammals (*e.g*. Barone 1976; Pales and Garcia 1981; Schmid 1972) and birds (*e.g*. Bochenski and Tomek 2009; Cohen and Serjeantson 1996; Tomek and Bochenski 2000 and 2009), as well as the use of a limited number of available reference specimens available at the OA East offices. Fish and amphibian remains were quantified at a general level, as the author is not a specialist in their taxonomic identification and analysis.

C.2.4 The most generic level of anatomical identification for mammals and birds, involved attributing each fragment to one of two broad anatomical categories; 'flat/cubic bone' (*e.g*. scapula, pelvis, astragalus, vertebrae, ribs) and 'long bone' (*e.g*. humerus, radius, femur). Since the assemblage is large and mammals the most common class of animals, it was decided that only fragments identifiable to species or a specific taxonomic category (*e.g*. sheep/goat, equid, lagomorph) were recorded. Concerning birds, remains that could not be identified to species or family were assigned to one of four size categories (*i.e*. size 1: sparrow/songthrush, size 2: pigeon/crow, size 3: chicken/pheasant and size 4: goose/peafowl). With its limitations acknowledged (*e.g*. species falling outside or between these size categories), this scheme serves as a heuristic tool in order to gain a better idea of the importance of taxa identified more specifically.

C.2.5 Distinguishing between sheep and goat was attempted on post-cranial remains mainly following Boessneck *et al*. (1964) and on mandibular cheek teeth following Halstead *et al*. (2002) and Payne (1985). The distinction between equids (*i.e*. horse, donkey, etc.) was based on criteria from several authors summarised in Johnstone (2004, 165, table 4.1).

Quantification

C.2.6 All identifiable specimens contributed to the Number of Identified Specimens (NISP), which is the main quantification unit for all analyses involving species frequencies. Minimum Number of Individuals (MNI) was calculated based only on specimens identifiable to a taxonomic level more specific than the three size categories (*i.e.* large, medium, small) and taking into account the most abundant anatomical element, side and fusion state.

C.2.7 Beyond NISP, certain anatomical elements were also recorded in terms of Minimum Anatomical Units (MinAU) and Maximum Anatomical Units (MaxAU) (Halstead 2011). MinAU and MaxAU are more suitable units to explore age-at-death and other data, as well as serving as a check on NISP. The units systematically recorded with this method were: horncore/antler bases; mandible/loose cheek teeth; atlas; axis; scapula; proximal and distal halves of humerus, radius, femur, tibia, metapodia (only III and IV in pigs); proximal half of ulna; pelvis; astragalus; calcaneum and phalanges 1–3 (excluding lateral phalanges of pigs). These anatomical elements were selected for their durability and identifiability, as well as their high potential in terms of data recording.

C.2.8 For the tabulation of taxonomic composition, the sample from each of the four site periods was subjected to necessary corrections in order to account for anatomical differences between species. Body parts that do not exist in all species (horncore,

antler, lateral phalanges/metapodia, fibula, *etc*.) are included in the raw counts but excluded from the 'corrected' counts. Along the same lines, the numbers of foot bones (*i.e*. metapodials and phalanges) are corrected accordingly to match the single-digit equid foot (*e.g*. sheep/goat and cattle phalanges were divided by two, pig metacarpi/metatarsi by two, dog/cat/lagomorph metacarpi/metatarsi by four).

Results

Period 1

C.2.9 The sample attributed to Period 1 is only represented by few equid and cattle remains (Table C.2.1).

Taxon	NISP	MNI
Cattle	2	1
Equids	3	1
Total	*8*	*2*

Table C.2.1: *Taxonomic composition of mammalian remains from Period 1*

Period 2

C.2.10 Period 2 is by far the largest sub-sample of the Harvest Way assemblage and its analysis produced a reliable taxonomic composition for both mammals and birds. The mammalian assemblage almost exclusively derived from hand-collected samples, excluding one sheep/goat and two pig fragments. As expected, the taxonomic composition is dominated by domestic animals, with the red deer being the only large wild mammal present, as well as few rodent remains that probably represent commensal fauna. Several other species (*e.g*. pig, cat, dog) could theoretically also be represented by wild animals but it can be relatively safely assumed that the vast majority (if not all) belonged to domestic animals.

C.2.11 The domestic fauna (Table C.2.2) is dominated by sheep/goat (50%) and cattle (30%), while the pig played a secondary role (13.6%).

Taxon	Raw data		Corrected data		
	NISP	NISP %	NISP	NISP %	MNI
Cattle*	496	30.1	458	29.6	21
Equids	53	3.2	52	3.4	5
Sheep/goat	810	49.2	775	50.1	48
Pig**	224	13.6	200	12.9	20
Red deer	1	0.1	1	0.1	1
Deer	1	0.1	1	0.1	N/A
Dog	22	1.3	20	1.3	3
Lagomorph	4	0.2	4	0.3	1
Cat***	29	1.8	28	1.8	8
Small carnivore	2	0.1	2	0.1	N/A
Rodent	5	0.3	5	0.3	N/A
Total	*1647*	*100.0*	*1546*	*100.0*	*107*

*+1 near-complete skeleton (excluded from NISP, included in MNI)

**+2 near-complete skeletons (excluded from NISP, included in MNI)

***+4 near-complete skeletons (excluded from NISP, included in MNI)

Table C.2.2: *Taxonomic composition of mammalian remains from Period 2 (1200-c.1538)*

C.2.12 In terms of absolute meat weight produced, cattle must have constituted the primary source. Within the 'sheep/goat' taxonomic category, only sheep remains were definitively identified. Although the presence of goat cannot be entirely excluded, it is safe to assume that it was either very rare or absent from the site. Beyond the three

main domestic species (sheep, cattle and pig) accounting for more than 90% of identified remains, the most abundant taxon is the equids (3.2%), which were also possibly consumed as indicated by the presence of cutmarks on their remains. Almost all equid remains that were identified to species belonged to horses, thus indicating that it was the most common species of equid at the site. The presence of donkeys and mules cannot be excluded as a first phalanx exhibits mule-like morphology (Peters 1988, fig. 1), but they must have been far less common than horses. Domestic dogs (1.3%) and cats (1.8%) were also present at the site in low percentages but, interestingly, cutmarks were recorded on the remains of both species. In the case of the dog it was a single bone bearing a chop mark, while three cat remains bear dismembering and skinning marks. The two 'small carnivore' remains are more likely to belong to cats as no other small carnivore has been identified at the site. Concerning lagomorphs, all fragments allowing specific identification belonged to rabbit. Beyond the disarticulated remains, the skeletons of a calf (bearing skinning marks), two piglets (within their first month) and four cats (one of which younger than 3 months old) were also found.

C.2.13 Besides mammals, a large number of avian remains were also identified in the sample of Period 2. The most common taxonomic categories were the galliforms and the anatids (Table C.2.3). Within galliforms (30.2%), the vast majority of remains belonged to the domestic chicken, although the presence of other galliforms of similar size (*e.g*. pheasant and helmeted Guinea fowl) cannot be excluded as their separation is notoriously difficult. Most of the size 4 anatids probably belonged to domestic geese but the presence of other species (*e.g*. wild species of geese, swans, etc.) in small numbers is also certain as indicated by size differences within size 4 anatids. Indeed, in at least one case, the possibility of the presence of swan remains in the assemblage is suggested by a particularly large and morphologically compatible coracoid (Plate C.2.1). In addition, this specimen was butchered thus revealing the possibility of the consumption of swans at the site during Period 2. A single specimen of a ciconiiform (*e.g*. storks and herons) or gruiform (*e.g*. cranes) species was also identified. The majority of size 3 anatids (8.5%) are most likely belongs to ducks, although the separation of domestic from wild animals on morphological grounds alone is not possible. Given the heavily domestic character of the assemblage, however, it is more likely that the majority of remains derived from domestic ducks consumed by the site's inhabitants.

Size category	Taxon	NISP	NISP %	MNI
Size 2	Columbiform	19	4.8	3
	Corvid	3	0.8	2
	Indeterminate	10	2.5	N/A
Size 3	Galliform*	120	30.2	14
	Anatid	1	8.5	4
	Corvid**	1	0.5	4
	Indeterminate	20	9.8	N/A
Size 4	Anatid***	4	30.7	16
	Ciconiiform/Gruiform	28	0.3	1
	Indeterminate	2	6.0	N/A
Indeterminate bird		5	6.0	N/A
Total		*398*	*100.0*	*43*

*+1 skeleton (excluded from NISP, included in MNI)

**+4 skeletons (excluded from NISP, included in MNI)

***+2 skeletons (excluded from NISP, included in MNI)

Table C.2.3: *Taxonomic composition of avian remains from Period 2 (1200–c.1538)*

C.2.14 The identification of columbiform remains to species is difficult but, based on metrical and morphological grounds, it was possible to deduct that the majority belonged to pigeons (*Columba livia*) and possibly stock dove (*Columba oenas*), rather than the larger wood pigeon (*Columba palumbus*). Concerning the corvid remains, the size 2 specimens were compatible with the magpie (*Pica pica*) and jackdaw (*Corvus monedula*), while size 3 specimens were comparable with the rook (*Corvus frugilegus*) or the carrion crow (*Corvus corone*). Four partial skeletons of immature rook or carrion crow were included in the same pit (**2096**). The galliform near-complete skeleton (*cf*. chicken) was also recovered from the same pit. A size 4 anatid (*cf*. goose) partial skeleton was recovered from another pit (**2447**), with another from a well (**2412**).

C.2.15 In addition to mammals and birds, the remains of fish and amphibians were also recorded. These remains were recorded only in terms of absolute numbers without any further attempt for identification and quantification. More specifically, 136 fish (37 from flotation residues) and 108 amphibian specimens (86 from flotation residues) were recorded. Most of the hand-collected fish specimens belonged to relatively large fish, some of which bear cutmarks thus indicating their butchery prior to consumption. No cutmarks, or other modifications, were observed on amphibian bones.

Period 3

C.2.16 Period 3 produced the second largest sub-sample. As was the case in Period 2, the assemblage is dominated by domestic mammals (>90%), and primarily sheep/goat (46.5%) and cattle (35.5%). Compared to the previous period, cattle gained slightly in importance, mainly at the expense of sheep/goat and pigs, which have slightly reduced percentages (Table C.2.4). In the 'sheep/goat' taxonomic category, the vast majority of specimens belonged to sheep, although the mere presence of goat is suggested by three specimens tentatively attributed to this species. The percentages of equids, dogs and cats remains rather stable, while lagomorph (predominantly/exclusively rabbit) percentages exhibit a slight increase. In contrast to the previous period, dog and cat remains of Period 3 are not butchered but cutmarks on equid remains appears to be a consistent occurrence.

Taxon	Raw data		Corrected data		
	NISP	NISP %	NISP	NISP %	MNI
Cattle	364	35.1	345	35.5	18
Equids	29	2.8	29	3.0	4
Sheep/goat	479	46.2	452	46.5	34
Pig*	103	9.9	96	9.9	8
Deer	2	0.2	2	0.2	1
Dog**	19	1.8	13	1.3	3
Lagomorph	16	1.5	11	1.1	2
Cat	23	2.2	23	2.4	6
Common mole	1	0.1	1	0.1	1
Total	*1036*	*100.0*	*972*	*100.0*	*77*

*+2 near-complete skeletons (excluded from NISP, included in MNI)

**+1 near-complete skeleton (excluded from NISP, included in MNI)

Table C.2.4: *Taxonomic composition of mammalian remains from Period 3 (1538–c.1800)*

C.2.17 Concerning dogs, there is irrefutable evidence for the presence of small and very large breeds, although very large dogs are morphologically indistinguishable from wolves in most body parts. More specifically, the presence of a small breed of dog is documented by the complete skeleton of a dog, deliberately buried in burial **1720**. This dog burial constituted a treasure trove of information as its personal story can be reconstructed in detail. The dog was an adult female of a small breed of dog as indicated by its small

limb bones (Plates C.2.2 and C.2.4). The slight bowing observed on the long bones, especially the tibia, can be attributed to either pathology (*e.g*. rickets) or genetics (*i.e*. type of dog). Moreover, the specific dog was certainly female as the remains of at least four puppies were recovered with it. The cause of death of this dog was most likely related to severe fractures on the pelvis. These fractures would have caused complications in pregnancy and most likely death close to or during birth, as the natural birth canal was obstructed at several points by bony growths (see Plate C.2.3 for puppy bones and fractured pelvis). The fact that there was enough time for bone to partly heal suggests that the pelvis fractures did not cause immediate death but rendered the animal incapable of naturally giving birth.

C.2.18 Besides mammals, 157 bird remains were also recovered in contexts attributed to Period 3. As it was the case for Period 3, the most abundant taxa are the galliforms (predominantly domestic chicken) and size 4 anatids (predominantly domestic goose) (Table C.2.5). The same holds true concerning size 3 anatids (12.7%), with most of them likely belonging to domestic ducks. Among size 2 corvids, a single specimen was identified as jackdaw and, among size 3 corvids, a specimen was attributed to either the rook or the carrion crow. The only addition is a single bone of a bird of prey. Concerning the columbiforms, many of the bones belonged to immature birds, which suggests the presence of dovecotes and the exploitation of domestic pigeons for their flesh.

Size category	Taxon	NISP	NISP %	MNI
Size 2	Columbiform	9	5.7	2
	Corvid	4	2.5	1
	Indeterminate	2	1.3	N/A
Size 3	Galliform	47	29.9	8
	Anatid*	20	12.7	3
	Corvid	4	2.5	1
	Falconiform	1	0.6	1
	Indeterminate	13	8.3	N/A
Size 4	Anatid	39	24.8	3
	Indeterminate	9	5.7	N/A
Indeterminate bird		9	5.7	N/A
Total		*157*	*100.0*	*19*

*+1 skeleton (excluded from NISP, included in MNI)

Table C.2.5: *Taxonomic composition of avian remains from Period 3 (1538–c.1800)*

C.2.19 Beyond mammals and birds, the remains of 29 fish were recorded. All derived from hand-collected material as flotation residue from Period 3 contexts is pending. Due to a collection bias related to size, most of these remains belonged to medium- and large-sized fish. A quick scan of flotation samples suggests that smaller fish species were consumed in even larger numbers.

Period 4

C.2.20 The faunal sample attributed to Period 4 is rather small (Table C.2.6), both concerning mammalian and avian remains. Other classes of animals (*e.g*. fish and amphibian) were altogether absent from this small hand-collected sample. Despite its small size, the mammalian sample is similar to that of the previous period, with sheep/goat (predominantly or exclusively sheep) and cattle being the most abundant taxa. Pig, dog and lagomorph (predominantly or exclusively rabbit) percentages appear increased, while equid percentages decreased, but this observation's reliability is compromised by the small sample size. The overall lower number of species is also likely the result of small sample size.

Taxon	Raw data		Corrected data		
	NISP	NISP %	NISP	NISP %	MNI
Cattle	21	23.6	20	23.8	3
Equids	1	1.1	1	1.2	1
Sheep/goat	31	34.8	30	35.7	4
Pig	14	15.7	13	15.5	2
Dog	5	5.6	5	6.0	1
Lagomorph	11	12.4	9	10.7	2
Cat*	6	6.7	6	7.1	3
Total	*89*	*100.0*	*84*	*100.0*	*16*

*+1 near-complete skeleton (excluded from NISP, included in MNI)

Table C.2.6: *Taxonomic composition of mammalian remains from Period 4 (1800–present)*

C.2.21 As far as the avian remains are concerned, the size is small (Table C.2.7) but suggests strong reliance on galliforms (83.6%). As in the previous two periods columbiforms (pigeon and/or stock dove), corvids, size 3 anatids (ducks) and size 4 anatids (geese) were also present with the latter being of considerable importance although probably secondary to galliforms. Beyond their elevated economic interest, size 3 galliform remains revealed the presence of minimum two species of significance. As in Periods 2 and 3 the domestic chicken also played an important role in Period 4 but, in addition, the remains of the helmeted Guinea fowl (*Numida Meleagris*) were confirmed by the identification of a highly diagnostic skull (Plate C.2.5), as well as several postcranial elements (minimum 16 NISP).

Size category	Taxon	NISP	NISP %	MNI
Size 2	Columbiform	2	3.3	1
	Corvid	1	1.6	1
Size 3	Galliform	51	83.6	5
	Anatid*	1	1.6	1
	Indeterminate	2	3.3	N/A
Size 4	Anatid	2	24.8	3
	Indeterminate	1	1.6	N/A
Indeterminate bird		1	1.6	N/A
Total		*61*	*100.0*	*9*

*+1 skeleton (excluded from NISP, included in MNI)

Table C.2.7: *Taxonomic composition of avian remains from Period 4 (1800–present)*

Discussion

C.2.22 The results of the analyses presented, shed light onto the main characteristics of the animal-based economy and other human-animal interactions at Harvest Way over more than 800 years. The faunal sample of Period 1 is too small to support any other insight beyond the presence of cattle and equids in the prehistoric era.

C.2.23 The largest sample, that of Period 2 (1200–*c.*1538) reveals an animal economy based on two main pylons, sheep/goat (almost exclusively sheep) and cattle. These taxa also provide a range of secondary products such as milk, wool (sheep) and traction (cattle), which were certainly exploited. This is supported by the relatively high occurrence of adult and male sheep, which produce wool of higher quality, as well as the frequent occurrence of mandibles belonging to calves culled early in their first year and pathological conditions on cattle extremities related to consistent chronic physiological stress (Bartosiewicz *et al*. 1997) as indicated by the frequent pathological conditions on extremities (especially metapodials and phalanges). Detailed analyses on mortality profiles and male: female ratios in the future, however, will shed conclusive light into sheep and cattle husbandry strategies of the medieval period.

C.2.24 Pig husbandry appears to have been of complementary economic nature and possibly conducted on a different basis. While sheep and cattle husbandry were conducted on a large scale and possibly under the influence of more central economic and political agents (than the household level), most pigs were probably locally reared on a household level as indicated by the presence of neonatal (or indeed foetal) piglet remains. Another mammal that was possibly reared on the household level is the rabbit but its low percentages suggest that this was not a widespread practice, at least in sector of the settlement investigated here.

C.2.25 Several cat and equid (mostly horse) remains, despite the low percentages of these taxa, bore cutmarks, which indicates that beyond the usually assumed roles of transportation (for equids) and domestic companion and a check against vermin (for cats), these taxa may have been exploited for their skin/fur and meat. Only one dog bone was recorded with a possible chop mark and this suggests that dogs may have been viewed differently than cats and horses, at least concerning the possibility of consuming their meat.

C.2.26 The rarity of wild mammals is not surprising but it does confirm that during this period, interactions between humans and wild animals were rare. This is indicative of a depletion of the wider environment from large wild mammals, which was mainly occupied by cultivation, sheep and cattle. Legal restrictions and time constraints may have also posed obstacles for more frequent interactions with wild animals at Harvest Way.

C.2.27 The avian assemblage also revealed interesting insights into the site's economy. Geese and ducks were the most important taxa in Period 2, followed closely by galliforms (mainly domestic chicken). Domestic chickens were most probably reared at the site, as pigs and rabbits would have been, and also possibly exploited for their eggs. This interpretation is supported by the presence of many leg bones filled with medullary bone, which is present only in female birds shortly before, during and shortly after laying eggs (*cf*. Van Neer *et al*. 2002). The presence of many immature bones of galliforms, size 3 and size 4 anatids also constitutes evidence for the local rearing of chicken, domestic ducks and domestic geese, although it is methodologically difficult precisely to estimate the contribution, if any, of other galliform or wild anatid taxa. Within the size 4 anatid taxonomic category, there are at least two remains that are large enough to belong to, and morphologically compatible with, swan. If the single ciconiiform/gruiform remain is added to these, it is then plausible that some wild birds were also consumed at the site. Pigeons were also exploited at the site and the fact that many immature columbiform remains were recorded strengthens the interpretation involving dovecotes at the site, which was viewed as a symbol of status and privilege in many medieval contexts in late medieval and early modern East Anglia (Dallas 2013). The presence of several species of corvids cannot be explained in economic terms and it is the result of either the accidental inclusion in the site's waste or a cultural practice (*cf*. Serjeantson and Morris 2011) that cannot be yet deciphered with the data at hand.

C.2.28 The results of Period 3 are in most ways similar to those of Period 2 and, hence, it is assumed here that most of the inferences put forward above are valid for Period 3 as well. Despite the close similarity between the two periods concerning the two main pylons of the animal economy (*i.e*. sheep and cattle), as well as the overall faunal composition, there are some notable differences. Cattle appear to have gained in importance at the expense of sheep and pig but the modes of economic exploitation of these three main domestic taxa remained broadly stable. The same appears to be the case concerning equids, which continued to be frequently defleshed as indicated by the

frequent filleting and skinning marks on their remains. On the contrary, butchery marks were entirely absent from cat and dog remains, which may indicate a change in the attitude of people towards these taxa. The dog burial in fill 1721 provides evidence for the presence of rather small-bodied dogs, which were cared for to such a degree as to provide a careful burial and possibly care after a serious injury despite the unfortunate and painful death of the specific dog and her foetal puppies. Other canid remains from Period 3 suggest the presence of dog types with very large body size or, alternatively wolf (Plate C.2.4).

C.2.29 In Period 3, the picture concerning the exploitation of avian taxa remains very similar, with less evidence for the exploitation of additional anatid taxa (*e.g*. swan) or other avian taxa (*e.g*. ciconiiforms/gruiforms). Columbiform and corvid remains continue to be present in percentages similar to Period 2.

C.2.30 Concerning both Period 2 and 3, fish contribute a significant component to the diet.

C.2.31 The sample of Period 4 is quite small and of very limited reliability but it does provide some insight into human-animal interactions at the site. Economically, sheep and cattle continued to be the most significant taxa, although it is possible that pig became more important than in previous periods. The most important insight provided by the study of Period 4 faunal remains was the confirmed presence of the helmeted Guinea fowl, which may have been present at the site in earlier periods as well. Although the presence of Guinea fowl, originating from Africa, in Britain is placed in the 16th century, confusion surrounding the naming of this bird poses serious problems in reaching a consensus concerning the exact date of introduction (Poole 2010). Whatever the exact introduction date of this species in Britain, its history followed the opposite trajectory than that of another exotic galliform introduced at around the same time, the turkey. Whilst the turkey was gaining importance throughout Europe as a bird reared for food, the Guinea fowl never became very popular and it is possible that it was appreciated mostly for its appearance than its meat and eggs (Donkin 1991).

C.3 Shell

By Rhiannon Philp and Lexi Scard

Introduction and Methodology

C.3.1 A total of 24.90kg of marine shell was recovered from 199 contexts. The shells 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 the archaeological investigations (Table C.3.1).

Species	Common name	Habitat	Wt (kg)	No Cxts
Ostrea edulis	Oyster	Estuarine and shallow coastal water	23.76	175
Mytilus edulis	Mussel	Intertidal, salt water	0.61	45
Cerastoderma edule	Cockle	Intertidal, salt water,	0.04	14
Buccinum undatum	Whelk	Coastal water	0.48	4
Cypraeidae	Cowrie	Tropical and subtropical, shallow to relatively deep water	0.01	1

Table C.3.1. Overview of identified, quantified shell

C.3.2 Shells were recovered both in the field and from environmental samples. Only shell apices were quantified in order to obtain the Minimum Number of Individuals (MNI) for each species, bearing in mind that each individual would originally have had two apices. The MNI was arrived at by different means, depending on the species.

C.3.3 Oyster (*Ostrea edulis*) has a defined left and right valve. The left is, generally, more concave in shape and displays radiating ribs on the outer surface. The right is flatter and lacks the ribs, though concentric growth rings are often visible (Winder 2011, 11). Therefore, to obtain the MNI, the number of left and right valves were counted. The largest number was then taken as the MNI. In the case of cockle (*Cerastoderma edule*) and mussel (*Mytilus edulis*), it is much more difficult to identify the left and right valves and so the MNI was calculated by taking the full amount of valves and then halving it.

C.3.4 Oyster shell size has been recorded as an average for each assemblage. The measurement describes the length from the apex to the outer edge of the shell.

Results

C.3.5 Oyster shell predominates in the assemblage from this site. The size of the shells ranges from 3cm to 60cm, with the average size being 5cm. Several of the shells showed evidence of shucking, the term given to the process in which the shells are prised apart for consumption, including one valve from a clay-lined pit **3076** having visible knife damage. A large proportion of the assmblage were spats: oyster larvae attached to adult oyster shell. A select few of the valves showed signs of having been burnt, though this was not a consistent pattern noticed throughout the assemblage.

C.3.6 As well as oyster, mussel, cockle, whelk (*Buccinum undatum*) and cowrie (Cypraeidae) was also recovered from the site. Below, Tables C.3.2 to C.3.6 show the quantification and observations of all shell species recovered from site.

Ctxt	Feature type	Cut	Per	Wt (kg)	L	R	MNI	Size (cm)	Comments
2683				0.01	1	1	1	4	
2455					8	5	8	4-7	
1613	Surface		2	0.02	0	3	3	5	Shucking, some fragments.
921	Floor		2	0.01	1	0	1	5	
1265	Ditch	**1267**	2	0.01	0	1	1	5	Fragment
1286	Pit	**1335**	2	0.01	0	2	2	5	Shucking.
1339	Post hole	**1338**	2	0	1	0	1		Fragment
1441	Pit	**1420**	2	0.05	5	1	5	5	R valve burnt
1448	Pit	**1447**	2	0.03	2	1	2	5-6	
1499	Pit	**1503**	2	0.03	2	0	2	7	Shucking
1531	Pit	**1535**	2	0.01	0	2	2	5	Shucking
1529	Pit	**1535**	2	0.05	3	2	3	5-6	
1634	Pit	**1638**	2	0	0	1	1	4	
1640	Pit	**1644**	2	0	0	1	1	4	Fragment
1746	Well	**1747**	2	0.01	2	0	2	5	
1745	Well	**1747**	2	0.01	1	0	1	5	
1743	Well	**1747**	2	0.03	2	0	2	5 + 8	
1749	Pit	**1748**	2	0.01	0	1	1	>3	Fragment
1752	Well	**1750**	2	0.05	1	4	4	3-7	Spats on larger shell. All R valves smaller than main R, which matches spat L valve.
1809	Pit	**1783**	2	0.01	0	1	1	5	Fragment
1784	Pit	**1783**	2	0.04	1	2	2	6	Spats and shucking.
1862	Pit	**1794**	2	0.02	1	1	1	6	
1796	Pit	**1794**	2	0.11	6	5	6	5-6	Shucking
1795	Pit	**1794**	2	0.1	4	7	7	4-7	Shucking
1798	Pit	**1797**	2	0.04	2	0	2	6	
1843	Pit	**1853**	2	0.01	1	0	1	5	
1897	Ditch	**1896**	2	0.01	0	1	1	5	
2860	Well	**1927**	2	0.01	1	0	1	5	

Ctxt	Feature type	Cut	Per	Wt (kg)	L	R	MNI	Size (cm)	Comments
2498	Pit	**1940**	2	0.07	7	1	7	4-7	
2496	Pit	**1940**	2	0.44	39	32	39	4-6	Spats, shucking.
2273	Pit	**1940**	2	0.08	5	5	5	5-6	Lots of spats. Uniform size.
2064	Pit	**1940**	2	0.1	6	9	9	5	Shucking
2063	Pit	**1940**	2	0.18	17	17	17	4-6	Shucking. 1 possible burnt.
1968	Pit	**1940**	2	0.53	41	54	54	4-5	1 L valve has evidence of burning.
1963	Pit	**1940**	2	0.09	8	6	8	5	
1941	Pit	**1940**	2	0.54	44	44	44	3-7	Knife damage to 2 L valves (probably from shucking).
2067	Pit	**1969**	2	0.07	10	3	10	4-6	Evidence of burning on 1 R valve. + Fragments.
2022	Pit	**1969**	2	0.03	2	2	2	4-5	
2021	Pit	**1969**	2	0.02	0	2	2	5	Shucking
1973	Pit	**1969**	2	0.01	1	0	1		+ fragments
1971	Pit	**1969**	2	0.01	0	2	2	5	
1970	Pit	**1969**	2	0.03	4	0	4	5	
2039	Pit	**2038**	2	0.02	0	3	3	5	Shucking
2163	Pit	**2173**	2	0.14	7	12	12	4-6	Shucking
2201	Pit	**2200**	2	0.03	3	3	3	4.5	
2221	Pit	**2220**	2	0	1	0	1	4	Fragmented
2239	Pit	**2237**	2	0.01	0	1	1	5	Spats
2502	Pit	**2272**	2	0.08	6	3	6	5-7	One R valve has evidence for burning on edge.
2285	Pit	**2275**	2	0.02	2	0	2	5	
2284	Pit	**2275**	2	0.13	8	13	13	5	
2290	Ditch	**2289**	2	0.03	0	1	1	6	
2317	Pit	**2318**	2	0.01	0	1	1	5	
2311	Pit	**2318**	2	0.01	1	0	1	5	
2309	Pit	**2318**	2	0	0	1	1	5	Fragment
3088	Well	**2412**	2	0.07	2	5	5	5-6	
3087	Well	**2412**	2	0.02	2	2	2	4-5	
2869	Well	**2412**	2	0.03	1	3	3	4-6	
2493	Pit	**2486**	2	0.02	1	2	2	6	
3269	Well	**2554**	2	0.02	0	1	1	7	
3267	Well	**2554**	2	0.01	1	0	1		Fragments – no apices.
3213	Well	**2554**	2	0.02	1	1	1	5	
3146	Well	**2554**	2	0.02	1	0	1	8	Possible shucking
2867	Well	**2554**	2	0.01	0	1	1	5	
2866	Well	**2554**	2	0.06	2	4	4	4-7	Shucking
2628	Pit	**2630**	2	0.01	1	0	1	6	Possible shucking.
2664	Pit	**2665**	2	0.01	1	0	1	4	
2667	Pit	**2671**	2	0.03	0	2	2	5	
2667	Pit	**2671**	2	0.03	1	0	1	6	
2676	Pit	**2682**	2	0.01	0	1	1	5	
2707	Pit	**2713**	2	0.01	0	1	1	5	
2717	Pit	**2714**	2	0.03	1	2	2	5	Shucking
2716	Pit	**2714**	2	0.01	1	0	1	6	
2732	Pit	**2725**	2	0.01	1	1	1	4	
2738	Pit	**2737**	2	0.01	1	0	1	5	
2868	Clay-lined tank	**2851**	2	0.05	3	4	4	4-6	
2952	Pit	**2953**	2	0.02	1	0	1	5	Shucking
3001	Pit	**2996**	2	0.01	1	0	1	6	
3078	Clay-lined pit	**3076**	2	0.08	6	6	6	4-5	Knife damage on 1 L valve.

Ctxt	Feature type	Cut	Per	Wt (kg)	L	R	MNI	Size (cm)	Comments
3098	Pit	**3097**	2	0.01	0	2	2	5	
3108	Pit	**3103**	2	0.01	0	1	1	5	Shucking
3134	Pit	**3133**	2	0	0	1	1	5	Shucking
3138	Clay-lined tank	**3137**	2	0.48	27	21	27	5-7	Shucking. 1 burnt R valve.
3202	Pit	**3199**	2	0	0	1	1	4	
3233	Pit	**3238**	2	0.03	1	0	1	4	
3277	Clay-lined tank	**3280**	2	0.03	1	2	2	3-5	
3349	Pit	**3351**	2	0.01	1	0	1	5	
3348	Pit	**3351**	2	0.02	0	4	4	4	Shucking
3368	Pit	**3354**	2	0.01	0	1	1	4	
3367	Pit	**3354**	2	0.02	1	2	2	4-5	Spats.
3353	Pit	**3354**	2	0.02	0	4	4	4	
3380	Pit	**3381**	2	0.01	1	0	1	5	
3639	Well	**3388**	2	0.02	1	0	1	6	
3638	Well	**3388**	2	0.03	2	0	2	4+7	
3587	Well	**3388**	2	0.02	0	2	2	5	
3387	Well	**3388**	2	0.02	0	1	1	7	Shucking?
3399	Pit	**3397**	2	0	0	1	1	4	
3467	Pit	**3451**	2	0.09	4	4	4	5-7	
3465	Pit	**3451**	2	0.12	7	12	12	3-7	1 of L valves larger than all others (including R valves).
3463	Pit	**3451**	2	0.18	12	13	13	4-6	Spats, shucking.
3461	Pit	**3451**	2	0.12	11	8	11	3-7	Shucking. Spats. + fragments. L valves larger.
3460	Pit	**3451**	2	0.1	26	19	26	4-7	Knife hole through centre. L valves bigger than R valves. Spats.
3459	Pit	**3451**	2	0.15	7	15	15	3-7	Most small, 1 large L valve. Possible shucking. Some spats.
3457	Pit	**3451**	2	0.1	7	8	8	4-6	Shucking
3454	Pit	**3451**	2	0.04	6	0	6	4-5	
3477	Pit	**3478**	2	0.01	1	0	1	5	Possible Shucking
3502	Pit	**3499**	2	0.01	0	2	2		Fragments
3502	Pit	**3499**	2	0.01	2	2	2	4-60	Not matching pairs.
3501	Pit	**3499**	2	0.02	1	0	1	6	
3531	Pit	**3533**	2	0.01	1	1	1	3	Fragments
3530	Pit	**3533**	2	0.01	2	0	2	4	broken
3534	Pit	**3537**	2	0.01	1	0	1	9	Long and thin
3538	Pit/Post hole	**3539**	2	0.01	0	1	1	5	
3553	Pit	**3557**	2	0.02	1	0	1	6	
3010	Pit	**99**	2	0	0	1	1		
103	Pit	**99**	2	0.04	3	1	3	5-7	
101	Pit	**99**	2	0.03	2	1	2	6-7	
990	Pit	**991**	2	0.01	0	2	2	4	Shucking
992	Pit	**993**	2	0.01	0	1	1	6	Shucking
3164			3	0	1	0	1	4	
2666	Build up		3	0.01	1	0	1	5	
1141			3	0.01	0	1	1		
845			3	0.04	1	1	1	7	R= fragment
630	Garden soil		3	0.03	1	0	1	7	
414			3	0.01	1	1	1	5	R valve burnt
78	Levelling layer		3	0.02	1	1	1	6	Shucking.
75	Floor		3	0.02	1	0	1	7	
2348	Pit	**1424**	3	0.01	1	0	1	5	

Ctxt	Feature type	Cut	Per	Wt (kg)	L	R	MNI	Size (cm)	Comments
2117	Pit	**1424**	3		0	1	1	9	Shucking
1888	Pit	**1424**	3	0.02	1	1	1	6	
2249	Well	**1456**	3	0.03	2	1	2	5-6	Shucking
2248	Well	**1456**	3	0.01	1	0	1	6	
2217	Well	**1456**	3		0	1	1	5	Shucking
1460	Well	**1456**	3	0.06	9	6	9	4-5	
1459	Well	**1456**	3	0	0	1	1	4	
1457	Well	**1456**	3	0.07	7	2	7	4-6	
1564	Pit	**1565**	3		1	0	1	6	
1574	Pit	**1573**	3	0.01	1	1	1	5	Shucking
1667	Ditch	**1668**	3		0	1	1	5	Shucking
1859	Pit	**1858**	3	0.02	0	4	4	4	
2031	Building	**2061**	3	0.01	0	1	1	5	
2028	Building	**2061**	3	0.09	6	4	6	3-7	
2025	Building	**2061**	3	0.06	2	1	2	5-7	
2024	Building	**2061**	3	0.01	1	0	1	5	
2162	Pit	**2157**	3	0.17	11	18	18	2-5	Shucking. Couple of very small individuals – possible contaminants (have their matching opposite valves). 1 larger valve with spats.
2158	Pit	**2157**	3	0.09	4	5	5	4-7	1 larger R valve.
2386	Pit	**2387**	3	0.03	1	3	3	5-6	
2473	Cellar	**2474**	3	0.04	1	0	1	8	Very thick.
2616	Pit	**2612**	3	0.13	2	4	4	6-11	1 very big L valve (11cm). Does not match any other valves. Average size = 6cm. Shucking.
2614	Pit	**2612**	3	0.05	1	3	3	6	Shucking
2631	Pit	**2636**	3	0.01	0	1	1	6	
2922	Pit	**2923**	3	3.46	105	120	120	5-9	Shucking. Lots of fragments.
2850	Pit	**3002**	3	0	0	1	1	>3	Fragment
3029	Post hole	**3030**	3		1	0	1	5	Fragment
3066	Pit	**3065**	3	0.04	5	5	5	3-5	+ fragments.
3232	Pit	**3364**	3	0.03	1	6	6	4-5	
3507	Pit	**3503**	3	0.57	41	71	71	3-5	Shucking, Spats.
3506	Pit	**3503**	3		6	2	6	6-7	
3504	Pit	**3503**	3	0.09	7	11	11	4-6	
3529	Post hole	**3528**	3	0.03	3	4	4	4-5	All quite small and flat.
818	Ditch	**816**	3	0.09	2	2	2	7	Spats
829	Ditch	**830**	3	0.1	9	5	9	4-5	
984	Pit	**985**	3	0.01	1	0	1		Fragments
2832	Floor		4	0.01	1	0	1	4	
2817	Levelling		4	0.01	0	1	1	5	
1778	Pit	**1777**	4	0.03	1	0	1	8	
2187	Building	**2182**	4	0.04	0	3	3	5-6	
2186	Building	**2182**	4	0.01	0	1	1	5	
2216	Pit	**2215**	4	0.04	1	0	1	8	
2495	Pit	**2494**	4	0.04	0	4	4	5-6	
2766	Pit	**2765**	4	11.7	307	342	342	5-11	Great variation in size. Small number of 10-11cm. Average size = 6-7cm. Lots of 5 cm examples and lots of fragments. All clear apices were counted.
2834	Wall foundation trench	**2833**	4	0.01	1	0	1		Fragments
3391	Pit	**3389**	4	0.01	1	1	1	5	
3390	Pit	**3389**	4	0.03	1	1	1	7	

Ctxt	Feature type	Cut	Per	Wt (kg)	L	R	MNI	Size (cm)	Comments
3596	Pit	**3589**	4	0.05	0	2	2	8	Shucking.
3607	Pit	**3609**	4	0.49	10	8	10	8-10	Much larger, barnacles
Total				*23.76*	*978*	*1080*			

Table C.3.2: *Oyster shell*

Ctxt	Feature type	Cut	Per	Wt (Kg)	Total	MNI	Comments
1441	Pit	**1420**	2	0	1	1	Fragments
1529	Pit	**1535**	2	0	3	2	
1784	Pit	**1783**	2	0	1	1	Fragments
1843	Pit	**1853**	2	0	2	1	Fragments
1941	Pit	**1940**	2	0.01	3	2	Fragments
2063	Pit	**1940**	2	0.11	2	1	Fragments
2496	Pit	**1940**	2	0	2	1	
1971	Pit	**1969**	2	0.01	1	1	Lots of fragments, only 1 apices.
1973	Pit	**1969**	2	0.02	3	2	Fragments
2067	Pit	**1969**	2	0	1	1	
2201	Pit	**2200**	2	0.01	2	1	
2281	Pit	**2272**	2	0	1	1	Fragments – no apices.
2311	Pit	**2318**	2	0.01	1	1	
2867	Well	**2554**	2	0.01	1	1	Fragments
2667	Pit	**2671**	2	0	1	1	Fragments – 1 apices.
2716	Pit	**2714**	2	0.01	3	2	Fragments
3078	Clay-lined pit	**3076**	2	0	1	1	Fragments
3138	Clay-lined tank	**3137**	2	0	1	1	Fragments
3371	Oven	**3370**	2		1	1	Fragment
3450	Oven	**3370**	2	0.1	50	25	Lots of fragments – only apices counted.
3456	Pit	**3451**	2	0.1	33	17	Lots of fragments – only apices counted.
3460	Pit	**3451**	2	0.01	2	1	
3461	Pit	**3451**	2	0	1	1	Only 1 apices
3463	Pit	**3451**	2	0.01	6	3	
3465	Pit	**3451**	2	0	1	1	
3530	Pit	**3533**	2	0.01	1	1	
3532	Pit	**3533**	2	0	2	1	Fragment
3534	Pit	**3537**	2	0	1	1	
3010	Pit	**99**	2	0	1	1	Fragments
75	Floor		3	0	1	1	Fragments
1457	Well	**1456**	3	0	2	1	
1460	Well	**1456**	3	0	1	1	
2028	Building	**2061**	3	0.03	1	1	
2158	Pit	**2157**	3	0.01	2	1	
2162	Pit	**2157**	3	0.01	1	1	Fragments
2386	Pit	**2387**	3	0	2	1	
3232	Pit	**3364**	3	0	2	1	
3504	Pit	**3503**	3	0	1	1	Fragments
3507	Pit	**3503**	3	0.01	5	3	+ Fragments
829	Ditch	**830**	3	0.01	2	1	
214			4	0	1	1	Fragments – no apices
694	Levelling		4	0	1	1	
2906	Levelling		4	0.01	1	1	
1009	Pit	**1010**	4	0.01	3	2	Fragments
2766	Pit	**2765**	4	0.1	27	14	Quite large examples. Mostly whole. One with square hole – possible knife damage?
Total				*0.61*	*182*		

Table C.3.3: *Mussel shell*

Context	Feature type	Cut	Per	Weight	Total	MNI	Comments
1448	Pit	**1447**	2	0	1	1	
1796	Pit	**1794**	2	0	1	1	
2201	Pit	**2200**	2	0	1	1	Fragment
3464	Pit	**3451**	2	0	1	1	
3454	Pit	**3451**	2	0	1	1	
2335	Pit	**1424**	3	0.01	6	3	Uniform size
2333	Pit	**1424**	3	0.01	2	1	
2119	Pit	**1424**	3	0	1	1	
1888	Pit	**1424**	3	0.01	3	2	Uniform size
2249	Well	**1456**	3	0.01	2	1	Only 1 apices, but other fragments does not match.
2158	Pit	**2157**	3	0	1	1	Fragment
3232	Pit	**3364**	3	0	1	1	
3504	Pit	**3503**	3	0	1	1	
1915	Pit	**1914**	4	0	1	1	Fragment – would have been quite large if complete.
Total				*0.04*	*23*		

Table C.3.4: *Cockle shell*

Ctxt	Feature type	Cut	Per	Wt (Kg)	Total	MNI	Comments
2867	Well	**2554**	2		1	1	6cm long
2922	Pit	**2923**	3	0.01	1	1	3cm long
2197	Pit	**2199**	4	0.02	1	1	Polished? Very thick. Possibly ornament rather than food.
2766	Pit	**2765**	4	0.45	86	86	Mixture of sizes from 3-8cm long. Average = 4cm.
Total				*0.48*	*89*		

Table C.3.5: *Whelk shell*

Ctxt	Feature type	Cut	Ph	Weight	Total	MNI	Comments
812	Floor		3	0.01	1	1	Unlikely to be food. Quite small – 4cm long by 1.5cm wide. SF# 286. Special significance?

Table C.3.6: *Cowrie shell*

Discussion

C.3.7 Oyster shell is the most common type in this assemblage at 95.4%. The oyster shell appears to be spread across the site within 174 contexts. More specifically, the vast majority of oyster was recovered during Period 2 of the site, closely followed by Period 3 and came from the fills of pits. No shell was found within features of the first phase of the site, and only a few shells were recovered from Period 4. To put this into context, Period 1 refers to the pre-medieval period; Period 2 is medieval; Period 3 is post-medieval and Period 4 is post 1800. This means that the majority of oyster shell was deposited during the medieval and post-medieval period, which is to be expected as shellfish, along with fish, was a key part of the diet throughout this time. More particularly, it would have been consumed religiously on Fridays and during Lent in the medieval period. The shells would have been discarded in middens which were often used for manuring cultivated fields (Fosberry 2010). To further support the argument that the presence of oyster shell represents consumption and disposal of oyster, one can look at the distribution of the features which shell was recovered from. The largest quantities of shell came from pits **3451**, **2923** and **3503**. All three of these features were found to be in close proximity to contemporary postholes: specifically posthole structures. It would seem sensible to have a midden in said location, to allow for easy disposal, whilst not having the rubbish pits within the structures themselves, to avoid smells *etc*.

C.3.8 Pit **2765** contained the largest quantity of oyster shell on site. This is interesting because the pit is from Period 4 of the site, thus dates to post 1800. At this time, the general consumption and trade of oyster changed rather considerably and it was lesser known for the shells to be discarded of in pits. Pit **2765** is also the feature that produced the greatest quantity of whelk during excavation. This, fairly small, pit was uncovered next to domestic buildings dating from *c.*1830. Given the familiar situation of pits outside structures, it can be confidently argued that this, again, is a midden (oyster was still consumed post 1800, just overall in a different manner). The most probable argument for such an abundance of shell here is that it is remnant of a large feast(s). It is not unlikely that there was a celebration at this location, and that the shell-filled pit was a product of this.

C.3.9 A considerable amount of oyster shell was recovered from clay-lined tank **3137**. Though different in form to the 'standard' middens, it is notable that this example was within a plot which contained at least three ovens/hearths and five clay-lined pits. It is, at this stage, believed that the clay-lined features are reflective of crop-soaking, though the specifics are not yet certain. Being in such close proximity to ovens/hearths as well as crop processing, it can strongly be suggested that this midden is another good example of disposal following consumption of oyster during the medieval period. The ovens/hearths would also explain the presence of seemingly burnt shell.

C.3.10 Shell fragments from within redeposited layers at Harvest Way could possibly have derived from Barnwell Priory or from the popular Midsummer Fair granted to the Canons of Barnwell in 1211 and situated to the north of the site (Lee 2005, 118). Stalls selling shellfish along with other goods were common at the Fair, the legacy of which can be seen about half a mile to the east of Harvest Way, with road names such as Oyster Row and Garlic Row.

C.3.11 Prior to eating, the preparation of oysters consists of the right valve being prised off and sometimes discarded separately, with the meat being left in the left valve. Equal numbers of left and right valves being found together in features signifies that the oysters were being prepared and eaten together. The shell on this site occurs in assemblages with relatively even numbers of both left and right valves, suggesting the oysters were being prepared and consumed at the same location. This would accord with the idea that they were related to the Fair; perhaps being consumed close to the stall from which they were bought. Any waste collected up after would then represent both sides of the process and could have been deposited in rubbish pits at the nearby location of Harvest Way.

C.3.12 Across the site, oyster shell was reasonably uniform in size, with some examples recorded as very large (>10cm). Oysters of a uniform size usually represent a particular time of harvesting. The larger the oyster, the longer they will have been left before being harvested. Smaller oysters would imply an immediate need for food, or perhaps a period of bad harvest. Medieval oyster shell tends to be smaller than those of earlier periods due to intensification of harvesting (Winder 1993). In this assemblage, the valves average approximately 4-6cm. Some of the smaller shells were possibly juvenile spats that had been harvested too early. Many of the adult shells showed signs of young spats seeding from their own shells, which is common in overcrowded oyster beds.

C.3.13 The percentage of mussels (0.2%), cockles (0.2%) and whelk (2%) on this site are very low. Whilst such shellfish was consumed during the medieval period, the excavation did not produce large enough quantities of these shells to suggest intentional harvest or

consumption on this site. A possible explanation is that these three species were contaminants of the oyster harvests.

C.3.14 On the whole, the shells were moderately preserved and did not appear to have been deliberately broken or crushed. There was evidence on many of the oysters of damage likely to have been caused during the opening (shucking) process, in the form of small 'v' or 'u' shaped holes at the centre of the outer edge, usually on the left hand valve. This supports the argument that the shells are remnants of food waste.

C.3.15 Cowrie shell is an anomaly on the site. It is unlikely that these ecofacts are connected to diet in this instance. Perhaps more probable is the theory that it was a personal curiosity owned by one of the inhabitants of the site. A polished whelk was also recovered, which might be interpreted in the same way. Again, one could also argue that said species were contaminants of other harvests, and that they were not intentionally collected

C.4 Insect Remains

By Geoff Hill

Background

C.4.1 Two samples of waterlogged material from medieval well features from Coldhams Lane were submitted for insect analysis. Sample 50 / Context 533, excavated from the base of a well (**190**) relates to Period 2 within the site phasing. Sample 55 / Context 555, excavated from near the bottom of a well (**481**) relates to Period 2.

C.4.2 An initial assessment of the insect remains from these samples was undertaken by Dr Kim Vickers, who noted a generally rich and well preserved fauna, consisting largely of phytophages, detrivores (dung and vegetative), but with few aquatic beetles and no synanthropes (Atkins, 2013).

Laboratory Methods

C.4.3 To concentrate the sub-fossil sclerite fraction, the four bulk samples were processed following the standard paraffin flotation methods outlined in Kenward *et al.* (1980). Insect remains were sorted and identified under a low-power binocular microscope at magnifications between x15 – x45. Where achievable the insect remains were identified to species level by direct comparison to specimens in the Gorham and Girling insect collections, housed in the Department of Classics, Ancient History and Archaeology, University of Birmingham. The nomenclature and taxonomic order presented follows the BugsCEP database (Buckland, 2006) which uses Lucht (1987), revised Böhme (2005), and Gustafsson (2005).

Results

C.4.4 Details of analysed samples and associated features and dates are presented in Table C.4.1.

Sample	Context	Wt (kg)	Volume (L.)	Associated features	Period
50	533	10.5	5.5	Well **190**	2 (1200-1350/1400)
55	555	9.5	5.5	Well **481**	2 (1350-1400)

Table C.4.1 Details of Samples for archaeoentomological analysis from Coldhams Lane Cambridge

C.4.5 The majority of the insect remains present are beetles (Coleoptera), alongside some true bug (Hemiptera) remains. A list of Coleoptera recovered is presented in Table

C.4.2. The nomenclature for Coleoptera (beetles) follows that of Lucht (1987). The list of host and associated plants (Table C.4.2) for the phytophagous species of beetle that were recovered are predominantly derived from Koch (1989; 1992), but include other sources found in BugsCEP database (Buckland, 2006) where referenced. The plant taxonomy follows that of Stace (2010).

	Context	533	555	
	Sample Number	50	55	
COLEOPTERA	**Ecological Code**			**Associated plants / pests**
CARABIDAE				
Carabus nemoralis (Müll.)	-	1		
Trechus ?obtusus (Er.)	-		3	
Bembidion gilvipes (Sturm)	ws		1	
Bembidion spp.	-	2		
Ophonus rufibarbis (F.)	p		4	
Pseudoophonus rufipes (Deg.)	p	1	1	Known pest of *Fragaria* (strawberry) / non-obligate
Harpalus affinis (Schrank)	p		1	
Bradycellus ?verbasci (Duft.)	p		1	
Acupalpus ?parvulus (Sturm)	-	1		
Pterostichus madidus (F.)	-	1	2	Reported pest on *Fragaria*
Calathus fuscipes (Goeze)	p		1	
Calathus micropterus (Duft.)	-		1	
Calathus sp.	-	1		
Agonum ?marginatum (L.)	ws	3		
Agonum sp.	-	1		
Amara curta (Dej.)	-	1	3	
GYRINIDAE				
Gyrinus sp.	a	1		
HYDRAENIDAE				
Ochthebius spp.	a		8	
Helophorus nubilus (F.)	p	2	1	Pest of *Triticum* (wheat)
HYDROPHILIDAE				
Cercyon pygmaeus (Ill.)	df	1		
Megasternum obscurum (Marsham)	rt	3	4	
CATOPIDAE				
Ptomaphagus ?medius (Rey)	rt		1	
ORTHOPERIDAE				
Corylophus crassidoides (Marsham)	rt		2	
Orthoperus spp.	l		2	
PTILIIDAE				
Ptiliidae indet.	-		1	

STAPHYLINIDAE				
Staphylinidae indet.	-		1	
Micropeplus porcatus (F.)	rt	1	1	
Megarthrus spp.	rt		2	
Proteinus brachypterus (F.)	rt		1	
Eusphalerum primulae (Steph.)	-	2		Associated with *Primula* (primrose)
Omalium caesum (Grav.)	rt		2	
Lesteva spp.	ws	2	1	
Anotylus rugosus (F.)	rt	3	1	
Anotylus inustus (Grav.)	df		2	
Anotylus sculpturatus (Grav.)	rt	12	25	
Anotylus nitidulus (Grav.)	ws	2		
Anotylus clypeonitens (Pand.)	t		1	
Platystethus arenarius (Geoff.)	df		1	
Platystethus nitens (Sahl.)	ws	1		
Stenus spp.	-	1	2	
Lathrobium spp.	-	2	1	
Gyrohypnus fracticornis (Müll.)	rt	2	1	
Xantholinus linearis (Ol.)	rt		1	
Philonthus spp.	-	2	3	
Gabrius sp.	-		1	
Tachyporus chrysomelinus (L.)	-	1	1	
Tachyporus spp.	-	4	1	
Tachinus spp.	-	2		
Drusilla canaliculata (F.)	-		3	
Aleocharinae indet.	-	17	3	
PSELAPHIDAE				
Pselaphidae indet.	-		1	
ELATERIDAE				
Actinicerus sjaelandicus (Müll.)	-		1	
Athous bicolor (Goeze)	p		3	
DERMESTIDAE				
Anthrenus sp.	h		1	
CUCUJIDAE				
Monotoma ?testacea (Mots.)	rt		1	
CRYPTOPHAGIDAE				
Cryptophagus spp.	h		1	
Atomaria spp.	h	3	3	
LATRIDIIDAE				
Latridius spp.	h	5	2	
Corticaria spp.	rt	4	4	
Cortinicara gibbosa (Hbst.)	rt		1	

MYCETOPHAGIDAE				
Typhaea stercorea (L.)	-		1	
COLYDIIDAE				
Anommatus duodecimstriatus (Müll.)	rt		1	
ENDOMYCHIDAE				
Mycetaea subterranea (Marsham)	h		1	
COCCINELIDAE				
Coccidula rufa (Hbst.)	-		2	
ANOBIIDAE				
Anobium punctatum (Deg.)	l (h)	4		
SCARABAEIDAE				
Oxyomus sylvestris (Scop.)	df		1	
Aphodius sphacelatus (Panz.)	df	1		
Aphodius foetidus (Hbst.)	df	1		
Aphodius fasciatus (Ol.)	df	2		
Aphodius ater (Deg.)	df		2	
CHRYSOMELIDAE				
Phratora vitellinae (L.)	-		2	*Salix/Populus*
Phyllotreta vittula (Redt.)	p		5	Poaceae, recorded pest on crops
Phyllotreta nemorum (L.)	p	1	4	Brassicas –pest 'cabbage flea-beetle'
Phyllotreta undulata (Kuts.)	p		1	Brassicas - pest
Phyllotreta spp.	-	4	7	
Altica sp.	-	1	1	
Batophila rubi (Payk.)	-		1	*Rubus* / *Fragaria* (raspberrys / strawberrys) not recorded as pest
Chaetocnema subcoerulea (Kuts.)	-	2	1	*Carex* (sedge)
Psylliodes ?napi (F.)	-	5		Brassicas (inc. cabbage)
Psylliodes cupreus (Koch)	p	5	3	Brassicas
Psylliodes spp.	-	1		
SCOLYTIDAE				
Leperisinus fraxini (Panz.)	dw		1	
CURCULIONIDAE				
Apion spp.	p	5		
Pseudapion rufirostre (F.)	p	2	1	*Malva sylvestris* (common mallow)
Aspidapion aeneum (F.)	-	2	3	Malvaceae

Taeniapion urticarium (Hbst.)	p	2	1	*Urtica* spp. (nettles)
Sitona ?cylindricollis (Fahr.)	p		1	*Melilotus* spp. (sweet clover)
Sitona spp.	-	1	1	
Hypera pastinacae (Rossi)	p		1	*Pastinaca sativa* (parsnip) and *Daucus carota* (carrot)
Ceutorhynchus erysimi (F.)	p	1	3	*Capsella bursa-pastoris* (shepards purse)
Parethelcus pollinarius (Forst.)	-		1	*Urtica* spp.
Datonychus urticae (Bohe.)	-		1	*Stachys sylvatica* (hedge woundwort)
Ceutorhynchus sp.	p		1	
Nedyus quadrimaculatus (L.)	p		4	*Urtica* spp.
MNI		**126**	**162**	**∑288**

Ecological Coding.

a = aquatic water beetles
ws = waterside taxa often associated with emergent vegetation
df = taxa often associated with dung
p= taxa associated with grassland and open areas
l = taxa associated with trees / woodland
dw = taxa associated with deadwood
h = 'house fauna' synanthropic beetles, *sensu* Hall & Kenward (1990)
rt = decomposer beetles

Table C.4.2 Beetles (Coleoptera)

C.4.6 In order to aid interpretation, where possible, taxa have been assigned to ecological groupings via the ecological data available in BugsCEP (Buckland, 2006). This grouping of Coleoptera follows a simplified version of the scheme suggested by Robinson (1981; 1983) with the addition of Kenward's (Hall and Kenward 1990) 'house fauna'. This 'house fauna' comprises of a suite of beetles with a particular affinity to human habitation and settlement, making home in the dry timbers or roofing and bedding materials of buildings. The affiliation of each beetle species to a particular ecological grouping is indicated in the second column of Table C.4.2. The meaning of each ecological code is explained in the key at the base of Table C.4.2. The occurrence of each of the ecological grouping is expressed as a percentage in Table C.4.3. The pasture/grassland, dung, tree and 'house fauna' taxa are calculated as percentages of the number of terrestrial species, as opposed to the whole fauna, where uncoded, true aquatic and waterside taxa are included.

Context	**533**	**555**
Total number of individuals	126	162
Total number of species	49	75
% aquatic	1%	6.2%
% waterside	8.3%	1.6%
% dung foul / terrestrial	10%	8.7%

% tree / terrestrial	10.3%	6.7%
% grassland and pasture / terrestrial	40%	40.6%
% 'house fauna' / terrestrial	16%	11.6%
% decomposer / terrestrial	26%	34.8%

Table C.4.4 The proportions of the ecological grouping

C.4.7 A total of 388 individuals were recovered in total, from 95 taxa, with a good recovery and preservation across both samples. A greater number of individuals and species were recovered from C555 (Table 3). The species *Anotylus rugosus* was present in sufficient numbers in both samples (>10% of the total assemblage), as to be deemed 'superabundant'. This was subsequently removed from functional group calculations as this represents an autochthonous breeding population (Kenward, 1988).

C.4.8 Although a greater number and diversity of species is present in C555, there is little difference in the proportion of the ecological groups and the autecology of the individual taxa, across both samples. Both samples are discussed together below.

Discussion

C.4.9 As suggested in the post-excavation assessment (Atkins, 2013) there are few aquatic fauna associated with this deposit (Table C.4.3). Moreover, a lack of waterside taxa further suggest that the surrounding ground was also relatively dry (Table C.4.3).

C.4.10 The terrestrial fauna is strongly associated with open, disturbed and grassy/cultivated ground (40%, Fig. 2). This includes a fairly diverse suite of ground beetles (Carabidae), including *Pseudoophonus rufipes*, *Harpalus affinis*, *Bradycellus ?verbasci* and *Calathus fuscipes*. Although not strictly an open ground species, *Pterostichus madidus* is a seed eating Carabid, which alongside *Pseudoophonus rufipes* and *Batophila rubi*, may possibly suggest local cultivation of *Fragaria* (strawberry) (Koch, 1989, 1992).

C.4.11 The large numbers of leaf beetles (Chrysomelidae) present in these samples were likely pests of cultivated Brassicas, with *Phyllotreta nemorum* 'the yellow striped cabbage flea-beetle' and *Psylliodes ?napi* suggesting cabbage maybe a likely crop (Mohr, 1966; Duff, 1993). *Phyllotreta vittula* and *Helophorus nubilus* suggest cereal cultivation (Hansen, 1987; Koch, 1992), the latter 'wheat shoot beetle' particularly indicating *Triticum* (wheat), a cultivar recorded also in the archaeobotanical assessment (Atkins, 2013).

C.4.12 The identified weevils (Curculionidae) recorded from these samples are also associated with herbaceous weeds typical of cultivated and disturbed ground, including *Malva* spp. (*Pseudapion rufirostre* and *Aspidapion aeneum*), *Urtica* spp. (*Taeniapion urticarium, Parethelcus pollinarius* and *Nedyus quadrimaculatus*), *Melilotus* spp. (*Sitona ?cylindricollis*) and *Capsella bursa-pastoris* L. (*Ceutorhynchus erysimi*). A further Curculionid, *Hypera pastinacae*, may further suggest the presence of either carrot and/or parsnip as another possible cultivar (Koch, 1992).

C.4.13 The generalist fauna associated with decomposing organic matter ('rt'), typically from the Staphylinidae family, are present in large numbers in both samples (25-35%), reflecting the build-up of refuse. Here, these are probably indicative of agricultural resources, such as haystacks, compost heaps and manure. As suggested in the post-excavation assessment (Atkins, 2013), the wells may have been used for dumping settlement and agricultural waste, and it is likely many of these beetles in particular, reflect this deposition.

C.4.14 Contrary to the initial assessment of Coleopterous remains (Atkins, 2013), however, a fairly substantive number of synanthropic fauna, were recovered, including a number of the 'house fauna', including *Anthrenus* sp., *Cryptophagus* spp., *Atomaria* spp., *Latridius* spp., *Mycetaea subterranea* and *Anobium punctatum*. Other known synanthropes include a blind hypogaean species, *Anommatus duodecimstriatus*, which as well as being recorded at the roots of various cultivars (e.g. potato, cabbage and onions) can be found under decaying floorboards as well as mouldy straw (Koch, 1989). *Typhaea stercorea* is recorded indoors both in grain stores (although not as a pest) as well as hay and other moulding materials (Koch, 1989). These are likely present in the well as a result of the deposition of waste materials from nearby buildings and settlement.

C.4.15 The proportions of dung beetles, largely from the Scarabaeidae family, are present in fairly low proportions < 10%, suggesting that the site wasn't predominantly pastoral. Instead, these beetles likely inhabited manure and compost heaps, or, perhaps, the dung of working herbivores (e.g. Kenward and Carrot 2001).

C.4.16 The smallest group, proportionally, were the beetles associated with woodland and trees, suggesting the presence only of a predominantly cleared landscape.

Conclusions

C.4.17 Both assemblages reveal a largely cleared landscape, used primarily as agricultural land. A number of identified beetles may suggest a local cultivation of strawberry and cabbage, and possibly carrots or parsnip. As suggested in the initial assessment, the presence of cereals, particularly wheat, is also highlighted in these assemblages, as are a suite of insects which indicate herbaceous weeds typical of cultivated land. The large number of generalist detritivores are symptomatic of a build-up of organic matter, probably from composting materials and farm waste.

C.4.18 A significant presence of synanthropic beetles, particularly of the 'house fauna', would suggest that waste from nearby agricultural/storage buildings were deposited in the features once they fell out of use. A relative lack of dung associated fauna, however, would suggest animals were not set to pasture or housed nearby.

C.4.19 There are no records of archaeoentomological assessment from Cambridge based excavations during these periods, however, these results are in keeping nationally with analyses of post Bronze Age sites, which show gradual woodland clearance and the development of both arable and pastoral landscapes through to the medieval period. (Robinson 1978; Robinson 1979; Robinson 1993; Robinson and Lambrick 2009; Smith, 2009a, 2009b, 2014; Hill, 2015).

C.5 Pollen

By Mairead Rutherford

Introduction

C.5.1 Six sub- samples taken through the fills of two silted up wells and one cess pit, were submitted for analysis. The sub-samples are of medieval to post-medieval age.

Quantification

C.5.2 Volumetric samples were taken from six sub-samples and one tablet containing a known number of *Lycopodium* spores was added so that pollen concentrations could be calculated (Stockmarr 1971). The samples were prepared using a standard chemical procedure (method B of Berglund and Ralska-Jasiewiczowa 1986), using HCl, NaOH, sieving, HF, and Erdtman's acetolysis, to remove carbonates, humic acids, particles

>170 microns, silicates, and cellulose, respectively. The samples were then stained with safranin, dehydrated in tertiary butyl alcohol, and the residues mounted in 2000cs silicone oil. Slides were examined at a magnification of 400x by ten equally-spaced traverses across at least two slides to reduce the possible effects of differential dispersal on the slides (Brooks and Thomas 1967) or at least until 100 total land pollen grains were counted. Pollen identification was made following the keys of Moore *et al* (1991), Faegri and Iversen (1989), and a small modern reference collection. Plant nomenclature follows Stace (2010). The preservation of the pollen was noted and an assessment was made of the potential for further analysis. Fungal spore identification and interpretation followed van Geel (1978) and van Geel and Aptroot (2006).

Assessment

C.5.3 Six pollen sub-samples from two wells and one cess pit were assessed, as detailed in Table C.5.1. The monolith sub-samples from the cess pit were from dark brown organic silt clay (2118) and dark grey clay and sand (2119) lithologies.

Feature	Sample and context numbers	Sub-sampled for palynology (depth m, where relevant)
Well **2554**	169 (3269)	bulk
Well **1927**	172 (3294)	bulk
Well **1927**	174 (3295)	bulk
Well **1927**	176 (3296)	bulk
Pit **1424**	76 (2118)	0.09-0.10
Pit **1424**	76 (2119)	0.15-0.16

Table C.5.1: *Sub-sampling*

Results

C.5.4 Five of the assessed sub-samples contained pollen, but only one sample (76, 2118) at 0.09–0.10m yielded a rich assemblage.

*Well **2554**, 169 (3269)*

C.5.5 Only five pollen grains were recorded from this sample, comprising a single cereal-type grain, a single grass (Poaceae) pollen and three grains of dandelion-type (*Taraxacum*-type). The dimensions of cereal-type pollen overlap with those of wild grasses such as sweet-grasses (*Glyceria*) (Andersen 1979), several species of which live in damp or wet areas (Stace 2010). If the grain represents a cultivated cereal-type rather than wild grass, then it may have derived from possible nearby arable cultivation or from materials such as straw, human faeces or animal dung incorporated into the well sediments. Microcharcoal particles are present, perhaps suggesting that the products of burning (for example, hearth debris) may have been cast in the well.

*Well **1927**, 172 (3294)*

C.5.6 Recovery of pollen is poor in this sub-sample, with a total count of only 26 grains. Of these, pollen of grasses is most common, followed by pollen of cereal-type, possibly suggesting derivation from an arable source or from materials incorporated into the well sediments (*e.g*. straw, animal dung, human faeces). In addition, some pollen of the goosefoot family (Chenopodiaceae, now Amaranthaceae, a large group including plants such as fat-hen, good-king-henry and many-seeded goosefoot and commonly associated with disturbed and waste ground (Stace 2010)), and a few pollen grains of Asteraceae (including plants such as daisies and thistles), are recorded. A single pollen grain of willow (*Salix*), a shrub that prefers damp areas, is present. Of interest also is the occurrence of specimens of the fresh-water alga *Pediastrum* (HdV-760), suggesting local wetness and not unexpected within a former well. The fungal spores assemblage

comprises commonly occurring *Chaetomium* (HdV-7A) and a single example of *Cercophora* (HdV-112), both of which are known to be coprophilic but *Chaetomium* (HdV-7A) also hosts on a variety of substrates associated with settlement, for example, damp straw, cloths, leather, fibres (van Geel and Aptroot 2006). There is a single occurrence of *Trichuris* (HdV-531), eggs of the intestinal parasite whipworm, associated with human faeces but which can also infect other animals such as pigs or mice. Microcharcoal is present, which may be indicative of burning activity, the products of which were dumped in the well.

*Well **1927**, 174 (3295)*

C.5.7 Recovery of pollen is also poor in this sub-sample, with records for pollen of grasses and rare occurrences of sedges (Cyperaceae), willow, pink family (Caryophyllaceae, a large group including stitchworts, mouse-ears and chickweed) and cereal-type pollen. Pollen of the aquatic plant bulrush (*Typha latifolia*) supports the interpretation of the feature as a well. Fungal spores are limited to isolated occurrences of *Chaetomium* (HdV-7A) and *Sordaria* (HdV-55A/B). *Chaetomium* (HdV-7A) is known to be cellulose decomposing and may occur on plant remains, fibre and dung. In archaeological contexts, it may occur in settlements where dung, damp straw, cloths or other suitable substrates may have been present (van Geel and Aptroot 2006). Of interest is the occurrence of several species of *Trichuris* (HdV-531), eggs of the intestinal parasite whipworm, associated with human faeces but which can also infect other animals such as pigs or mice. Microcharcoal is commonly present, suggesting that it may have been deposited as waste material in the well.

*Well **1927**, 176 (3296)*

C.5.8 This sub-sample was barren of palynomorphs.

*Pit **1424**, 76 (2118)*

C.5.9 0.09-0.10m, a rich pollen assemblage is dominated by herb pollen, including cereal-type, and pollen of grasses, cornflower (*Centaurea cyanus*), common knapweed (*C. nigra),* pollen of the cabbage family (Brassicaceae, a large group including plants such as mustards, rockets and cabbages), dandelion-type, thistles (*Cirsium*), docks/sorrels (*Rumex),* ribwort plantain (*Plantago lanceolata*), mugworts (*Artemisia*) and pollen of mints (*Mentha*-type). The fungal spore assemblage comprises rare occurrences of *Chaetomium* (HdV-7A), *Sporomiella* (HdV-113) and *Glomus* (HdV-207). The pollen assemblage may infer an open landscape, potentially with fields of grasses and/or crops as well as weeds of waste and rough ground (for example, thistles, knapweeds and dandelions). However, cereal-type pollen and other potential food stuffs (suggested, for example, from pollen of plants of the cabbage and mints families), in the sediments of this cess pit, are likely to have derived from materials such as straw, human faeces or animal dung incorporated into the pit sediments. Microcharcoal is present, suggesting that it may have been deposited as waste material in the well.

*Pit **1424**, 76 (2119)*

C.5.10 0.15-0.16m, a sparse assemblage contains pollen of sedges, grasses, cabbage-types, cornflower, ribwort plantain, mugworts, daisy-type and dandelion-type. Pollen of sedges and grasses and herbs such as daisy-type and dandelion-type may represent a variety of habitats, for example, damp grassy areas and rough or waste ground and could have accumulated in the cess pit as products, for example, of animal fodder. *Chaetomium* (HdV-7A) fungal spores are commonly present as well as fewer *Sordaria* (HdV-55A/B) spores. *Chaetomium* (HdV-7A) is known to be cellulose decomposing and may occur on plant remains, fibre and dung. In archaeological contexts, it may occur in settlements

where dung, damp straw, cloths or other suitable substrates may have been present (van Geel and Aptroot 2006). *Sordaria* (HdV-55A/B) taxa represent coprophilous fungal spores and will have been derived from animal dung. Small amounts of microcharcoal were found in this context.

Conclusion

C.5.11 Although pollen was present in all but one of the sub-samples, only one of the sub-samples contained sufficient pollen to warrant analysis. More than half of the pollen counted from that sub-sample (cess pit **1424**, 76 (2118)) contained grass pollen with roughly a fifth comprising cereal-type pollen. The assemblage does fit with the interpretation of the feature as a cess pit, assuming that the pollen derived from materials such as straw, human faeces or animal dung, which became incorporated into the pit sediments.

C.6 Plant Remains

By Rachel Fosberry

Introduction

C.6.1 A total of 194 bulk samples were taken during excavations and 1568 litres of soil were processed. The samples were taken from deposits within features such as backfilled wells and pits located in the back yards of properties that dated from the early medieval to the late post-medieval periods. Most of the samples were taken from two main phases of occupation; Period 2 dates from *c*.AD1200 to *c*.AD1538 when the site was a dislocated suburb associated with Barnwell Priory and Period 3 dates to the mid-16th century through to the 18th century when there was a notable reduction in activity.

C.6.2 The assessment of these samples revealed that many of the excavated features had been used for the disposal of culinary, latrine and probable-stable waste. Preservation of plant remains was good with carbonised, mineralised and waterlogged remains present. Each of these methods of preservation is differential; carbonisation only occurs under certain conditions when plant material is incompletely burnt and reduced to pure carbon. Any surviving charred remains will only represent a small proportion of the original material being burnt. Mineralisation occurs when the organic component of a seed or fruit is replaced by minerals. This process will also only occur under certain conditions, most commonly when mixed with wet waste that is rich in calcium and phosphates (Green 1982) and only certain types of plant remains commonly become mineralised. Waterlogging occurs when a deposit has remained wet as a result of being below the water table. A waterlogged environment is anoxic in that oxygen is excluded which inhibits the decay-causing bacterial leading to the preservation of organic remains such as plants, insects and wood that would not be preserved in dry contexts. Each of these methods of preservation therefore have the potential to provide information on different types of organic remains and this was an influencing factor when selecting samples for analysis. Waterlogged plant remains are of particular value for providing information on the surrounding environment of a site whereas carbonised plant remains relate to agriculture and domestic, culinary activities. Mineralised remains usually indicate cess and can provide evidence of other foods consumed. It is important to recognise that each of these three pathways to preservation are selective to particular organic remains and can thus only provide a limited insight into the importance of plants with regard to diet, industry, cultivation and fuel. Interpretation of preserved assemblages can be subjective and requires extrapolation and a pragmatic view of the daily activities and, most crucially, the discard of the waste produced.

C.6.3 The assessment results (available in the OA East archive) revealed rich assemblages, many of which had the potential for archaeobotanical study. The selection of fifteen samples that were worthiest of further work was primarily based on the density and diversity of the preserved remains in relation to phasing and contextual information and their potential to address the following aims:

- To establish which food plants were cultivated in each of the main periods of occupation and for what purpose
- To investigate the prevalence of ear-cockle nematode
- To investigate assemblages in which one cereal type predominates with the aim of determining which weeds contaminate particular crops
- To look for evidence of cess deposits and determine if they are of human origin or the result of other activities
- To try to determine the use of the clay-lined tanks
- To investigate the waterlogged remains within basal well deposits to determine if the local flora changes over time

Methodology

C.6.4 For the initial assessment one bucket (approximately ten litres of soil) of each bulk sample was processed by water flotation (using a modified Siraf three-tank system) for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and air dried. Samples that were waterlogged were processed in the same way and the flots were examined whilst wet to identify species present. The flots were then dried for ease for quantification.

C.6.5 The flots were scanned under a binocular microscope and the results were presented in the assessment report. Selected samples that showed archaeobotanical potential had the remaining soil processed although, in most cases, the high density and diversity of the plant remains meant that a 10 litre sample produced sufficient numbers for quantification.

C.6.6 Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* (Cappers *et al*. 2006) and the author's own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (2010) for other plants. Carbonised seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

Quantification

C.6.7 Individual cereal grains, selected chaff elements and seeds have been counted and recorded on Tables C.6.1 and C.6.2. Occasional samples that produced a large charred plant assemblage that would have taken too long to analyse in its entirety have had a sub-sample fully sorted, and the counts of charred plant remains from this portion have been multiplied to produce estimated quantities (est.) when tabulated. The remaining portion has then been scanned for less common items which have been counted. Quantification of cereal remains can be problematic due to the tendency of the material to break into small pieces. The methods used are as recommended by Jones (1990)

and fragmented cereal grains have been counted if over half of the grain has survived or if the embryo ends of smaller fragments are present. Individual cereal grains, chaff elements and seeds have been counted. Items that cannot be easily quantified such as charcoal has been scored for abundance according to the following criteria:

+ = rare, ++ = moderate, +++ = abundant
Key to tables: m = mineralised, w = waterlogged, f=fragment, u=untransformed
Numbers in tables relate to charred remains unless otherwise indicated.

Results

Preservation

C.6.8 Preservation of plant remains is predominantly through carbonisation (charring) with charred plant remains being recovered from 80% of the samples. Charred plant remains primarily include significant quantities of cereals along with seeds of weed plants that are associated with cereal cultivation. There is also extensive evidence of the use of wetland plants through a charred component that is possibly derived through the use of peat for fuel. Preservation by waterlogging has occurred in some of the deposits that have been continuously beneath the water table. A third method of preservation, mineralisation, has occurred in several of the former wells and in some pits indicating cess inclusion. Seeds that have been classed as untransformed were quite frequent and include plants such as dead-nettles (*Lamium* sp.), elderberry (*Sambucus nigra*) and henbane (*Hyoscamus niger*). It is not clear how these seeds have been preserved. They could have originally been preferentially preserved by waterlogging in a deposit that has more recently dried out or they could be partially preserved by mineralisation. The types of seeds that are preserved in this way tend to be species that have a tough outer coat (testa) that are quite resistant to decay. In most cases these seeds can be considered to be contemporary with the deposit in which they are found.

Cereals

C.6.9 Cereal grains are the most common preserved plant remains and this reflects both the importance of cereals in the medieval diet and the fact that grains frequently survive the burning process through carbonisation. Cereal assemblages within individual deposits generally include more than one cereal type which could suggest a mixing of material prior to deposition, several depositional events within the same deposit, or mixed crops. All four of the main cereal types are represented; free-threshing hexaploid bread wheat (*Triticum aestivum sensu-lato*) predominates and there are other wheat varieties represented; club wheat (*T. compactum*) can be tentatively identified by the shape of the grain as it has a compact, rounded appearance. It is more accurately identified through the rachis (stem of the cereal ear) which has shorter internodes than bread wheat. There are also smaller amounts of the tetraploid wheat rivet/macaroni wheat (*T. turgidum/durum*). Macaroni wheat was known to be grown in Britain in the medieval period but rivet wheat was more common.

C.6.10 There are at least two forms of hulled barley (*Hordeum vulgare*) being utilised. Both six-row and two-row varieties have been identified through rachis fragments. In theory, the grains of six-row barley can be distinguishable by faint twisted lines on their surface. This pattern has not been seen in this assemblage but that is probably due to the degree of preservation of the grains. There is also evidence of germination of barley grains through the presence of cereal sprouts still attached to the grains (and also frequently detached).

C.6.11 Rye (*Secale cereale*) is the third most common cereal present and it would probably have been imported from where is was mainly cultivated on the sandy soils of Suffolk (and parts of Norfolk). There is evidence that the rye has been processed on site which indicates that the cereal was brought in on sheaves. Rye is a tall growing cereal and the straw was particularly valued for use in thatch.

C.6.12 Oat (*Avena* sp.) grains are observed as both a crop contaminant in its wild form (*A. fatua*) and as a cultivated crop (*A. sativa*). The grains themselves are indistinguishable but the remains of the floret that contained the ear are very distinctive. Cultivated oats were used for food for both humans and animals.

Other cultivated plants

C.6.13 Cultivated pulses are common in the pit samples and reflect their importance in the diet. Both peas (*Pisum cf. sativum*) and, less commonly, beans (Fabaceae) are present but they are not easily distinguishable as medieval beans were often very small. Pulses in the form of peas and beans would have been an important, affordable protein source that would have been dried so that they were available during the lean winter months. They would have been consumed in soups and stews and, as such, are less likely to be accidentally carbonised so they are probably under-represented. Dried legumes can be ground to produce a flour that was used to bulk out flour to make bread in times of hardship.

C.6.14 Evidence of fruits is in the form of occasional mineralised remains of sloe/cherry (*Prunus* sp.), apple/pear (*Malus/Pyrus sp*.), damson/plum (*Prunus cf. domestica*), fig (*Ficus carica*) and grape/raisin (*Vitis vinifera*). There is no evidence of herbs and spices although brassica seeds are fairly frequent. The brassica family includes vegetables such as turnips and cabbages but also mustard which could have been used as a flavouring. There are also brassica varieties that grow as wild plants and it is not possible easily to distinguish which form is present. A single flax (*Linum usitatissimum*) seed hints of the use of the seeds for culinary use, possibly pressed for oil.

Weeds

C.6.15 The weed seed assemblage is particularly of interest at this site due to the variable methods of preservation and the types of plants that are represented. Charred weed seeds are common in many of the assemblages, especially in the pit samples that contain large grain assemblages. Both segetal and ruderal weeds are represented; seeds of plants found growing amongst crops (segetal) include cornflower (*Centaurea* sp.), corn-cockel (*Agrostemma githago*), corn gromwell (*Lithospermum arvense*), cleavers (*Galium aparine*) and vetch/tare (*Vicia/Lathyrus* sp.), brassicas (Brassica sp.), rye grass (*Lollium* sp.), knotgrass *(Polygonum aviculare),* grass seeds (Poaceae), and thistles (*Carduus/Cirsium* sp.). Stinking mayweed *(Anthemis cotula)* is a common crop weed but it has a specific habitat, preferring heavy clay soils.

C.6.16 Seeds of wetland plants are prolific and other plant parts such as stems and leaves are frequent. Great Fen sedge (*Cladium mariscus*) leaf fragments occur in many of the pit samples along with seeds of several sedge species (*Carex* spp.), spike rush (*Eleocharis pallustris*), black bull-rush (*Schoenus nigricans*) and rushes (*Juncus* spp.) as evidence of the exploitation of these wetland resources. These species are found as charred specimens as well as being frequent taxa in the waterlogged samples and occasionally are found in a mineralised state. Hemlock (*Conium maculatum*) and henbane are plants of wasteland but prefer damp soils. Henbane in particular, along with netttles (*Urtica dioica/urens*) like nitrogen-rich soils that are commonly associated with an animal presence.

C.6.17 There is evidence of plants and organisms that only inhabit water-filled features. Water-crowfoots (*Ranunculus* subgenus *batrachium*) would be growing at the water surface whilst algae (charophyte oogonia), cladoceran ephippia (egg cases of eg. water-flea (*Daphnia* sp.) and moss are also present.

C.6.18 Weeds such as docks (*Rumex* spp.) and clover/medick (*Trifolium/Medicago* sp.), ribwort plantain (*Plantago lanceolata*), cleavers (*Galium aparine*), thistles (*Carduus/Cirsium* sp.), several species of the dock (Polygonaceae) and goosefoot (Chenopodiaceae) families have broader habitats including disturbed and waste ground and are described as ruderals. Mixed grasses (Poaceae), clover, ribwort plantain (*Plantago lanceolata*), buttercups (*Ranunculus acris/bulbosus/repens*) and black medick *(Medicago lupulina*) may hint at hay from pasture.

Fuel

C.6.19 Charcoal is common in most of the charred assemblages as evidence of the use of wood for fuel. It is not as frequent as may have been expected on a site spanning the medieval and post-medieval period and it is apparent that alternative fuels were being utilised. Great Fen sedge leaf fragments are abundant and the numerous seeds and stem fragments of other wetland plants such as sedges may be the result of the burning of peat. There is evidence of burnt heather (*cf. Calluna vulgaris*) which may also have been used as fuel. Cereal stalks were probably used as tinder as they catch alight easily and burn with brief intensity.

Period 2 c.1200 to c.1500

Ovens

C.6.20 Six ovens sampled during excavation all produced substantial quantities of charred grains and weed seeds in mixed deposits along with significant quantities of Great Fen sedge which appears to be a major component of the fuel used to fire the ovens. The predominant cereal in most of the ovens is bread wheat which would probably have been the most utilised grain as it was ground for flour. Cereal grains are frequently recovered from oven deposits and they are thought to have been spread over the shelves within bread ovens to prevent the loaves from sticking/burning during baking (Moffet 1994, 60). This practice would produce substantial quantities of burnt grain that would have been raked out and discarded in contemporary rubbish pits and may explain the large quantities of charred grain recovered from this site. The hearths/ovens would have been used successively and this involved regular cleaning and raking out of the ashes and charred remains. The charred waste would have provided a convenient capping material for use in pits in which noisome waste had been disposed of as the charcoal acts as a seal. Oven **3370** produced a different plant assemblage from the other ovens in that it contains abundant barley grains, most of which had sprouted, and heather appears to have been used as fuel. The preservation of the charred material is not good which may suggest that it has not originated from this feature or it may have been the result of repeated burning. The evidence of germination of the barley grains is in the form of elongated sprouts and embryos, many of which have become detached from the grain (although this may have occurred during processing). Barley is commonly used for brewing and for animal fodder. If it is used for human consumption in soups, stews *etc*. the tough outer husks need to be removed and this is most easily achieved by parching and gristing. Approximately half of the barley grains have been fractured which could be indicative of gristing.

C.6.21 It is plausible that this oven may actually have been used to parch a batch of grain (which was then accidentally burnt). Bread ovens would have been multi-purpose in that

the latent heat remaining after the bread has been baked is likely to have been utilised for other purposes. These include the drying of recently harvested grain prior to long-term storage, the halting of germination during brewing and also parching in order to toughen grain that was intended for milling into four.

C.6.22 This assemblage is also unusual in that it contains abundant charred fragments of heather which could possibly have been the fuel used to fire the oven on this occasion. Heather grows on acid heathland and would also have been brought into the site from the nearby counties of Suffolk and Norfolk. It had many uses that include thatching and flooring material and it is possible that it had a primary use before being burnt. The oven assemblages also contain charred seeds of plants that would have been considered as weeds. Various habitats are represented, the most easily identifiable being the wetland habitat in which sedges, particularly Great Fen sedge grows.

Clay-lined tanks

C.6.23 Samples were taken from deposits within clay-lined features found in the rear area of Plots 4, 5 and 6. They vary in content and the original function of these features is unclear. The clay lining could have been a method for holding liquid of some sort for industrial processes such as fulling (wool processing), tanning (leather processing), dyeing, brewing or even as holding tanks for fish. They had all been backfilled with rubbish that included carbonised material but fill 3277 (Sample 178) of tank **3280** in Plot 4 also contains numerous seeds preserved by mineralisation. The species present are plants that would have been growing in the immediate area around the feature and have blown into the tank. Mineralised seeds of docks, campions, goosefoot, orache (*Atriplex* sp.), flax, poppy, henbane, elderberry, weld (*Reseda lutea*), brassicas and wild/sweet pea (*Lathyrus* sp.) have been identified in addition to a smaller charred seed component of occasional charred grains and seeds of docks, sedges and goosefoots. Untransformed sedges, dead-nettles and poppy seeds are common and may be preserved by partial mineralisation or through waterlogging. Whatever was in the tank at the time has caused some of the seeds to become mineralised indicating that it was a liquid with a high phosphate component such as urine. Urine was a useful commodity throughout the medieval period. It was used to soften leather in the tanning process and it was also useful as a mordant to dye cloth. Occasional seeds of weld may suggest that the tanks were used for dyeing cloth. It is difficult to prove this through the presence of seeds as it was usually the vegetative parts of the plants that were used to produce a dye and these plants may not have been cultivated on site. A wooden paddle recovered from well **1927** in adjacent Plot 6 is a clue as the notched end on the handle could suggest that it was used for a wet process in which the handle could become slippery. Chamber pots were recovered from later phases but not from Period 2 (C. Fletcher, pers comm) but it is probable that urine was collected in some way and it is likely that it would have been utilised.

Pits

C.6.24 In total, 74 pit fills were sampled, thirteen of which were former quarry pits. Nearly all of the pits contain charred plant remains as evidence that they have been subsequently used for the disposal of burnt waste. Twenty-seven of the pit fills also contain plant and/or insect remains that have been preserved by mineralisation indicating that the deposits contained cess. Three features were sufficiently deep to contain waterlogged plant remains. Most of the less productive pit fills were described on excavation as having a 'cess-like' appearance and it would appear that the original material has fully decomposed as preserved remains were not recovered. The larger assemblages are

from samples that were taken from well-defined layers in the pits which suggests that they are possibly single deposits.

C.6.25 Charred cereals occur often in significant quantities and all four cereal groups are represented. Wheat is most common and there are chaff elements that are identifiable as hexaploid bread wheat in addition to tetraploid wheats. Barley is also frequent and occasionally the grains show evidence of germination. Oats occur in many of the samples in low numbers and mainly represent the wild variety that grows as a crop weed rather than cultivated oats. The exception is fill 3083 of pit **3081** (Sample 155) which contains a significant quantity of oat grains and also occasional chaff elements that are identifiable as florets of the cultivated form. The proportion of oats (14%) is relatively high compared to other pit samples. Wheat still predominates (64%) and barley is also frequent (13%) with a smaller amount of grains which are unidentifiable due to fragmentation and degradation (9%). Approximately one third of the oat grains are brown rather than the completely-charred black. This suggests that the grains were only partially carbonised and subsequently the unburnt parts were preserved by mineralisation. There was one mineralised corn gromwell seed and occasional mineralised insect remains in this sample suggesting a partial cess element. Oats have many culinary uses but are also a fodder crop for horses. An explanation for the partial mineralisation is that these are oats that had been mixed with stable waste prior to burning.

C.6.26 This context also contained a diverse assemblage of charred weed seeds that could be derived from a wide range of habitats that include cultivated, disturbed and wetland soils and possibly pasture as well. The crop weeds cannot be assigned to a specific cereal crop although corn gromwell is an autumn-germinating plant and wheat was traditionally a winter crop and barley a summer one (although not exclusively). Grasses (Poaceae), scentless mayweed (*Tripleurspermum inodorum*) and fescues (*Festuca* sp.) are likely to have been harvested as hay whereas the seeds of wetland plants include marsh marigold (*Caltha palustris*), sedges and rushes (*Juncus* sp.) which could have been derived from peat. Plants that are commonly found growing in disturbed soils include poppies, campions and goosefoots. It is therefore likely that this assemblage represents a mixed deposit of material from more than one source.

C.6.27 Legumes are common in the pit assemblages and fill 2288 of pit **2286** (Sample 92) contains the largest assemblage of legumes from this period. The absence of the hilum in most cases precludes identification to species. The larger size of the legumes suggests that they are mostly a cultivated variety of peas and beans rather than the wild type that are most commonly found growing amongst crops and hedgerows. Wheat is the major component of this sample and there is an abundance of chaff that indicates that at least some of the cereal was burnt in the ear. Chaff elements such as straw fragments do not survive burning as well as grain and the tougher chaff components such as culm nodes and parts of the rachis do (Boardman and Jones 1980, 6).

C.6.28 At least five of the pit fills that contain abundant grain contain what appears to be the charred remains of grains that have been infected by a parasitic nematode called *Anguina tritici*. The wheat grains appear distorted and swollen to the point at which the ventral groove appears as a thin line or is totally absent. The identification of these galls or 'ear-cockles' has been verified by Gill Campbell (Senior Archaeobotanist, Historic England) but no comparative reference material has been found as the disease has been eradicated in England since the 1950s. This infection would have been prevalent in medieval England. The first mention of it in literature is in a letter from Rev. Turbeville Needham to the Royal Society of London in December 22, 1743 (Needham 1744):

"Upon opening lately the small black Grains of smutty Wheat, which they here distinguish from blighted Corn, the latter affording nothing but a black Dust, into which the whole Substance of the Ear is converted; I perceived a soft white fibrous Substance, a small Portion of which I placed upon my Object-plate: It seemed to consist wholly of longitudinal Fibres bundled together; and you will be surprized, perhaps, that I should say, without any the least Sign of Life or Motion. I dropped a Globule of Water upon it, in order to try if the Parts, when separated, might be viewed more conveniently; when, to my great Surprize, these imaginary Fibres, as it were, instantly separated from each other, took Life, moved irregularly, not with a progressive, but twisting Motion; and continued to do so for the Space of Nine or Ten Hours, when I threw them away."

C.6.29 Also known as 'purples' and 'wheat galls', the nematode lies dormant in soil until the cereal (wheat or rye) develops and the juveniles move up the plant in a film of water, and penetrate a cereal grain. The nematode develops and lays eggs within the grain which becomes a swollen gall that desiccates and would eventually drop to the ground to complete the life-cycle (Agrios 2005, 866). Ear-cockle nematode infection would have been a serious cause of concern for the farmer as it results in stunted growth of the plant. The galls can survive in a desiccated state for many years resulting in infection of subsequent crops although it is sometimes possible to eliminate by crop rotation. It is likely that a farmer would have noticed the galls forming in the developing ears of the cereal during cultivation and it is possible that the diseased ears could have been picked off and burnt as a means of controlling the disease. It is also possible to pick the individual galls off of the ears and they can also be separated from threshed grain by flotation in brine as the wheat grains are denser than the galls which float to the surface. (MAAF 1937, 2). The charred assemblage of infected cereals from pit **2286** has evidence of whole ears being burnt although there is also evidence of cereal stems which could indicate that the whole plant was uprooted as a means of controlling the spread of the disease. Charred wheat galls have been found in medieval contexts from a number of sites including Wharram Percy, North Glebe Terrace (Carruthers 2010) and West Cotton, Raunds (Campbell and Robinson, 2010) and, more locally at Manor Farm, Colne (Fosberry 2010) and in the neighbouring site at Coldhams Lane (Fosberry 2015). Identifications have all been tentative due to the lack of modern reference material for comparison.

C.6.30 Rye is generally infrequent in Period 2 pits mainly occurring in low numbers (<10) with the exception of fill 3463 of pit **3451** (Sample 197) in which a large amount of whole plants of both rye and barley have been deposited in a burnt layer with bone and pottery. A 2L sample produced a 125ml flot that is almost entirely comprised of burnt chaff. Rye grain predominates within the assemblage (57%) with frequent barley (27%), rye/barley (38%) and a minor wheat component (3%). Stem rachis fragments of both barley and rye have been identified but most of the chaff comprises burnt stalks and culm nodes representing straw. The weed seed count is low and includes corn gromwell, clover/medicks and cleavers.

C.6.31 Twenty-seven of the pits contained occasional plant remains that had been preserved by mineralisation suggesting that cess deposits have been included. Mineralised seeds occur in seventeen of the samples but they are mainly seeds of weed plants such as goosefoot, corn gromwell, mallows (*Malva* sp.) and dead nettles and have most likely become mineralised through being mixed with phosphate-rich waste such as fish guts. Single mineralised seeds of apple/pear (*Malus/Pyrus* sp.), fig (*Ficus carica*), sloe/cherry (*Prunus* sp.) grape/raisin (*Vitis vinifera*) seed and fig could have originated from human faecal material.

C.6.32 The most abundant mineralised assemblage was recovered from a dark burnt layer 2288 at the bottom of pit **2286** (Sample 92). The layer appears to have been primarily comprised of burnt cereal remains (predominantly wheat) with a significant legume component (see above) but there is also evidence of a cess constituent. The seeds that have been mineralised (poppy, corn gromwell, brassicas, campions) could possibly have been consumed (and therefore excreted) by humans or it may be that they have become mineralised through contact with latrine waste. Either way, the assemblage as a whole clearly has mixed origins. Fish bones are present in most of the pit fills along with small mammal bones, animal bones and marine shell indicating that most of the deposits are of refuse that has been mixed prior to deposition which may indicate that it had been collected in a midden.

Waterlogged features

C.6.33 A total of twenty-two samples were taken from six wells and two quarry pits. All of the features had subsequently been used for the disposal of rubbish and numerous distinct deposits were evident. Several of the lowest deposits within the features have remained below the water table and there is some survival of waterlogged plant remains although in most cases the preservation is preferential to the more durable seeds such as elderberry, nettles, dead-nettles and sedges.

C.6.34 Fill 3292 (Sample 166) of well **1927**, contains well-preserved waterlogged remains and was taken from an area where there was also wood surviving within the deposit. The plant assemblage is predominantly comprised of waterlogged stems of cereals with occasional larger fragments that are likely to be reed stems. The cereal straw is not identifiable to species but four rachis fragments of six-row barley were identified and it seems likely that the stems are barley straw. Straw would have been considered a valuable element of a cereal crop with uses including thatching and for animal stabling. There is no evidence of mineralisation that could have indicated that the straw had been used for the latter prior to deposition.

C.6.35 The sample also includes a diverse assemblage of waterlogged seeds of mainly ruderal weeds including several species of plants from families including goosefoots (Chenopodiaceae), pinks (Caryophylaceae), docks, nettles (*Urtica dioica/urens*) and poppies (Papaveraceae).

C.6.36 Seeds of segetal plants that may have been contaminants of the barley crop include stinking mayweed and corn gromwell although these are present in small quantities compared to the ruderal species. There is a small element of wetland species such as sedges (*Carex* spp.) that may have been growing in damp soils around the feature and there is evidence that plants like water-crowfoot were growing within the water in the well. Ostracods, moss stems and algae (charophyte oogonia) are also present and waterlogged insect fragments are also common.

C.6.37 The assemblage suggests that the feature was in an area of disturbed and somewhat damp and muddy ground. There were numerous weeds growing but shrubs such as brambles and elderberry that are normally colonisers of such areas appear to have been controlled.

Sample No.		**182**	**197**	**155**	**178**	**144**	**92**	**166**
Context No.		3372	3464	3083	3277	2950	2288	3292
Feature No.		3370	3451	3081	3280	2953	2286	1927
Feature type		Oven	Pit	Pit	Clay-lined pit	Pit	Pit	well
Plot no.		2	3	4	4	5	6	7

Sample No.		**182**	**197**	**155**	**178**	**144**	**92**	**166**
Context No.		3372	3464	3083	3277	2950	2288	3292
Feature No.		3370	3451	3081	3280	2953	2286	1927
		Rear	Rear	Rear	Rear	Rear	Front	Rear
Sample volume (L)		10	2	10	9	16	9	10
Volume of flot (millilitres)		50	125	60	25	80	80	80
% flot sorted		100	100	100	100	100	100	100
Cereals:								
Avena sp. caryopsis	Oats (wild or cultivated)	1		106		27	10	2
Avena sp. germinated caryopsis	germinated oat grain	6						
Hordeum vulgare L. caryopsis	domesticated Barley grain	23	27	99		73	73	1
Hordeum vulgare L. caryopsis germinated	germinated Barley grain	33					2	
Hordeum vulgare L. caryopsis germinated	Fractured Barley grain	43						
Secale cereale L. caryopsis	Rye grain	5	91					
free-threshing *Triticum* sp. caryopsis	free-threshing Wheat grain	17	5	497	2	771	227 +5m	
Triticum cf. *compactum L. caryopsis*	Club wheat grain	36						
cereal indet. caryopsis	indeterminate grain	157	38	70	9	348		
	Total cereals	321	161	772	11	1219	312	3
Anguina tritici infected grain	Ear-cockle gall			4		4	5	
Chaff:								
Avena sativa L. floret	cultivated oat			1			1	
Hordeum vulgare L. rachis internode	domesticated Barley chaff					14	2	
Hordeum vulgare L. rachis internode 6-row	6 row barley chaff		6				1	2w
Hordeum vulgare L. rachis internode cf. 2-row	2 row barley chaff		189	2		7	9	1w
Secale cereale L. rachis internodes	Rye chaff							
cf. *Secale cereale* L. peduncles	Rye stem fragments		27					
free-threshing *Triticum* sp. rachis internode	free-threshing Wheat chaff						369	
free-threshing *Triticum* sp. Rachis	free-threshing Wheat chaff						63	
Triticum aestivum sensu lato rachis	free-threshing hexaploid Wheat chaff		1	4		10	11	
Triticum cf. turgidum rachis rachis	free-threshing tetraploid Wheat chaff						14	
cf. cereal indet. culm node	Cereal stem-joint [indicates straw]	1	21	3	1	42	19	
cf. cereal indet.chaff	Cereal stem fragments		++++					++++w
cereal indet detached sprout	cereal sprout	37					53	
Other food plants:								
Legume 2-4mm	vetch/tare/small pea			2		14	1	
Legume 2-4mm	Pea/small bean	1		2	3m	13	18	
Legume >4mm	Bean			2		24	29	
Legume fragments							21	
Legume tendril						1		
Linum usitatissimum L. seed	Flax				1m			
Dry land herbs:								
Agrostemma githago L. seed	Corncockle			3		3	2f	
Agrostemma githago L. seed head	Corncockle					1		
Anagallis arvensis L. seed	Scarlet/Blue Pimpernel							8w
Anthemis cotula L. seed	Stinking Chamomile	6		66		2	1	9w

Sample No.		**182**	**197**	**155**	**178**	**144**	**92**	**166**
Context No.		3372	3464	3083	3277	2950	2288	3292
Feature No.		3370	3451	3081	3280	2953	2286	1927
Arctium lappa L. seed	Greater burdock							1w
Atriplex prostrata Boucher ex DC./ *patula* L. seed	Spear-leaved/Common Orache	36		2	3m	1	1	11w
Brassica nigra type seed	Black Mustard (coarse-textured seed)	6		2	5m			1w
Brassica/Sinapis sp. seed kernel	Cabbages/Mustards kernel	21			3m		1m	
Capsella bursa-pastoris L. seed	Shepherd's purse							4w
Carduus/Cirsium sp. achene	Thistles	1 + 3u		3				
Caryophyllaceae indet. <2mm seed	small-seeded Pink Family	12		19				
Centaurea sp. achene	Cornflower-type					5	1	
Centaurea sp. seed	Cornflower-type inner seed			5		11		
Cerastium arvense L. seed	mouse-ear chickweed			2				3w
Chaerophyllum temulentum L. seed	Chervil				2 + 3m			
Chenopodiaceae indet. seed	Goosefoot Family	38		18	1+ 10m		2	46w
Chenopodium album L. seed	Fat-hen	38						115w
Chenopodium cf. ficifolium L Seed	Fig-leaved Goosefoot			19				
Conium maculatum L. mericarp	Hemlock seed coat	3						1w
Euphorbia peplus L. seed	Petty spurge							1w
Fallopia convolvulus L. Á. Löve achene	Black-bindweed	1				1	2	1w
Festuca sp. caryopsis	Fescue			1				
Fumaria officianalis L. achene	Common Fumitory	1						3w
Galium aparine L. nutlet	Cleavers	2		1		2	1	
Hyoscyamus niger L. seed	Henbane	1 + 3u			3m		1m	3w
Lamium sp. nutlet	Dead-nettles				1m + 8u			33
Lamium cf. maculatum nutlet	spotted henbit	1						1w
Lapsana communis L. achene	Nipplewort	1		1				
Lepidium sp. seed	Peppercress							6w
Lithospermum arvense L. nutlet	Field Gromwell						1f	
Lithospermum arvense L. kernal	Field Gromwell				2m		3m	1w
Lolium cf. temulentum L. caryopsis	Darnel	3		2		2		
Malva sp. nutlet	Mallows					1		
Malva cf. sylvestris L. nutlet	Common mallow							4w
Medicago lupulina L. fruit	Black Medick					2		
Odontites vernus (Bellardi) Dumort. seed	Red Bartsia							11w
Papaveraceae indet. seed	Poppy family							7w
Papaver rhoeas L. seed	Common Poppy			4	1m	1		39w
Papaver somniferum L. seed	Opium Poppy							1w
Papaver sp. seed	Poppy				7u		2m	25w
Plantago media L. seed	Hoary Plantain					1		
Plantago lanceolata L. seed	Ribwort Plantain	1						
small Poaceae indet. (< 2mm]) caryopsis	small-seeded Grass Family	5		7			2	
medium Poaceae indet. (3-4mm) caryopsis	medium-seeded Grass Family			2				
Polygonum sp. achene	Dock Family	18						14w
Polygonum aviculare L. achene	Knotgrass	7					1	34w
Reseda lutea L.seed	Wild Mignonette				1u + 1m			

Sample No.		**182**	**197**	**155**	**178**	**144**	**92**	**166**
Context No.		3372	3464	3083	3277	2950	2288	3292
Feature No.		3370	3451	3081	3280	2953	2286	1927
Reseda luteola L. seed	Weld							3w
Rumex acetosella L. achene	Sheep's Sorrel				3m			3w
Rumex acetosella L. fruit with perianth	Sheep's Sorrel							2w
Rumex crispus/obtusifolius L. achene	Curled/Broad-leaved Dock	57		3	1m	6	1	6w
Rumex sp. achene	small-seeded Docks	24		4	1	2		10w
Silene sp. Seed	Campions				9m	1	4 + 2m	3w
Silene cf. vulgaris (Moench) Garcke seed	Bladder campion			12				6w
Solanum dulcamara L. Seed	Bittersweet nightshade							1w
Solanum nigrum L. seed	Black nightshade							1w
Sonchus oleraceus L. achene	Smooth sow-thistle					1		2w
Stellaria media L. Vill. Seed	Common Chickweed						1f	14w
Thalictrum flavum L.fruit	Common Meadow-rue				1			
Torilis japonica L. seed	upright hedge-parsley							13w
small *Trifolium* spp. (<1mm) seed	small-seeded Clovers	36		5			2	
large*Trifolium/Medicago* spp. (2-3mm) seed	large-seeded Clovers/Medicks	6		3		8	10	
Urtica dioica L. seed	Common Nettle				1m			35w
Urtica urens L. seed	Small Nettle							55w
Wetland/aquatic plants:								
Caltha palustris L. seed	marsh marigold			1		1		
Small trigonous *Carex* spp. (<2mm) nut	small triangular-seeded Sedges			3	3u	1		1w
medium trigonous *Carex* sp. (2-3mm) nut	Common / Slender Spike-rush			2	1 + 1u			
elongate lenticular *Carex* sp. (>2mm) nut	elongate & flat-seeded Sedges			3				1w
rounded lenticular *Carex* sp. (2-3 mm) nut	rounded & flat-seeded Sedges							1w
Cladium mariscus L. Pohl leaf	Great Fen-sedge	++		++		+++	++	+w
Cladium mariscus L. Pohl nut	Great Fen-sedge					4	1f	
Juncus sp. seed	Rush	9		2				
Ranunculus subgenus *Batrachium* L. achene	Water-crowfoot							3w
Schoenus nigricans L. nut	Black bog rush			1		1		
Scirpus sp. achene	Club rush			2				
Tree/shrub macrofossils:								
cf. *Calluna vulgaris L.* stem fragments	Heather	++++						
Sambucus nigra L. seed	Elder				11m			2w
Other plant macrofossils								
Charcoal <2mm		++	++	+++	+	+++	+++	
Charcoal >2mm		++		++		+++	+++	
Charcoal >10mm		+				+		
Charred stems								
Silicates		++					++++	
Indet.culm nodes								++w
Waterlogged root/stem								+++
Bryophytes								+w
Indet.seeds						3	2 + 1m	8w
vitrified charcoal								
Other remains								

Sample No.		182	197	155	178	144	92	166
Context No.		3372	3464	3083	3277	2950	2288	3292
Feature No.		3370	3451	3081	3280	2953	2286	1927
Ostracods								+
Charaphyte oogonia		+					++	+w
Burnt molluscs				+b				
mineralised arthropod remains					+		+	
waterlogged arthropod remains								++
Fish bone/scales					++			

Table C.6.1: Period 2 samples

Period 3: c.1550 to 1750

Pits

C.6.38 Thirteen pits were sampled, mainly from defined deposits that were seen during excavation as layers within pit fills. Charred cereal grains are common in almost all of the samples and were abundant in many whereas mineralisation was rarely encountered. Wheat still predominates as the most common cereal in that it is present in all cereal assemblages. Barley is also frequent and rye is present in specific deposits.

C.6.39 Fill 471 of pit **473** (Sample 10) produced a flot volume of 850ml (from a 24L sample) that is comprised almost entirely of wheat grains. Weed seeds such as corncockle, cornflower, brassica and darnel occur rarely and are likely to have been retained amongst the grain as they are of a similar size and could not be removed by sieving. A charred insect was also recovered and there is extensive evidence of *Anguina tritici* infection. This sample could possibly represent the accidental burning of grain in an oven (possibly whilst drying) as there are numerous fragments of fired clay present, some of which have impressions of Great Fen sedge leaves. Fill 577 of pit **574** (Sample 14, not analysed) produced a similar assemblage that also had evidence of nematode infection. Both samples also contain numerous charred Great Fen sedge leaves suggestive of use as fuel.

C.6.40 Fill 1875 of pit **1881** (Sample 64) produced a rich mixed assemblage of burnt bread wheat and rye with a significant legume component. It is possible that this sample represents a maslin crop as it mainly comprises fine chaff fragments and silicates which, along with numerous rachis fragments, culm nodes and charred grains, indicates that complete ears and stems of both wheat and rye have been burnt. The weed seed assemblage of this sample is limited to cornflower seeds and legumes. The legumes vary in size and degree of preservation. They are mostly intact (in that the two cotyledons have fused during burning) but lack their outer testa, or the outer testa remains but has split along the hilum. Identification to species is therefore problematic and has been based on size. There are a few specimens in which the hilum remains relatively intact and common vetch (*Vicia sativa*) and a single pea (*Pisum cf. sativum*) have been deduced. Several pod fragments have survived, some with legumes still intact. The fragments are comparable with modern reference material of the wild pea (*Lathyrus*) although experimental burning of cultivated pea pods by the author suggests shrinkage of approximately 25% on burning so it is possible that some of the fragments could be cultivated pea pods. The charred fragments lack the inner segmentation seen in the modern vetch/wild pea pods but this may be an element that doesn't survive carbonisation. There is one fragment that has retained a flattened legume that, if this was the only surviving example, would have been identified as lentil (*Lens culinaris*) but this may just be a squashed specimen. Tendrils are frequent and there is even survival

of a tendril wrapped around a cereal stem. It therefore seems most plausible that the leguminous remains have grown amongst the cereal crop by attaching themselves to the cereal stem for support. Once the plant wraps itself around the stem is it difficult to remove and would have been harvested along with the crop. Cornflower seeds are the only other crop contaminant.

C.6.41 Fill 3506 of pit **3503** (Sample 96) contains a rich assemblage of barley and oats that have been burnt as whole plants. The barley grains exhibit variable preservation with some grains retaining their outer chaff beautifully intact and the opposite extreme with several grains totally abraded and only recognisable by their overall shape. Barley rachis fragments are abundant but they are highly fragmented and only a small percentage can be identified as the two-row variety. Oat grains are also frequent and florets of both cultivated oats and common wild oat (*A. fatua*) have been well preserved and are also present in abundance as tiny fragments of the components of the floret (lemma and paleae). Culm nodes are frequent and are also recognisable as silica skeletons. Great Fen sedge is abundant and there are recognisable *Carex* sedge stems that are triangular in shape. Burnt molluscs that were probably attached to the sedges are frequent. The charred weed seeds present reflect the combination of cereal and wetland plants and include docks, corncockle, goosefoots, campions, sedges, black bull-rush and spike-rush. There is also a charred macrofossil that is reminiscent of an animal dropping that is 6mm in diameter (possibly rabbit?).

C.6.42 Charcoal fragments have a glassy appearance that is indicative of high-temperature and/or repeated burning.

Wells

C.6.43 Three wells were sampled. Each feature contained numerous deposits that were frequently observed as 'lenses'. The samples contain plant and insect remains that have been preserved through carbonisation, mineralisation and/or waterlogging. Well **1456** contained eleven deposits. The lowest two deposits were not sampled but the subsequent six were. All of the samples contain charred plant remains and the lowest two were waterlogged. The lowest fill sample 2370 contains only sparse remains of charred cereal grains and occasional charred weed seeds along with waterlogged seeds of sedges. The fill above, 2369 is most unusual in that it contains numerous matted hairs that resemble a felt-like fabric. Preservation is predominantly by waterlogging and there are numerous small trigonous sedge seeds present. There are mineralised remains of insects and a seed of goosefoot along with fish bones and scales. Additionally, charred wheat grains and sparse charcoal are also present. Fill 2249 contains a moderate assemblage of charred barley and wheat grains with mixed mineralised remains of fly puparia, cysts and possible seeds. Fill 2248 is charcoal-rich and contains barley, wheat and several legumes and dock seeds. Fill 2217 is also charcoal-rich and contains mixed charred grains of wheat, barley and oats, Great Fen sedge and a charred seed-head of corncockle. The latest fill sampled is 2414 (Sample 84), which was deemed as having the greatest archaeobotanical potential and was examined in more detail. It has a minor charred cereal component although charcoal is frequent. The charred seeds include those from crop weeds and wetland plants and there is a charred object that resembles a raisin. Mineralised seeds include fig and grape/raisin seeds, brassicas (which could be mustard) and weed seeds such as campions, goosefoots, corn gromwell, knotgrass, docks and nettles. Untransformed seeds include henbane and elderberry.

C.6.44 Neither of the two samples taken from well **1577** were waterlogged. Lower fill 1578 contains only sparse charred remains but fill 1584 contains abundant oat grains mixed

with occasional wheat grains. Both samples from well **2412** contains charred and possibly waterlogged remains. Untransformed elderberry seeds are frequent in both samples along with poppy and dead-nettle seeds that are probably preserved by waterlogging unless the deposit has only recently dried out. Charred cereals and sedge seeds occur in small amounts.

*Cess Pit **1424***

C.6.45 Thirteen of the 31 deposits in cess pit **1424** were sampled. The earliest deposit sampled was the sixth in the sequence (2345) and contains sparse charred remains and numerous hairs have been preserved, presumably by mineralisation. There was no evidence of waterlogging in this lower deposit but successive (higher) deposits did contain waterlogged remains in addition to plant remains preserved by mineralisation and carbonisation and frequent insect remains and occasional hairs. This was unexpected as waterlogging usually occurs when deposits are continuously beneath the water table. There was a void beneath this feature that is likely to have been created long after the feature had been filled in. It seems likely that some of the compacted lower deposits have acted as a seal allowing the higher deposits to remain wet enough for waterlogged seeds to be preserved.

C.6.46 The charred component of the cess pit samples are plants that appear to be typical of this site (cereal grains, sedges and weed seeds) and there was evidence of germinated barley in fill 2333 (Sample 105). This sample was chosen for analysis due to its content as it typifies the cess pit assemblages in that it contains remains preserved by different pathways. Waterlogged remains include numerous seeds of poppies; rough poppy (*Papaver dubium*), common poppy (*P. rhoeas*) and prickly poppy (*P. Argemone*) and small trigonous sedge seeds. The mineralised seeds are those of at least three different species of sedges (*Carex* spp.), poppies and nettles. The presence of charophyte oogonia and egg cases of the water flea (*Daphnia* sp) are indicative of standing water but not necessarily within this feature. They could have been included in the waste deposit which is clearly a mixture of material.

C.6.47 Fill 2149 (sample 78) contains a diverse assemblage of plant remains that are all preserved by carbonisation. Barley predominates and there are rachis fragments that can be identified to both the six-row and two-row varieties although the two-row fragments are heavily burnt and the identification is therefore tentative. Some of the barley grains show evidence of slight germination. The embryos only measure 2-3mm and it could be argued that this extension has happened during carbonisation which can cause the grain to shrink away from the embryo. It is also possible that this is a failed germination or even just grain that has spoiled when it became damp. There are many cereal diseases that would affect the ears and render it unsuitable for human or even animal consumption. In order to prevent infection of other cereal supplies it would have been prudent to have burnt afflicted crops. Rye, wheat and oat grains are also present. Barley chaff is frequent as is Great Fen sedge. There are also frequent culm nodes that are too large to be cereal and are more likely to represent reeds. Seeds of wetland plants are frequent and include at least five different species of *Carex* sedges, black bull rush, spike-rush and rushes (*Juncus* sp.). Charred flowers of either sedges or rushes and burnt snails were also noted. The wetland component is significant and the presence of both flowers and seeds of these plants suggests a late summer harvest or it is possible that such a concentration of different species could indicate that they have originated from peat. Peat is almost impossible to identify in charred assemblages without obtaining AMS dates on the seeds of the peat-forming plants. Peat would be expected to contain stems, leaves and seeds of wetland plants but only the tougher

fragments such as the culm nodes and seeds are likely to survive burning. Saw-sedge leaves are the exception as they are commonly found in charred wetland assemblages and seem to survive the burning process. Analysis of the fuel used at Castle Mall, Norwich by Murphy (1991, 1034) concluded that peat-burning residues are largely 'archaeobotanically inconspicuous' and he was only able to interpret the use of peat as fuel in some of the medieval industrial/refuse pits.

C.6.48 There is also a significant crop weed component of stinking mayweed, corn flower and corncockle and possible pasture plants (used as hay) include mixed grasses, clover, ribwort plantain, buttercups and black medick. Thistles, docks and mallow (*Malva* sp.) are more suggestive of waste ground but could equally have been growing in pasture or cultivated fields.

C.6.49 Fill 2148 (Sample 77) contains an unusual assemblage of charred and waterlogged material. The charred component is comprised of charred grains of barley and six-row barley chaff, sedges, rushes, henbane and stinking mayweed and Great Fen sedge leaf fragments. Waterlogged seeds include wetland plants (sedges and spike rush), obligate aquatics (duckweed, water crowfoot and water-fleas) and plants of disturbed ground (docks, nettles, poppies, brambles (*Rubus* sp.), elderberry and henbane). Mineralised seeds of fig, nettles and common meadowrue (*Thalictrum flavum*) are also present along with enigmatic cream-coloured, rounded objects. Commonly referred to as phosphatic or calcium phosphate nodules, these enigmatic fossils are often found in cess samples and their origin has never been identified. Suggestions of tapeworm cysts and fungi have been proposed (Carruthers 1996) but the most recent thoughts are that they are formed as the result of a chemical process, possibly within voids within a deposit (Gill Campbell, Richard Macphail, pers. comm). Fill 2148 is also clearly of mixed origins. The obligate aquatic plants suggest that the feature had contained water at some stage. A cess pit would have been regularly emptied during its lifetime for this function but, once abandoned (perhaps due to persistent leakage causing fouling of nearby wells) the feature has been used for the deposition of refuse, but it was still able to hold water and would have been a trap for wind-blown seeds. Any cess remaining would have provided the ideal environment for mineralisation of plant and insect remains.

C.6.50 With regard to the other fills sampled (but not analysed), fill 2117 is predominantly waterlogged and contains sedges, henbane and dead-nettle seeds but is also rich in silicates. Fill 1888 produced a small 5ml flot containing waterlogged moss, henbane, water-crowfoot and sedge seeds. Seeds of elderberry and bramble (*Rubus* sp.) are untransformed and may also be waterlogged. Charcoal is present but there are no charred cereal grains. Fill 1429 contains a few untransformed seeds of henbane and dead-nettle and the last fill sampled, 1426 contains vitrified charcoal.

Layers

C.6.51 Samples taken from layers mainly contained just charcoal. Both buried soil 859 and floor layer 1486 samples comprise poorly preserved charred grain mixed with legumes and Great Fen sedge. Layer 2030 (Sample 73 within cellar **2061**) is of note as it contains mineralised phosphatic nodules (see above).

Sample No.		**64**	**78**	**77**	**105**	**196**	**10**	**84**	**79**
Context No.		1875	2149	2148	2333	3506	471	1457	2162
Feature No.		1881	1424	1424	1424	3503	473	1456	2157
Feature type		pit	well/cess pit	well	well	Pit	pit	well	pit
Plot		9	9	9	9	9	10	11	

Sample No.		**64**	**78**	**77**	**105**	**196**	**10**	**84**	**79**
Context No.		1875	2149	2148	2333	3506	471	1457	2162
Feature No.		1881	1424	1424	1424	3503	473	1456	2157
Building		8	8	8	8	8	9	10	
		possible manor?				possible manor?			
Date		17th c.	17th c.	17th c.	17th c.	17th c.	18th c.	17th c.	
Sample volume (L)		10	15	16	5	8	24	10	10
Volume of flot (litres)		200	165	110	30	100	980	140	160
% flot sorted		25	100	100	100	100	100	100	100
Cereals									
Avena sp. caryopsis	Oats [wild or cultivated]	2	4		1	55	14	2	
Hordeum vulgare L. caryopsis	domesticated Barley grain		68	12	24	379	24	112	220est
Hordeum vulgare L. caryopsis germinated	germinated Barley grain		9		4				
Secale cereale L. caryopsis	Rye grain	129	10	1	2	2	2		
Secale cereale/Triticum sp. L. caryopsis	Wheat/rye grain	81							
free-threshing *Triticum* sp. Caryopsis	free-threshing Wheat grain	62	13		1	16	13880 est		544est
cf. *Triticum aestivum* spp. *Compactum*	Club wheat								1588est
cereal indet. caryopsis	indeterminate	313	42	13	37	120	105	56	448est
Anguina tritici infected grain	Ear-cockle gall						56		3
Chaff:									
Avena fatua L. floret	Wild-oat seed-head				1	5			
Avena sp. floret	Oat seed-head					5			
Avena sativa L. floret	Cultivated -oat seed-head					2			
Hordeum vulgare L. rachis internode	domesticated Barley chaff		27		7	249		5	
Hordeum vulgare L. rachis internode 6-row	6_row barley chaff		4	12					
Hordeum vulgare L. rachis internode cf. 2-row	2_row barley chaff		8		9	44		1	
Secale cereale L. rachis internodes	Rye chaff	62							
cf. *Secale cereale* L. peduncles	Rye stem fragments	8							
free-threshing *Triticum* sp. rachis internode	free-threshing Wheat chaff	34						3	
Triticum aestivum sensu lato rachis	free-threshing hexaploid Wheat chaff	41							7
cf. *Triticum aestivum* spp. *Compactum* rachis	Club wheat chaff								2
cf. cereal indet. culm node	Cereal stem-joint [indicates straw]	21	28	15	8	63		7	3
Silicate skeleton of culm node	Probably cereal stem					98			
cf. cereal indet.chaff	Cereal stem fragments	18f	+++		2	+++++			
cereal indet detached sprout	cereal sprout		5		23				
Cereal indet detached embryos	Cereal embryos								26
Legumes:									
small *Vicia/Lathyrus* sp. [<2mm] seed	small-seeded Vetches/Peas/Garden	13							

Sample No.		**64**	**78**	**77**	**105**	**196**	**10**	**84**	**79**
Context No.		1875	2149	2148	2333	3506	471	1457	2162
Feature No.		1881	1424	1424	1424	3503	473	1456	2157
	Peas								
medium *Vicia/Lathyrus* sp. [2-4mm] seed	medium-seeded Vetches/Peas/Garden Peas	32						6	3.5
large *Vicia/Lathyrus/Pisum* sp. [>4mm] seed	large-seeded Vetches/Peas/Garden Peas	3					7.5		
Indet legume fragments		11							
pod fragments		19							
tendrils		10							
Pisum sativum L. seed	Cultivated pea	2							
Vicia sativa L. seed	Common vetch	5							
Other food plants :									
Ficus carica L. seed	Fig							1m	
Prunus cf. domestica kernal	Damson/plum		1						
Vitis vinifera L.seed	Grape/Raisin							1m	
Dry land herbs:									
Agrostemma githago L. seed	Corncockle		1 tf			1			2
Anthemis cotula L. seed	Stinking Chamomile		2	1			46		2
Apium graveolens L. seed	Wild celery			1w					
Arctium lappa L. seed	Greater burdock			1m					
Brassica nigra type seed	Black Mustard (coarse-textured seed)		1				4		
Brassica/Sinapis sp. seed kernel	Cabbages/Mustards kernel							6m	
Carduus/Cirsium sp. achene	Thistles		8		1				1
Caryophyllaceae indet. [1-3mm] seed	medium-seeded Pink Family								
Centaurea cyanus L. achene	Cornflower	17	1			2	1	2	
Centaurea sp. Seed	Cornflower-type inner seed			1					
Centaurea sp. achene	Cornflower-type	4	9						
Chenopodiaceae indet. seed	Goosefoot Family				1m			3 + 5m	
Chenopodium album L. seed	Fat-hen								
Small *Chenopodium* sp. <2mm seed	goosfoots					51			
Cirsium cf. vulgare (Savi) Ten.seed	Spear thistle		4						
Conium maculatum L. mericarp	Hemlock seed coat			1w		1			
Galium aparine L. nutlet	Cleavers							6	1
Hyoscyamus niger L. seed	Henbane			1 + 16w				3u	
Lamium sp. nutlet	Dead-nettles				9w	1			
Lithospermum arvense L. kernal	Corn Gromwell							9m	3
Lolium cf. temulentum L. caryopsis	Darnel				1		543		1
Malva sp. nutlet	Mallows		1 tf						
Medicago lupulina L. fruit	Black Medick		3						
Montia fontana ssp. chondrosperma (Fenzl) Walters seed	Blinks							1	
Onopordium acanthium L. seed	Scotch thistle		3	1					

Sample No.		**64**	**78**	**77**	**105**	**196**	**10**	**84**	**79**
Context No.		1875	2149	2148	2333	3506	471	1457	2162
Feature No.		1881	1424	1424	1424	3503	473	1456	2157
Papaveraceae indet. Seed	Poppy family			1w	10w + 2m				
Papaver argemone L. seed	Prickly Poppy				12w				
Papaver dubium L. seed	Rough poppy				13w				
Papaver rhoeas L. seed	Common Poppy				3w				
Papaver somniferum L. seed	Opium Poppy								
Persicaria maculosa Gray achene	Redshank								
Plantago lanceolata L. seed	Ribwort Plantain		3						
Plantago media L. seed	Hoary plantain					2			
small Poaceae indet. [< 2mm] caryopsis	small-seeded Grass Family		1						
medium Poaceae indet. [3-4mm]	medium-seeded Grass Family		1		2	3			
Polygonaceae indet. achene	Dock Family		3				1	3	
Polygonum aviculare L. achene	Knotgrass							2m	
Ranunculus cf. acris L./*repens* L./*bulbosus* L. achene	cf. Meadow/Creeping/Bulbous Buttercup		1 tf	2w		1			
Rumex acetosella L. achene	Sheep's Sorrel								
Rumex cf. cripus L. achene	Curled Dock				1	2		1	
Rumex cf. obtusifolius L. achene	Broad-leaved Dock								
Rumex sp. achene	small-seeded Docks	1	7	2w	4 + 1m	2		1 + 7m	2
Silene sp. Seed	Campions				1m	8		2 + 2m	
Silene sp. Seed-head	Capsule fragment containing seeds					1			
Silene cf. vulgaris (Moench) Garcke seed	Bladder campion				2w				
Sinapis sp. seed kernel	Mustard			1w					
Stellaria media L. Vill. Seed	Common Chickweed			1w				2	
Thalictrum flavum L. achene	Common Meadow-rue			1m + 1w					
small *Trifolium* spp. (<1mm) seed	small-seeded Clovers		8	5		4		4	2
Large *Trifolium/Medicago* spp. (2-3mm) seed	large-seeded Clovers/Medicks	1	56			2		1	
Urtica dioica L. seed	Common Nettle			99w	8m			5m	
Urtica urens L. seed	Small Nettle			1m + 7w					1m
Wetland/aquatic plants:									
Small trigonous *Carex* spp. (<2mm) nut	small triangular-seeded Sedges		2	1 + 77w	1 + 33w + 6w				
medium trigonous *Carex* sp. (2-3mm) nut	Common / Slender Spike-rush		5	2 + 4w	1 + 2w + 2m				
elongate lenticular *Carex* sp. (>2mm) nut	elongate & flat-seeded Sedges		7	2		2			
ovate lenticular *Carex* sp. (2-3 mm) nut	rounded & flat-seeded Sedges		15		3m				
Cladium mariscus (L.) Pohl leaf	Great Fen-sedge		++++	++		+++		+	++
Cladium mariscus (L.) Pohl nut	Great Fen-sedge			1		4			2
Eleocharis palustris (L.)	Spike rush		4	2	1m	1			

Sample No.		**64**	**78**	**77**	**105**	**196**	**10**	**84**	**79**
Context No.		1875	2149	2148	2333	3506	471	1457	2162
Feature No.		1881	1424	1424	1424	3503	473	1456	2157
Roem. & Schult./ uniglumis (Link) Schult. nut									
Juncus sp. seed	Rush		6						
Lemna sp. seed	Duckweed			1w					
Schoenus nigricans L. nut	Black bog rush		8		1u	1		2	
Scirpus sp. Achene	Club rush		2			1			
Juncus/Carex sp. Flowers			8						
Tree/shrub macrofossils									
Rubus subgen. Rubus seed	Brambles			5u	4u				
Sambucus nigra L. seed	Elder			2u	2u			32u	6u
Other plant macrofossils:									
Charcoal <2mm		+++	+++	+++	+++	+++	+	+++	+++
Charcoal >2mm		++	+++	+	++	+ ++		++	+++
Charcoal >10mm						++			+
Charred stems			++++		+	++++			
Indet.culm nodes			67		4				
Silicates				++		++			+++
Bryophytes									
Indet.seeds		6f		7w					
vitrified charcoal						++++			
Other remains									
molluscs			+++b	++b		++b			
mineralised arthropod remains					++				+
waterlogged arthropod remains					+				
Cladoceran eppiphia				++	++				
Charred dropping 6mm diameter						1			

Table C.6.2: Period 3 samples

Discussion

C.6.52 The analysis of selected samples from Harvest Way has highlighted the importance of cereals and legumes as major food staples of the medieval and post-medieval period and has highlighted the exploitation of both wetland environments, most likely in the Fens and the sandy soils of neighbouring counties.

C.6.53 The cereals throughout both the medieval and post-medieval periods of this site have remained fairly constant with bread wheat being the most common cereal recovered. Bread wheat would most likely have been used for milling to produce flour to make bread, a dietary staple. Wheat would have been the preferred grain for making bread although the cheaper rye bread may have been more common among the peasant class. During the medieval period some crops were occasionally grown together; wheat and rye were cultivated as a mixed crop known as 'maslin' and would have been sown in the autumn. In the 13th century barley and rye were the most important cereals with wheat increasing in importance in the 14th century (Dyer 1994, 88). Cereal grain would have been imported into the site stored in sacks and then presumably used in portions. If storage conditions were not ideal the grain would be subject to insect/pest attack and, if it were to get damp, the grain would have started germinating. It is difficult to distinguish if grain has been deliberately allowed to germinate for malting or whether it

is spoiled grain. It is assumed that grain that has been used for brewing would show relatively even germination determined by the length of the sprouts. Why such grain should subsequently become burnt is subjective; it is possible that the temperature of the malting process was not controlled resulting in a fire or smaller quantities could suggest that grain was spilled, swept up and burnt deliberately although any spare grain would have presumably been fed to backyard livestock. Throughout the medieval and into the post-medieval period, small-scale brewing would have been common on a domestic level.

C.6.54 Barley was the preferred malting grain and there is evidence in several samples from both periods of this site that the barley has germinated which suggests brewing activities, fitting in well with the probability that some of the buildings were inns. The yeast produced in brewing would also have been used in breadmaking. Drinking water was commonly contaminated and it was known that it was safer to consume beer. Home-brewed ale or 'small-beer' had a low alcohol content and was drunk throughout the day as the main liquid content of the daily diet. The brewing industry developed from what was essentially the occupation of women, selling the ale that they produced from their homes and in towns in the 14th century to larger, professional enterprises dominated by men during a period of socio-economic change (Bennett 1996, 7) that was most probably brought about with the introduction of hops in the 15th to 16th centuries. There is documentary evidence of inns on the Harvest Way site that are likely to have replaced earlier structures, as the positioning of these brew-houses would have attracted the passing trade on the route into and out of the main town.

C.6.55 Large quantities of cereals raise the question of how much was actually discarded, bearing in mind only a small proportion of what was burnt would actually survive as most of the material would have been reduced to ash and only those grains that burn in a certain area of a fire would fully carbonise. Straw is likely to be under-represented as it is less likely to carbonise (Boardman and Jones 1990) but it is likely to have been a major component of the original material.

C.6.56 Wetland resources have been demonstrated as being of great economic importance. Great Fen sedge was one of the major vegetation types of the Fen and was commonly used for thatching and as fuel. It was particularly favoured for the use in bread ovens (Rowell 1986) but it would not be a suitable fuel for malting as it burns rapidly at high temperatures. Malting requires as a steady, moderate temperature to roast the grain (Ballantyne 2006). Evidence of charred remains of this wetland plant species was found at both Newmarket Road and Coldhams Lane but was notably absent from Eastern Gate (de Vareilles 2013). Peat was widely used as fuel in medieval towns and it is likely that many of the wetland seed assemblages reflect its use and also demonstrate the importance of trade at sites that are neither urban nor fully rural but are situated in between. The presence of plants that are grown on sandy soils such as rye and heather are further evidence of the importation of such commodities. Chaff elements are frequent and indicate that grain was not always imported in a fully cleaned state. The charred seed assemblage is also quite consistent throughout both periods with similar taxa occurring in most of the assemblages.

C.6.57 The weed seed assemblage from this site is diverse and provides evidence of both segetal and ruderal plants. In reality the distinction between ecological groups is somewhat blurred as many of the plants have broad habitats, especially those of disturbed soils which are created through both cultivation and the digging of pits. The waterlogged samples are particularly useful for building a picture of the flora that would have been growing in the near vicinity. Weed seed dispersal is most commonly through

wind which would result in seeds falling into wells and pits. Whilst most of these seeds would have decomposed, those that remain submerged in water can be preserved. This type of preservation is usually preferential to those seeds that have a tough outer coat (testa) and there will also be a bias to the plants that are high seed producers such as nettles.

C.6.58 The weeds that are most likely to have been growing amongst the crops such as corncockle, cornflower, corn gromwell would all have matured at a similar rate to the cereal and their seed heads would have been harvested with the cereal ears through the use of a sickle (Jones 1988). Attempts would have been made to remove these contaminating seeds as they could affect the quality of the flour. The use of sieves would have removed the smaller weeds and chaff fragments but the larger items that were a similar size to the cereal grains would have been retained within the sieve.

C.6.59 Water was obtained from wells and would also presumably have been collected as rainwater. The wells would have had to be kept clean and are likely to have been covered. The purity of the water within a well depended on the groundwater which percolates into the feature. Fluctuation in the level of groundwater would affect the water within the well and localised features such as cess pits, including those in neighbouring plots, could cause contamination of the wells. Primary fills containing waterlogged plants most likely reflect plants that were growing in the vicinity of the well whose seeds had blown in, such as nettles and thistles. The pollen spectrum (Smith, Section C.5 above) adds to the list of taxa associated with the site. Once the original function of the wells was discontinued (either because they became contaminated or dried out), they became a convenient depository for refuse. The numerous deposits in all of the Harvest Way wells, particularly when seen as lenses of different materials, indicates that this secondary use took place over a period of time and that they were used for the disposal of all manner of domestic, industrial and latrine waste. Organic waste would have contracted in volume as it decayed, over time forming lenses of matted material. The nature of the waste deposited would have attracted flies and vermin and would most definitely have been very noisome. The smell could be alleviated somewhat by adding a sealing layer of charcoal and/or lime. By the post-medieval period the lack of mineralisation in pits suggests that cess was disposed of in specific features by this phase and there is at least one feature that appears to have been purposely dug as a cess pit (**1424**). Cess pits were often placed under cellar floors or in the yards of properties, often along the neighbouring boundary. Pit **1424** is unusual in the there is a void at the base which would suggest the upper deposits would be free-draining and yet there are several waterlogged deposits interspersed with charred deposits.

C.6.60 The medieval household economy would have included brewing, baking, dairying and the keeping of small-animal livestock with products being sold at local markets or to passing trade. The extensive sampling undertaken at this site has provided tantalising evidence of many of these activities. Later, in the post-medieval period, there is evidence at Harvest Way of inns which would have operated a similar economy but on a larger scale. Most of the evidence is in the form of domestic, culinary, industrial and animal waste would have been a constant problem with regards to disposal. Whilst much of the waste would have been removed from the site, particularly in the post-medieval period through the employ of 'gong farmers', there is substantial evidence that at least some of this waste was disposed of by burial on site. There would be little vegetable waste on a site such as this and the carbonised and mineralised remains that have been preserved offer only a minuscule insight into the diet. There is also a bias to the types of remains that are preserved. Vegetables such as roots, herbs *etc*. do not

preserve unless they have been allowed to set seed, but would have constituted a major component of the diet and it is very likely that at least some of these food plants would have been cultivated in kitchen gardens within the backyards.

C.6.61 The backyards to the properties offer limited space for pit digging and it is an almost certainty that pits dug in the later periods, including purpose-dug cess pits, would have resulted in upcast that may have been dumped in other open features. It is highly likely that this has contributed to the mixing of deposits. Most of the samples chosen for analysis originate from features that were at the rear (southern) part of the site and this may reflect a different type of backyard activity. Pit **519** is the exception as it was situated at the north of the site and this may be why the contents differ from the other features.

C.6.62 There is little evidence in the plant remains of a distinction between the two periods other than that preserved remains are more common from the medieval period due to the increased activity at that time. The results of environmental sampling at this site are similar to samples from contemporary local sites at Cambridge Regional College, Brunswick Road (Atkins 2011), Eastern Gate, Newmarket Road (de Vareilles 2013) and also has direct comparisons to the Grand Arcade site in Cambridge (Newman 2013). Backyard features at a late 12th- to mid-14th-century rural site in Colville Road, Cherry Hinton, produced assemblages of charred cereals, legumes and weed seeds but very little chaff and was interpreted as originating from a midden spread or domestic/industrial waste that had been deposited in a single event (Fryer 2015). Contemporary well deposits at Neath Farm, Cherry Hinton similarly lacked chaff in the carbonised assemblages (de Vareilles 2013). Both sites, being more rural, were presumably less restricted in their disposal of refuse. Plant remains from the Grand Arcade site are of a similar nature and it is interesting to note the limited evidence for exotic plants such as figs, grape/raisins and spices, all of which are known to have been consumed during the medieval, and particularly the post-medieval period.

C.6.63 In summary, the analysis of the environmental samples from Harvest Way provides evidence that backyard activity included rubbish disposal, quarrying and industrial activities. It was also the location of wells, cess pits and ovens. A likely scenario is that the backyards were used for the growing of kitchen herbs and feed for livestock such as chickens and pigs, which would have been fed on much of the culinary waste and spoiled grain. Wells would be the main water source and when they dried out or became foul they were used as convenient depositories for waste of all sorts. It is highly probable that horses would have been stabled and the waste that they produced also had to be dealt with. In all probability these back yards would have been busy, muddy areas that were fully utilised throughout the medieval and post-medieval periods.

C.7 Radiocarbon Results

C.7.1 Table C.7.1 shows the results of the radiocarbon analysis of a sample of bone from human burial 1272.

Lab No.	Context	Material	Radiocarbon age BP	Calibrated Date (64.9%)	Calibrated Date (95.4%)	$\delta^{13}C$ %
SUERC-53420 (GU34302)	1272	Human bone	2540 +/- 31	795-591 cal BC	800–546 cal BC	-20.9%

APPENDIX D. BIBLIOGRAPHY

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Online Resources

http://www.pubshistory.com/Cambridgeshire/Bird Bolt

http://www.pubshistory.com/Cambridgeshire/Jolly Butchers

http://www.mola.org.uk/resources/medieval-and-post-medieval-pottery-codes

http://www.mernick.org.uk/BrownJugs/Face/FaceJugs.htm

http://northeastauctions.com/product/come-box-the-compass-and-british-ship-english-creamware-black-transfer-printed-jug-staffordshire-or-liverpool-1800-10

http://www.thepotteries.org/allpotters/726.htm

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http://collections.vam.ac.uk/item/O345985/italian-ruins-dish-minton-co

http://mudlarking.blogspot.co.uk/2012/06/

APPENDIX E. OASIS REPORT FORM

Project Details

OASIS Number: oxfordar3-264048		
Project Name Easterngate/Harvest Way		
Project Dates (fieldwork)	Start 03/02/2014	Finish 27/06/2014
Previous Work (by OA East) Yes		Future Work No

Project Reference Codes

Site Code: CAMEAG14	Planning App. No: 11/0219/FUL
HER No: CHER ECB3941	Related HER/OASIS No.

Type of Project/Techniques Used

Augering
Area Excavation
Documentary Search
Environmental Sampling

Monument Types/Significant Finds & Their Periods

Monument	Period	Object	Period
Buildings	Medieval/post-medieval	HSR	Prehistoric
Wells/Pits	Medieval post/medieval		
Ovens/hearths	Medieval		

Project Location

County: Cambridgeshire	Site Address:
District: Cambridge	9-15 Harvest Way, Cambridge
Parish: Barnwell	
HER: Cambridgeshire	
Study Area: 2440.9m²	National Grid Reference: TL 4635 5887

Project Originators

Organisation:	Oxford Archaeology East
Project Brief Originator	Cambridgeshire County Council HET (Andy Thomas)
Project Design Originator	Oxford Archaeology East (Aileen Connor)
Project Manager	Aileen Connor
Supervisor	Robert Atkins

Project Archives

Physical Archive	Digital Archive	Paper Archive
15 Trafalgar Way, Bar Hill CB23 8SQ CAMEAG13 & CAMEAG14	Y:\Cambridgeshire\CAMEAG13	15 Trafalgar Way, Bar Hill CB23 8SQ CAMEAG13 & CAMEAG14

Archive Contents/Media

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

Digital Media	**Paper Media**
Database	Context Sheets
Images (digital photographs)	Correspondence
Illustrations	Diary
Survey	Drawings
Test	Maps
	Matrices
	Research/notes
	Plans
	Report
	Sections

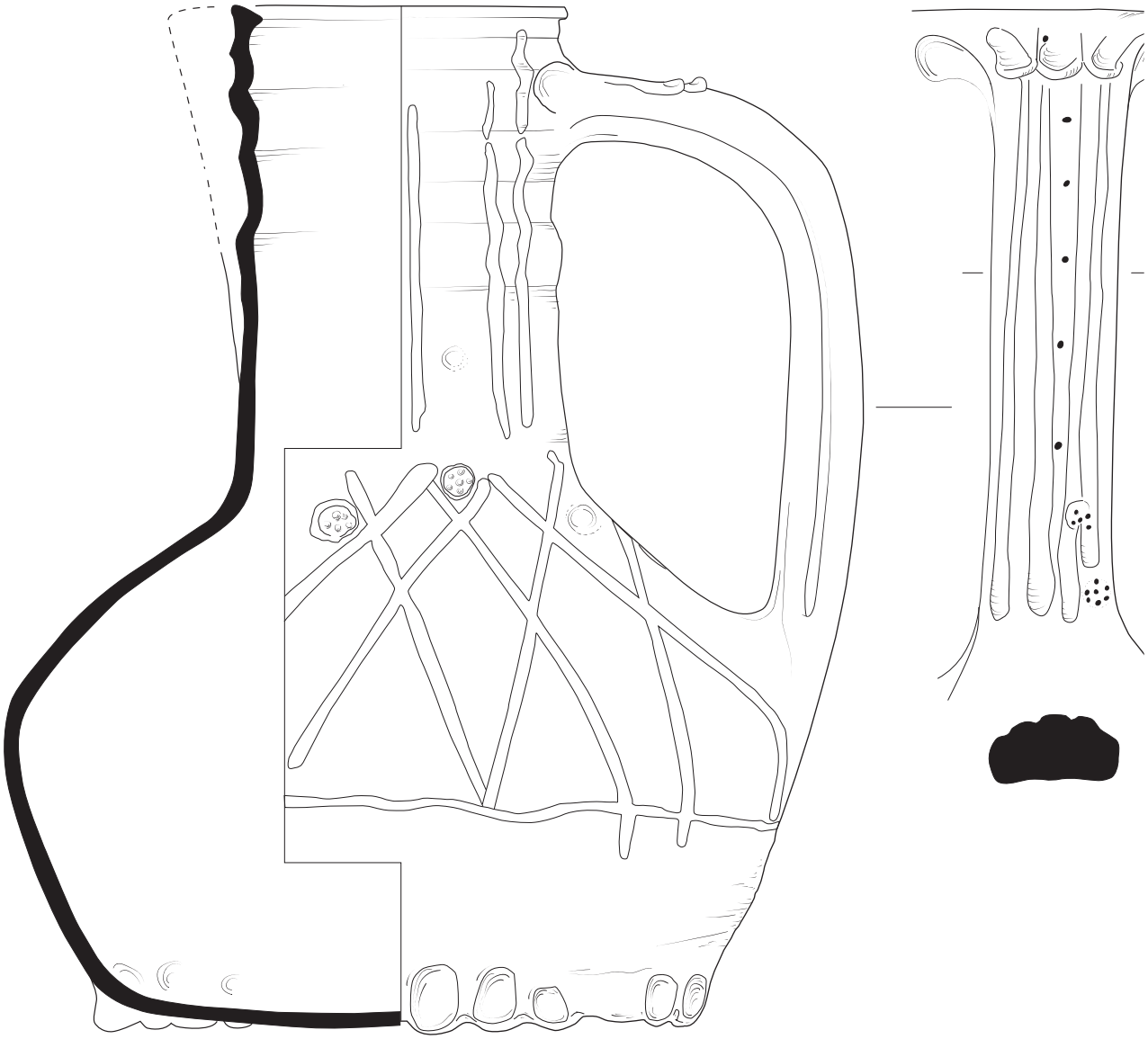


Fig B.1.1 Mill Green Fine ware jug. Scale 1:2

From Well 2554

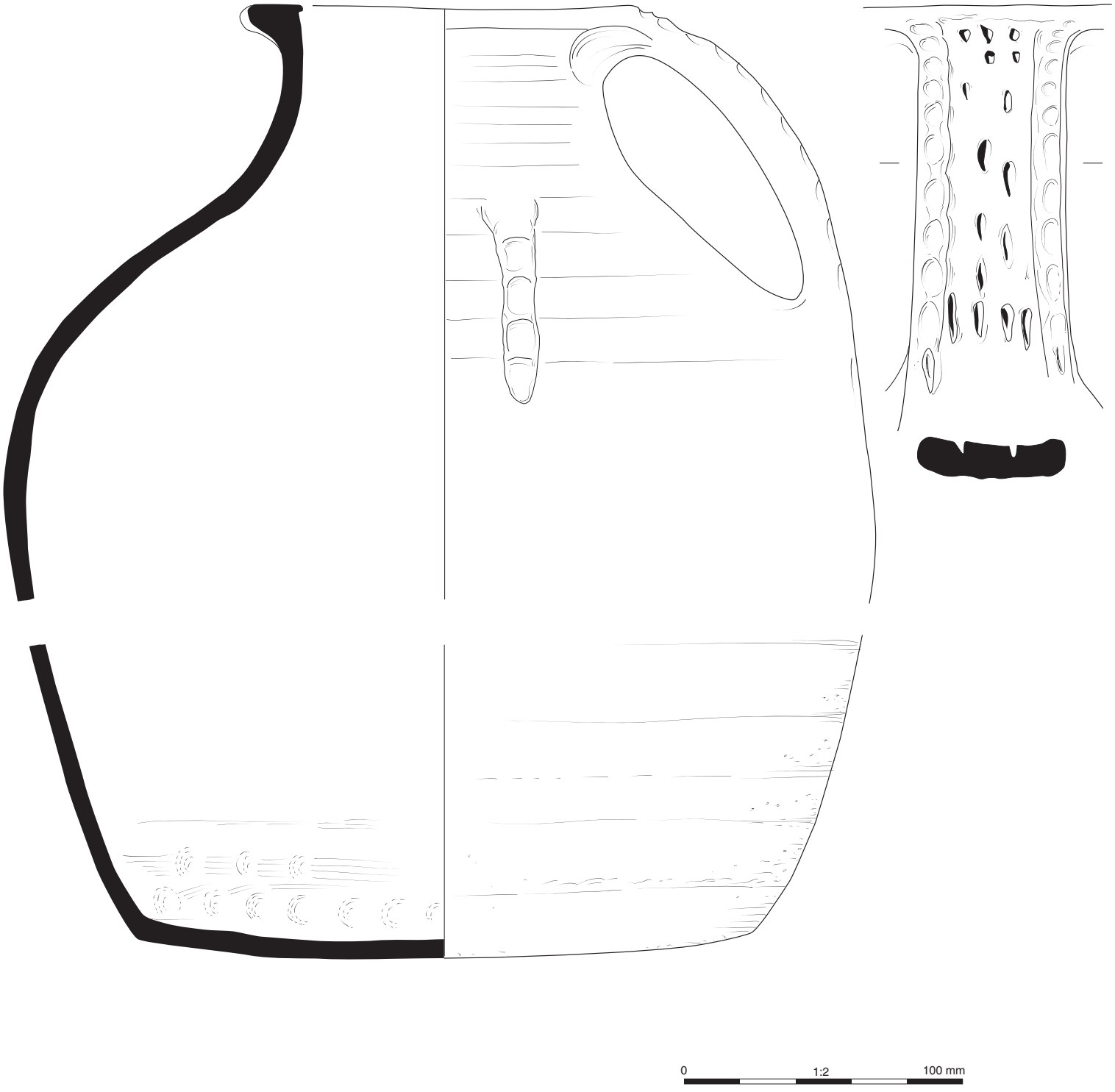


Fig B.1.2 South-east Fenland Medieval Calcareous Buff ware jug. Scale 1:2

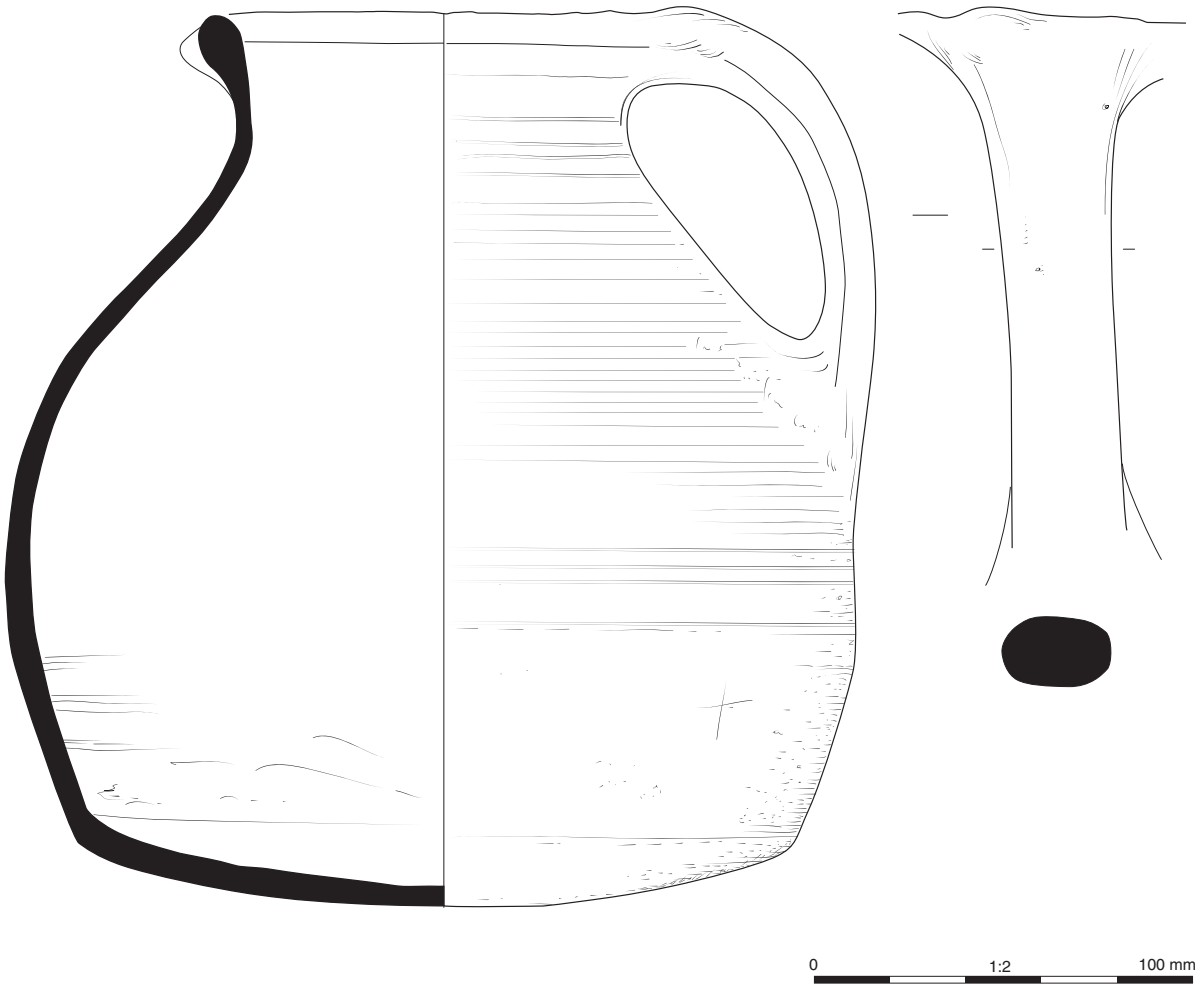


Fig. B.1.3 Medieval Essex-type Micaceous Grey Sandy ware jug from Well **2554**. Scale 1:2

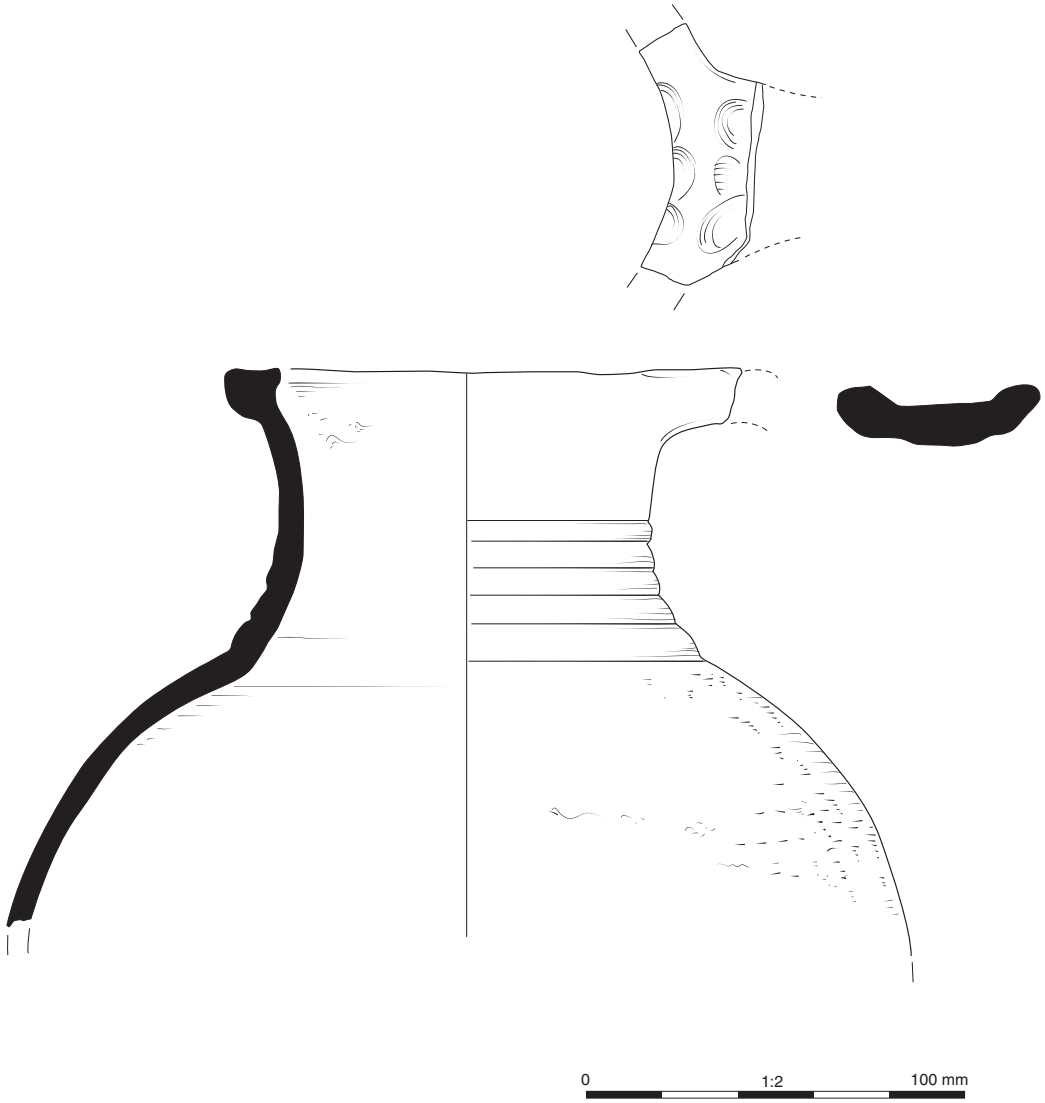


Fig. B.1.4 Medieval Essex-type Micaceous Grey Sandy ware jug from Well **2554**. Scale 1:2

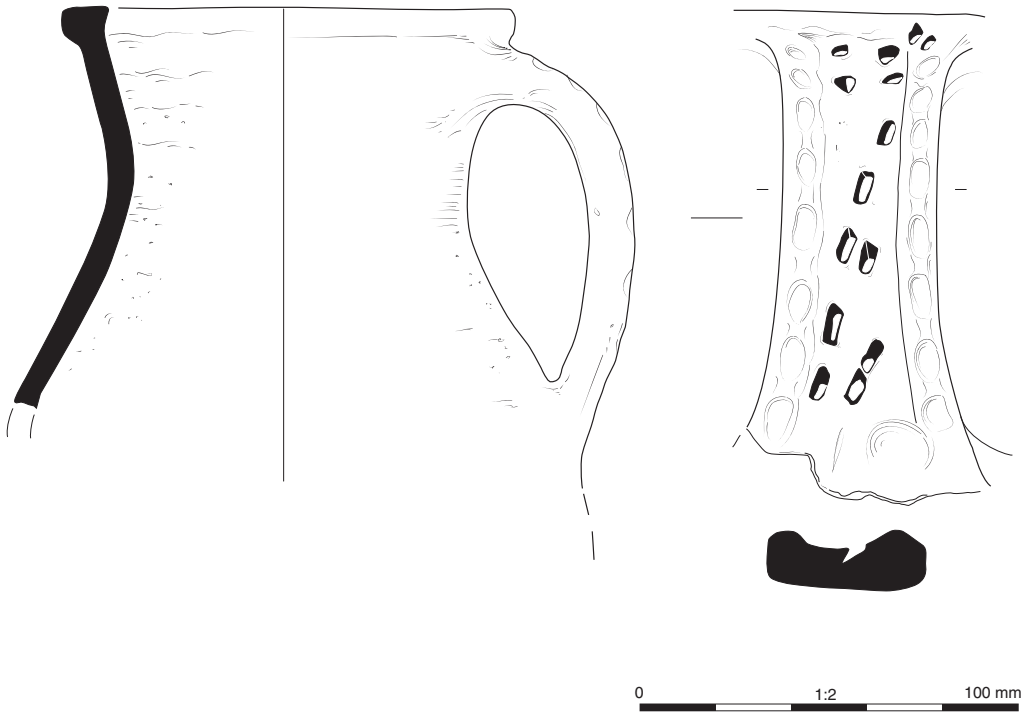


Fig. B.1.5 South-east Fenland Medieval Calcareous Buff ware jug from Well **2554**. Scale 1:2

Plate B.1.1 Spike Lamp possibly Developed Stamford ware SF486 Well **3470** 3628

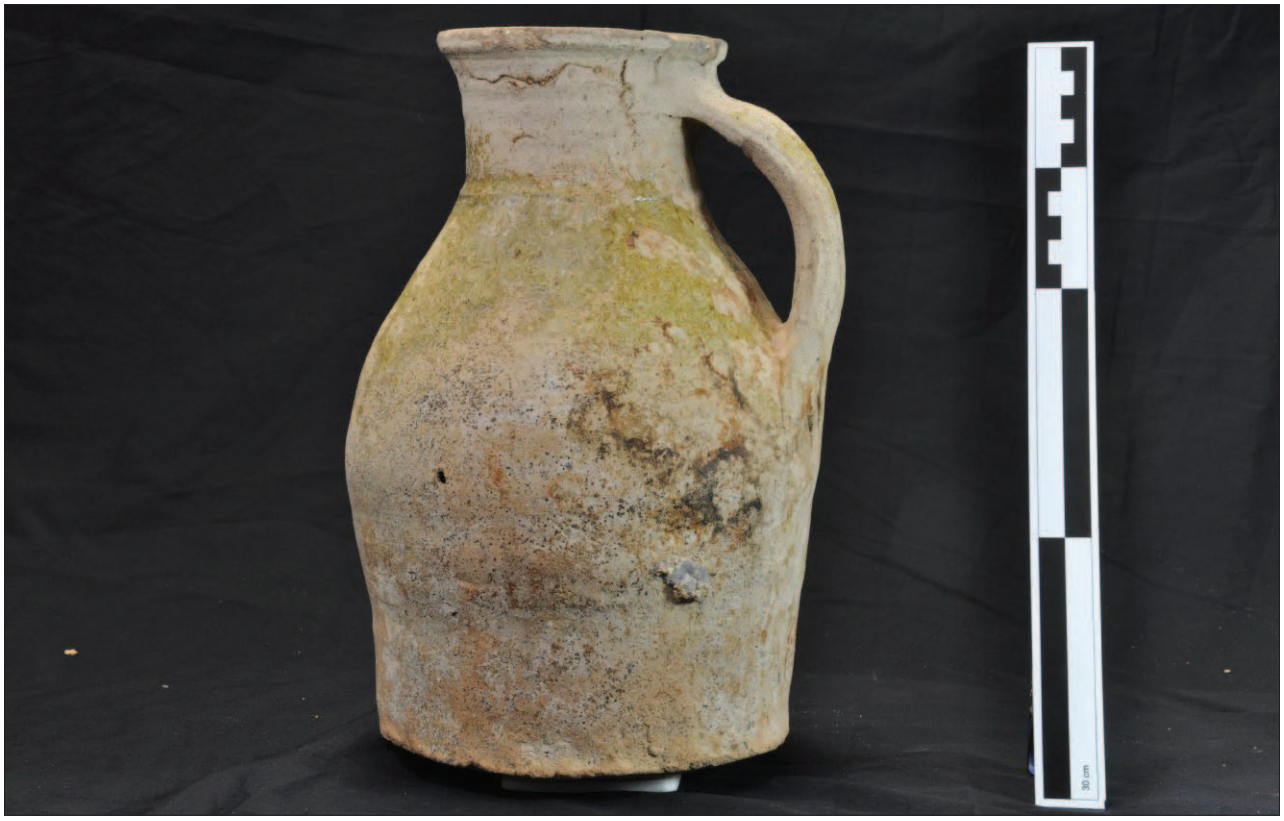


Plate B.1.2 Complete South-east Fenland Medieval Calcareous Buff ware jug, glazed on shoulders and with surviving lead pot mend Well **1939**, 3250

Plate B.1.3 Close-up of surviving lead pot mend on South-east Fenland Medieval Calcareous Buff ware jug Well **1939**, 3250

Plate B.1.4 Detail of handle join shadowing scoring on the vessels neck to aid the luting of handle to body on the South-east Fenland Medieval Calcareous Buff ware jug. Well **1939**, 3250

Plate B.1.5 Reconstructed Hedingham Fineware jug Well **2554**, 3269

Plate B.1.6 South-east Fenland Medieval Calcareous Buff ware jug handle Well **2554**, 3269

Plate B.1.7 Group of jugs from Well **2554** Ely ware jug, Hedingham Fineware jug and South-east Fenland Medieval Calcareous Buff ware jug handle

Plate B.1.7 Reconstructed Ely ware jug Well **2554** 3269

Plate B.1.9 Reconstructed Ely ware jug Well **3388** 3643

Plate B.1.10 Complete Ely ware jug from with hole made by auger SF568 Well **3388** 3643

Plate B.1.11 Ely ware jug Well **3470**, 3269

Plate B.1.12 Paffrath-type ladle handle from Well **3470** 3468

Plate B.1.13 Paffrath-type ladle handle from Well **3470** 3468

Plate B.2.1 Pearlwear mug with slip and engine turned decoration Pit 2735, 2736

Plate B.2.2 Staffordshire-type Slipware handled jar -chamber pot. Cellar, **2474**, 2473

Plate B.2.3 Detail of rim of Staffordshire-type Slipware handled jar -chamber pot showing decoration. Cellar, **2474**, 2473

Plate B.2.4 Fragments of a Refined White Earthenware figurine of a female figure playing the lute or mandolin Pit **1995**, 1994

Plate B.2.6 Anglo-Netherlandish Tin-Glazed ware ring-handled vase decorated with the Christogram IHS Pit 430, 5463643,decoration Pit **2735**, 2736

Plate B.2.6 Creamware with transfer-printed decoration, jug sherd with partial compas the design is know as 'come box the compass' the maker unknown. Cellar **2188**, 2191

Plate B.2.7 Pearlware rectangular dish with transfer-printed decoration, the pattern is known as Italian-ruins, the maker is unknown previous Pit **2494** 2495

Plate B.2.8 Pearlware jug with part of a transfer printed imperial measure showing the Royal coat of arms Well **3325**, 3319

Plate B.2.9 Pearlware transfer printed jug decorated with the Osterley Park pattern, maker unknown Pit **3334**, 3327

Plate B.2.10 Black Basalt ware teapot Pit **1995**, 1994

Plate B.2.11 Pearlware teacup with transfer-printed decoration Cess Pit **2199**, 2197

Plate B.2.12 Pearlware teacup detail of transfer printed decoration Cess Pit **2199**, 2197

Plate B.2.13 Pearlware transfer printed jar of JAMES KEILLERS Marmalade DUNDEE Pit **3589,** 3596

Plate B.2.14 Pearlware teacup with with square or French shaped handle and painted decoration of green vine leaves and grapes Pit **1995**, 1994

Plate B.2.151 Tea set of various fabrics with marmalade jar

Plate B.2.16 Pearlware saucer with transfer printed decoration showing a rural village scene with church, pattern and maker unknown Pit **1995**, 1994

Plate B.2.17 Yellow ware vessels with slip decoration; the mocha decoration on the chamber pot is brown while that on the carinated bowl is blue Pit **2735**, 2736

Plate B.2.18 Group of Pearlware and Refined White Earthen ware willow patterned vessels including the Mess 12 plate

Plate B.2.19 Detail of the Mess 12 plate Pit **2735**, 2736

Plate B.2.20 Drinking vessels from cess pit **1424** 2348

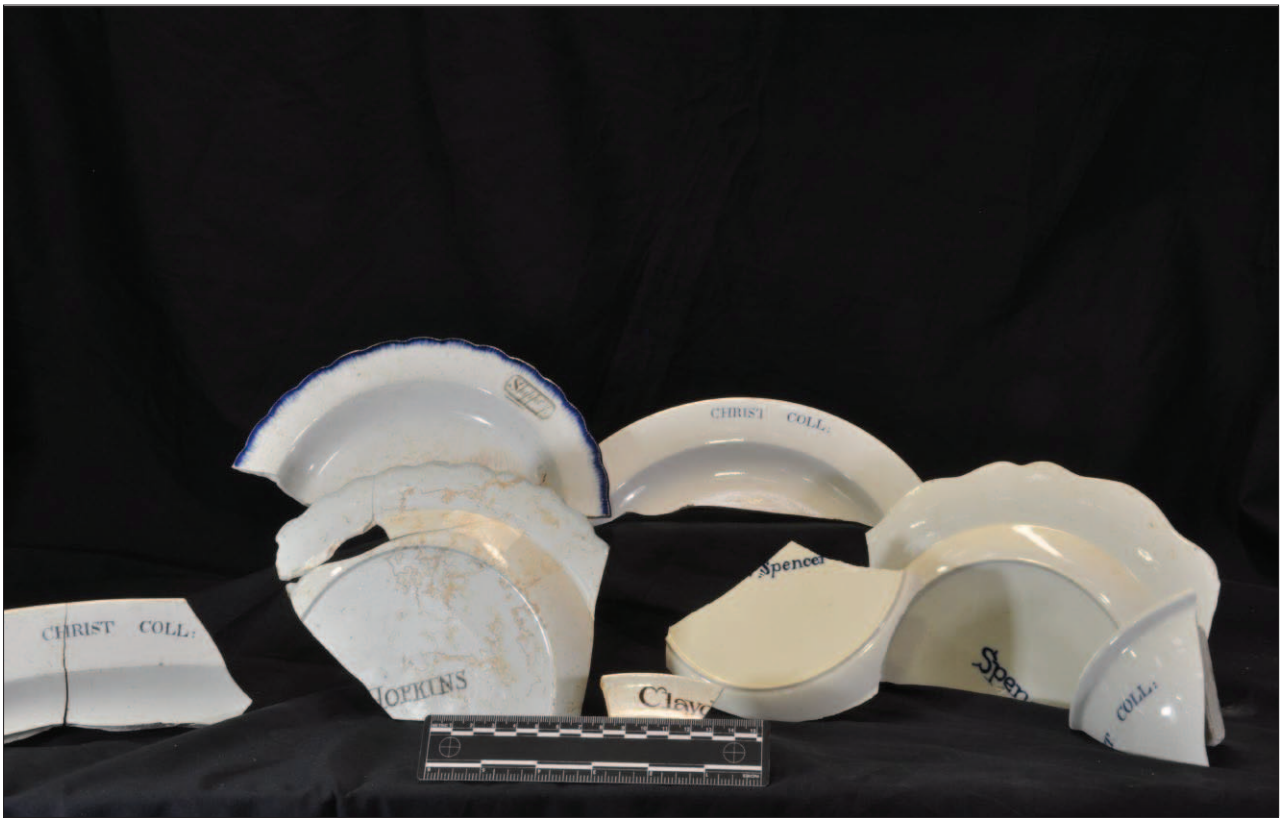


Plate B.2.21 Group of collegiate vessels

Plate B.2.21 Collegiate vessel from Pit **1914** 1915

Plate B.2.22 Collegiate vessel SF308 from cess Pit **2199** 2197

Plate B.2.24 Collegiate vessel SF312 with the name Clayd[on] Pit **1995**, 1994

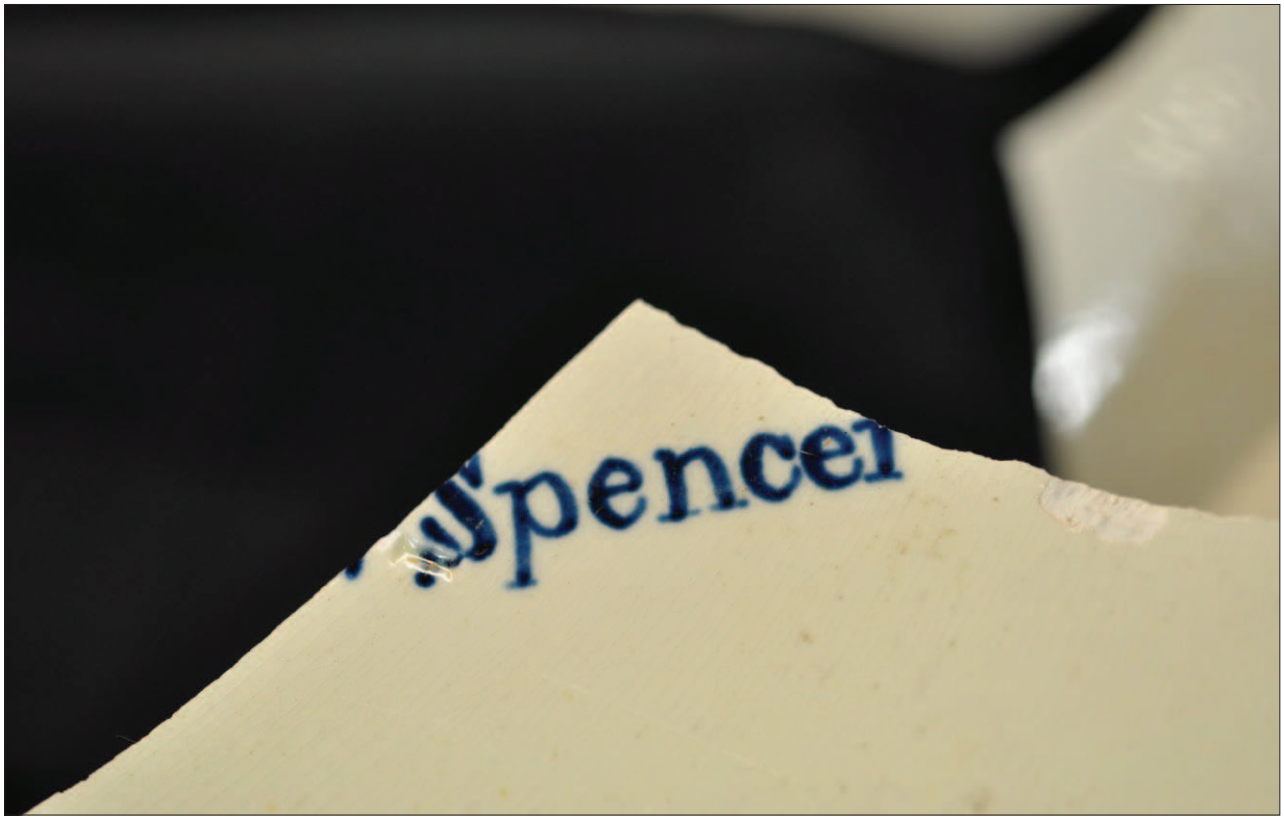
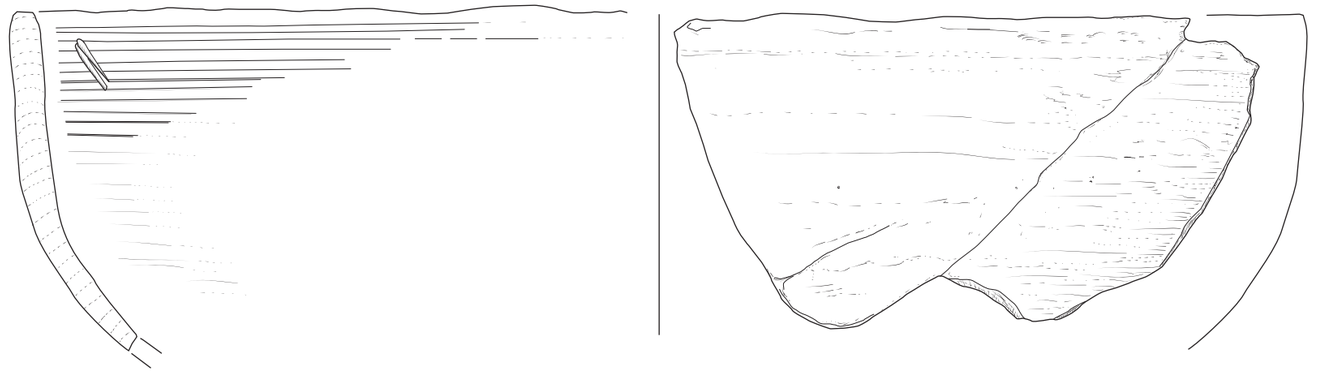


Plate B.2.25 Part of Collegiate vessel marked W Spencer SF302 **2188** 2191

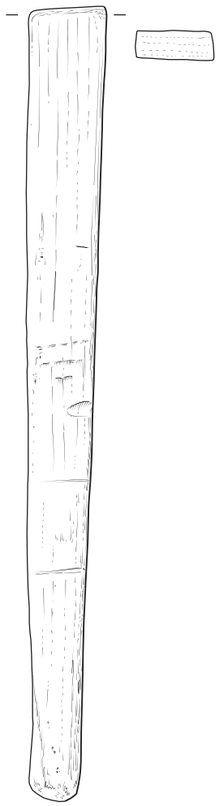
Wood ID 3

Interior lathe marks



0 1:1 50 mm

Wood ID 6



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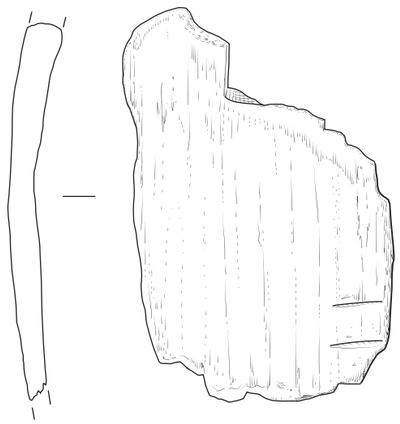

0 1:2 100 mm

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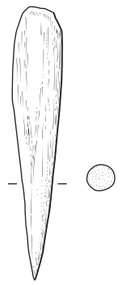

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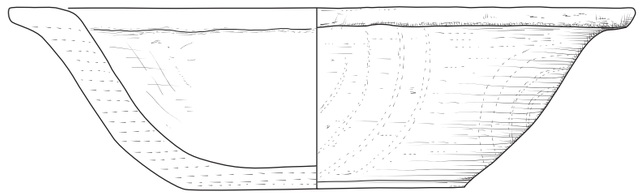

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Fig. B.10.1 Worked wood ID 3, 5, 6, 7, 21

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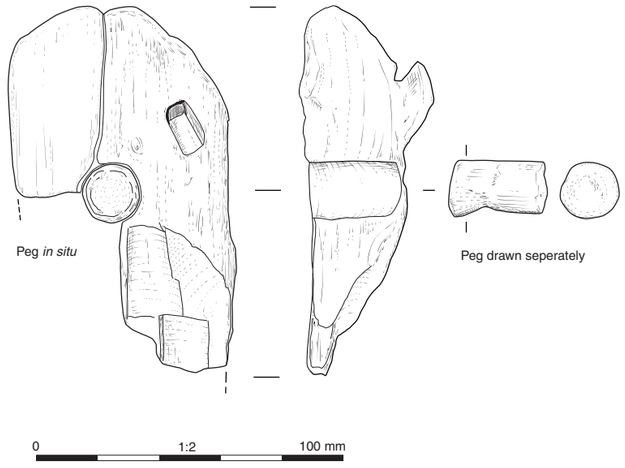
Wood ID 11



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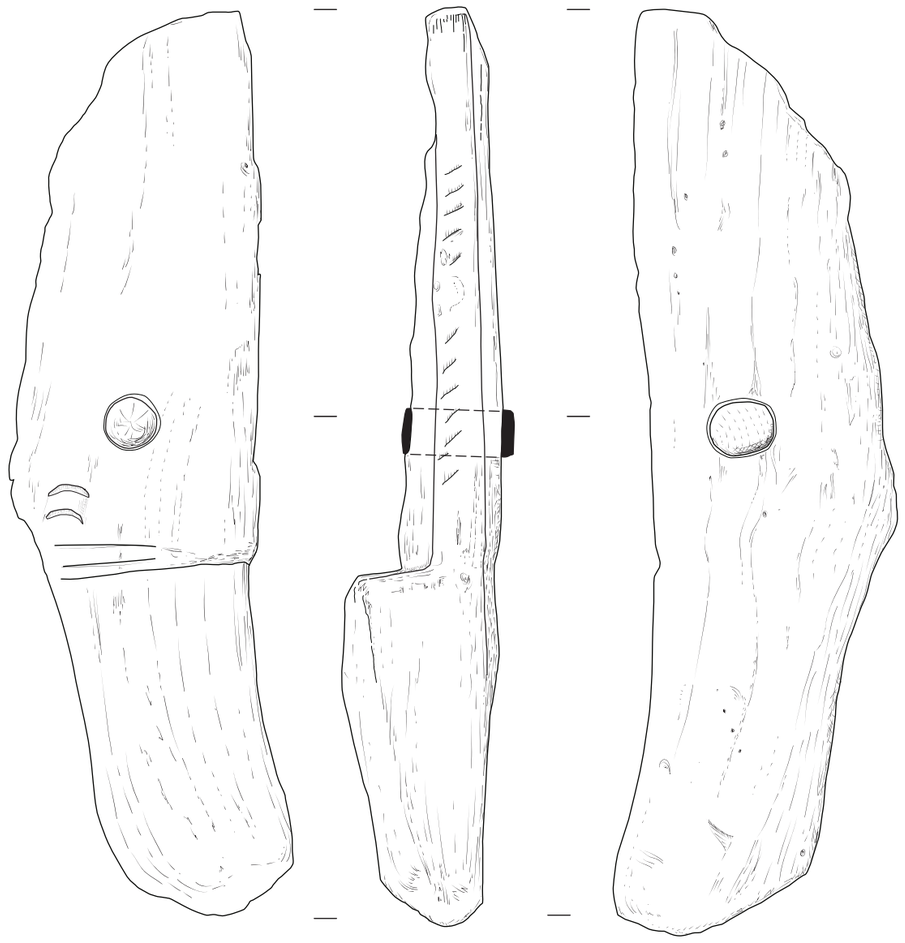

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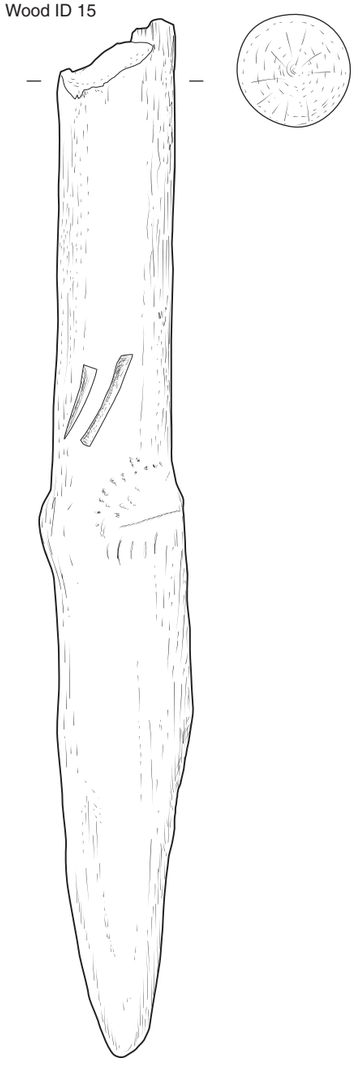

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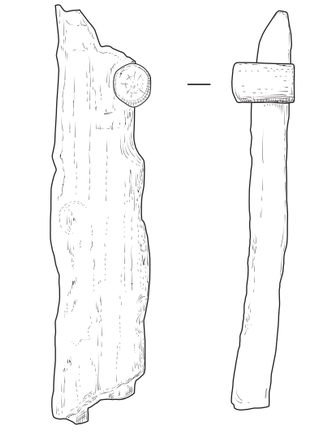

Fig. B.10.2 Worked wood ID 11, 12, 15, 16

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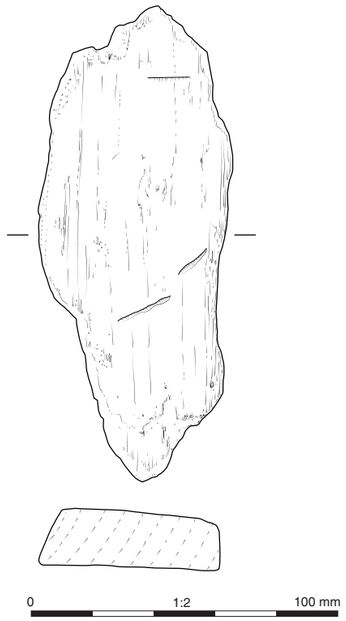
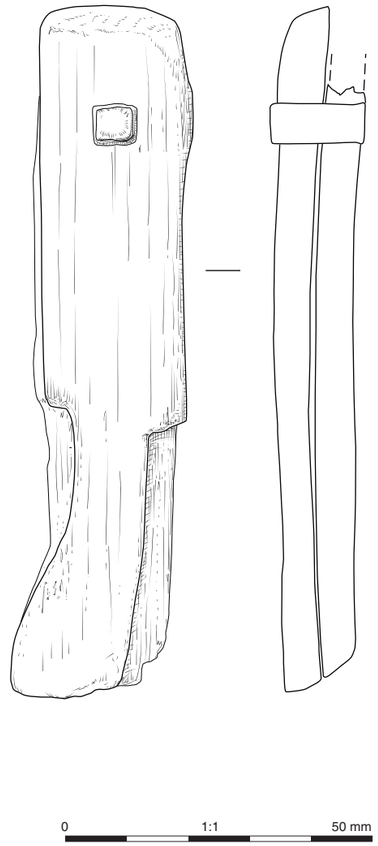
Wood ID 17



Wood ID 22

Wood ID 25



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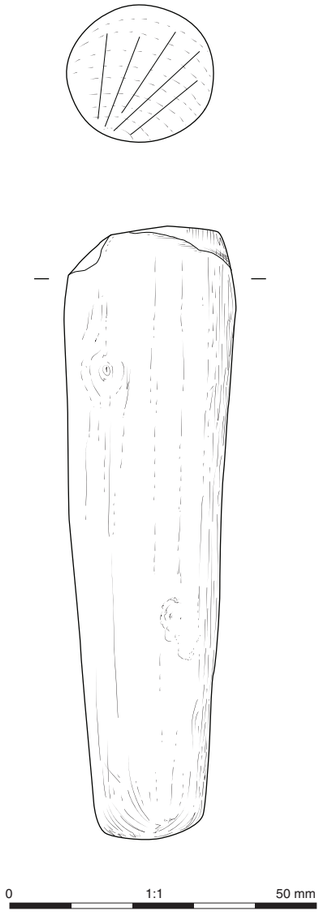

Fig B.10.3 Worked wood ID 17, 22, 25, 27

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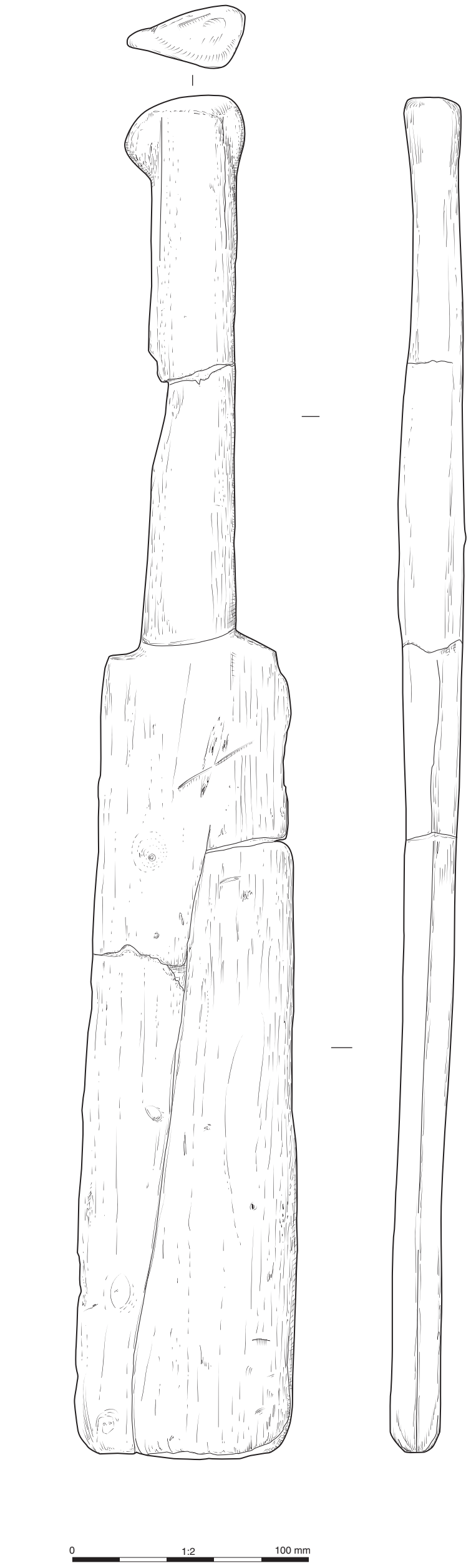
WOOD ID 35



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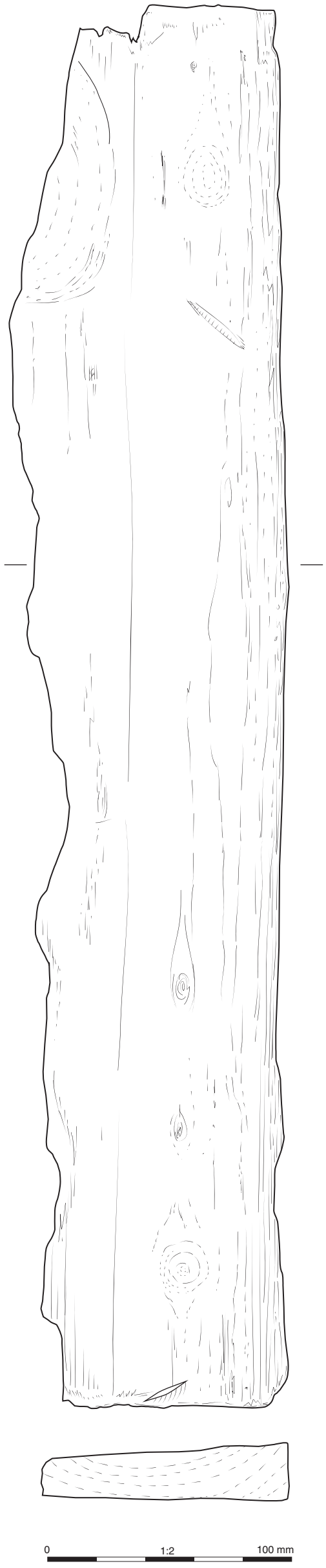
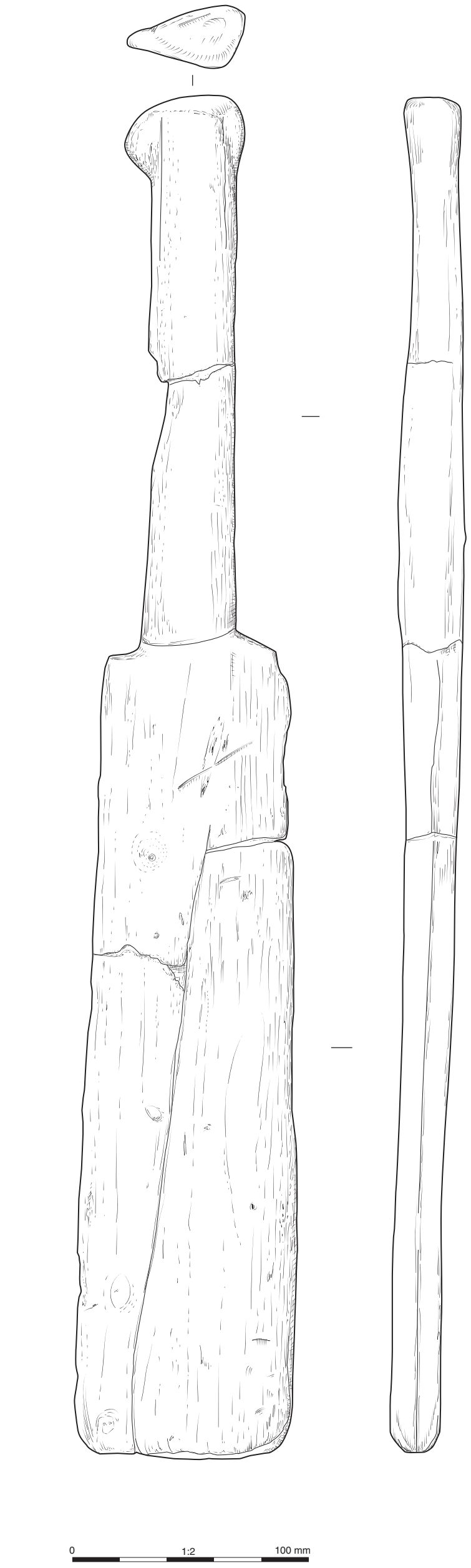


Fig. B.10.5 Worked wood ID 35, 36

WOOD ID 35



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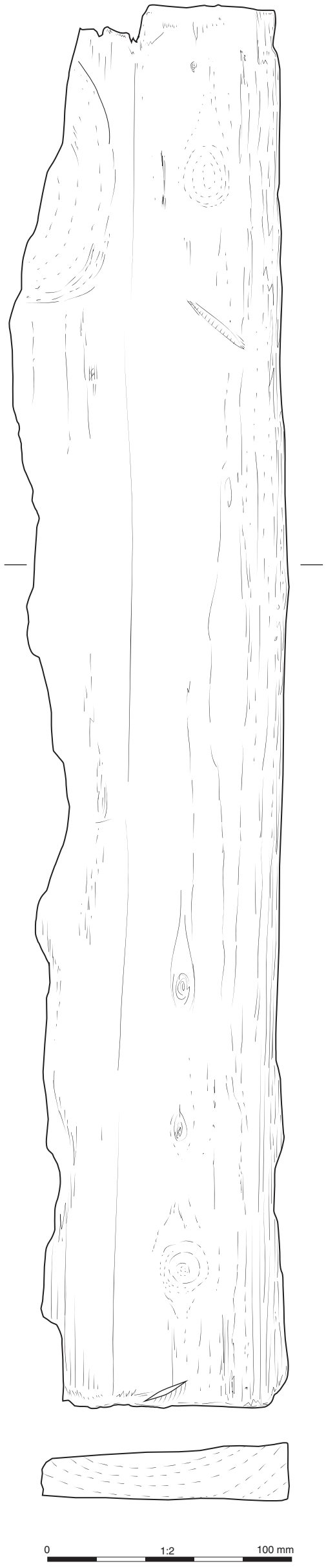

Fig. B.10.5 Worked wood ID 35, 36

0 20cm

Fig B.6.1: Use of the Ascia (BC 1 a)

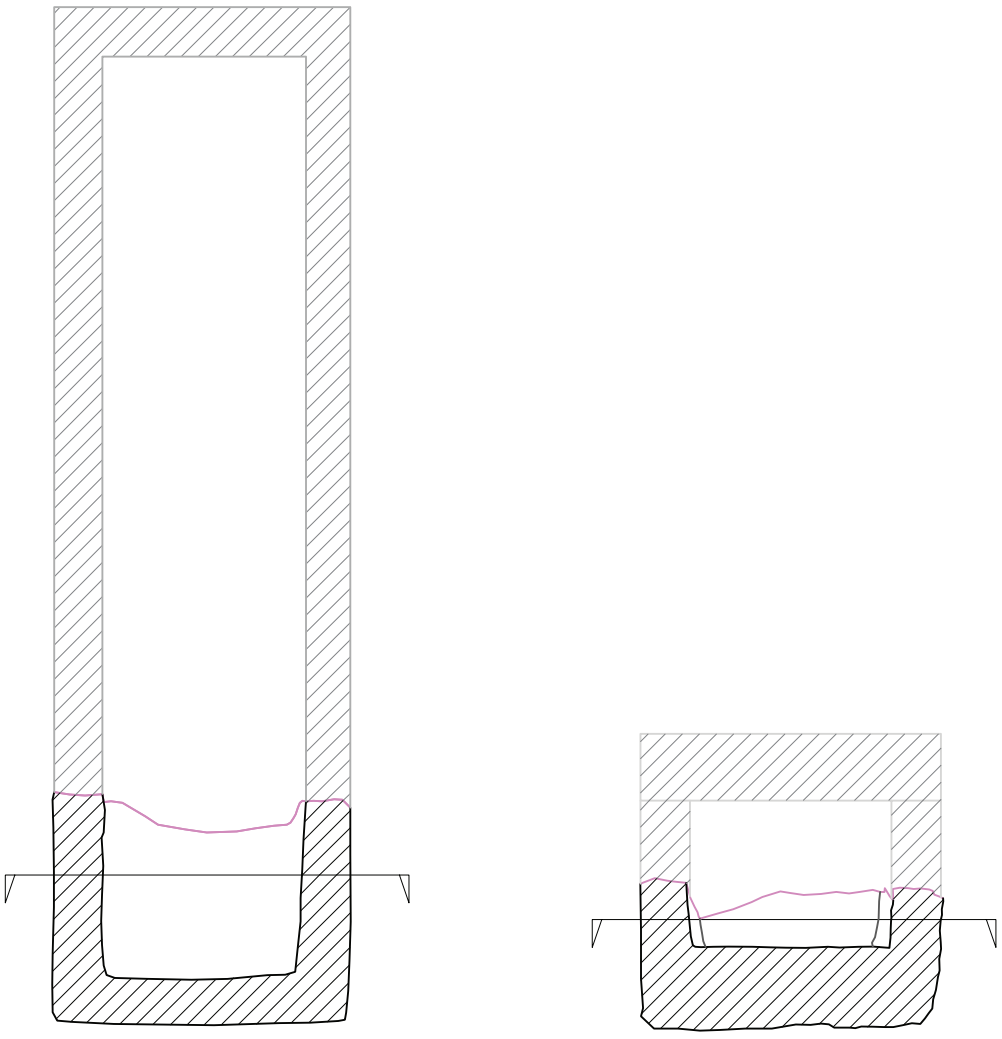

Fig. B.6.2 Re-used ?Roman child's coffin (BC I, a)

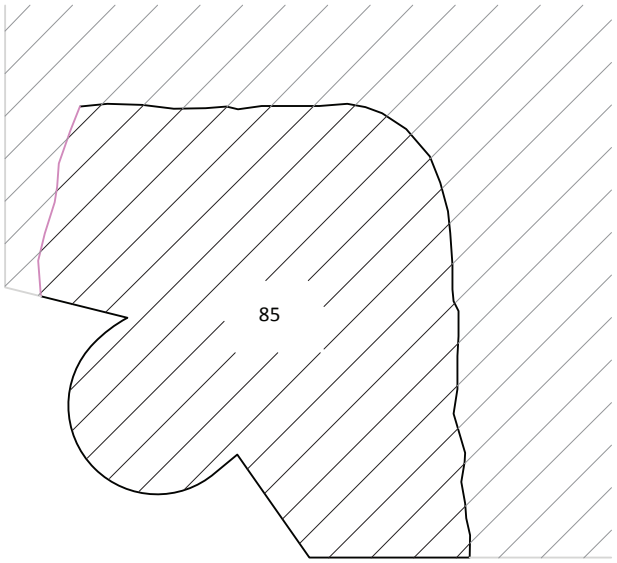

Fig. B.6.3 Table of BC I mouldings.

Fig. B.6.4 ?Barnack stone as employed in the 13C (<470>)

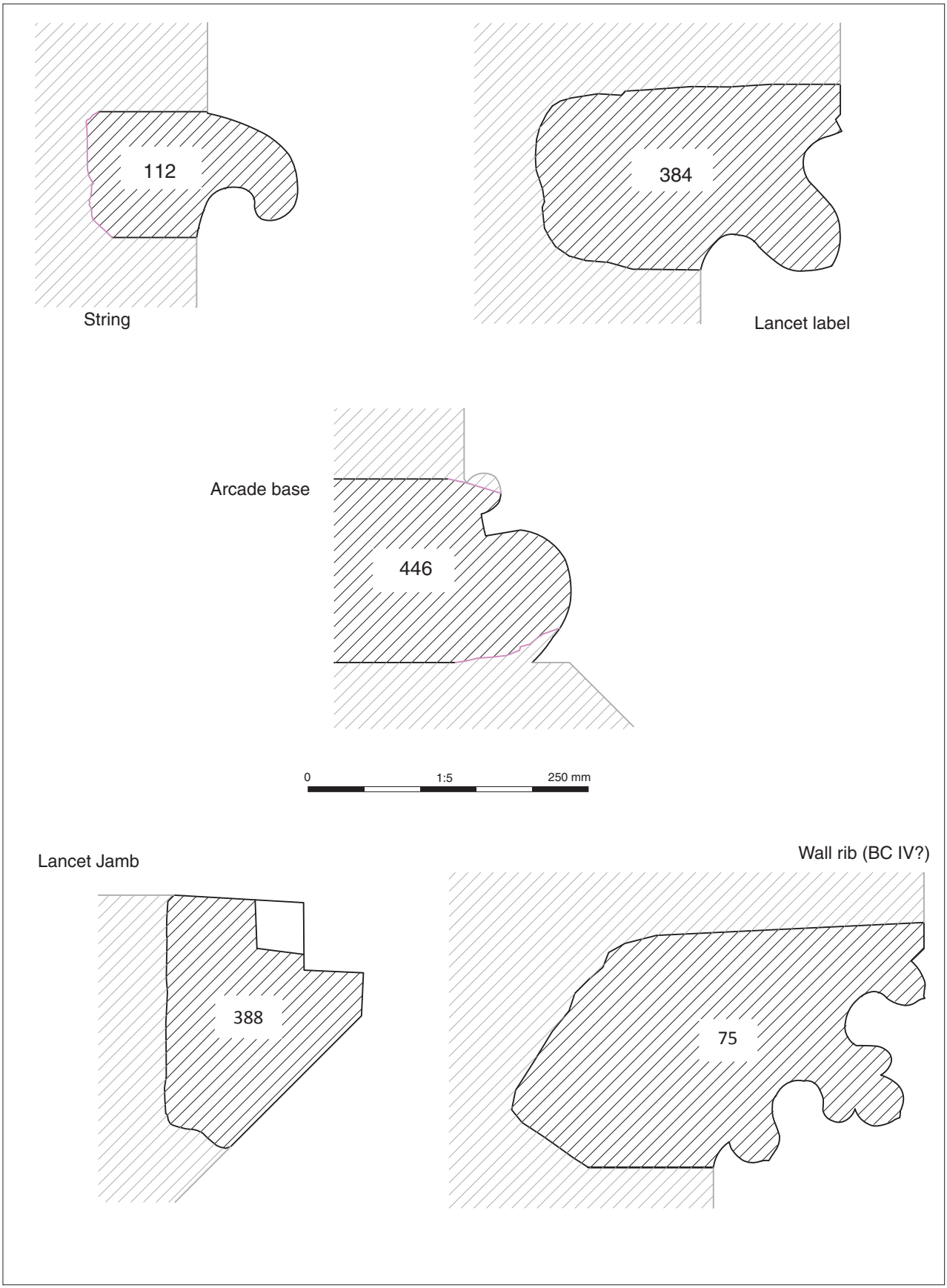

Fig. B.6.5 Mouldings employed in BC II.

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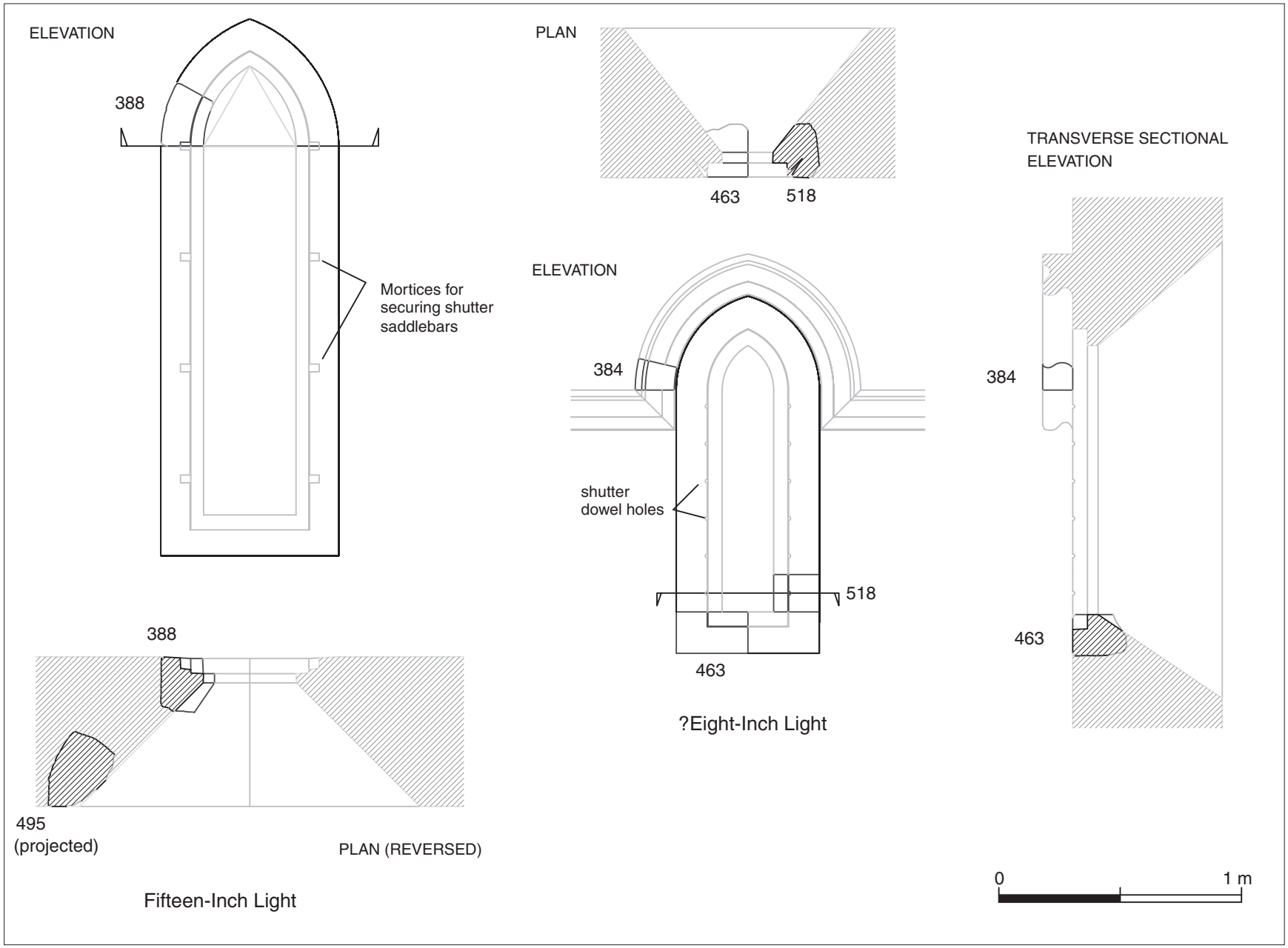

Fig. B.6.6 The small lancet windows (BC II, a)

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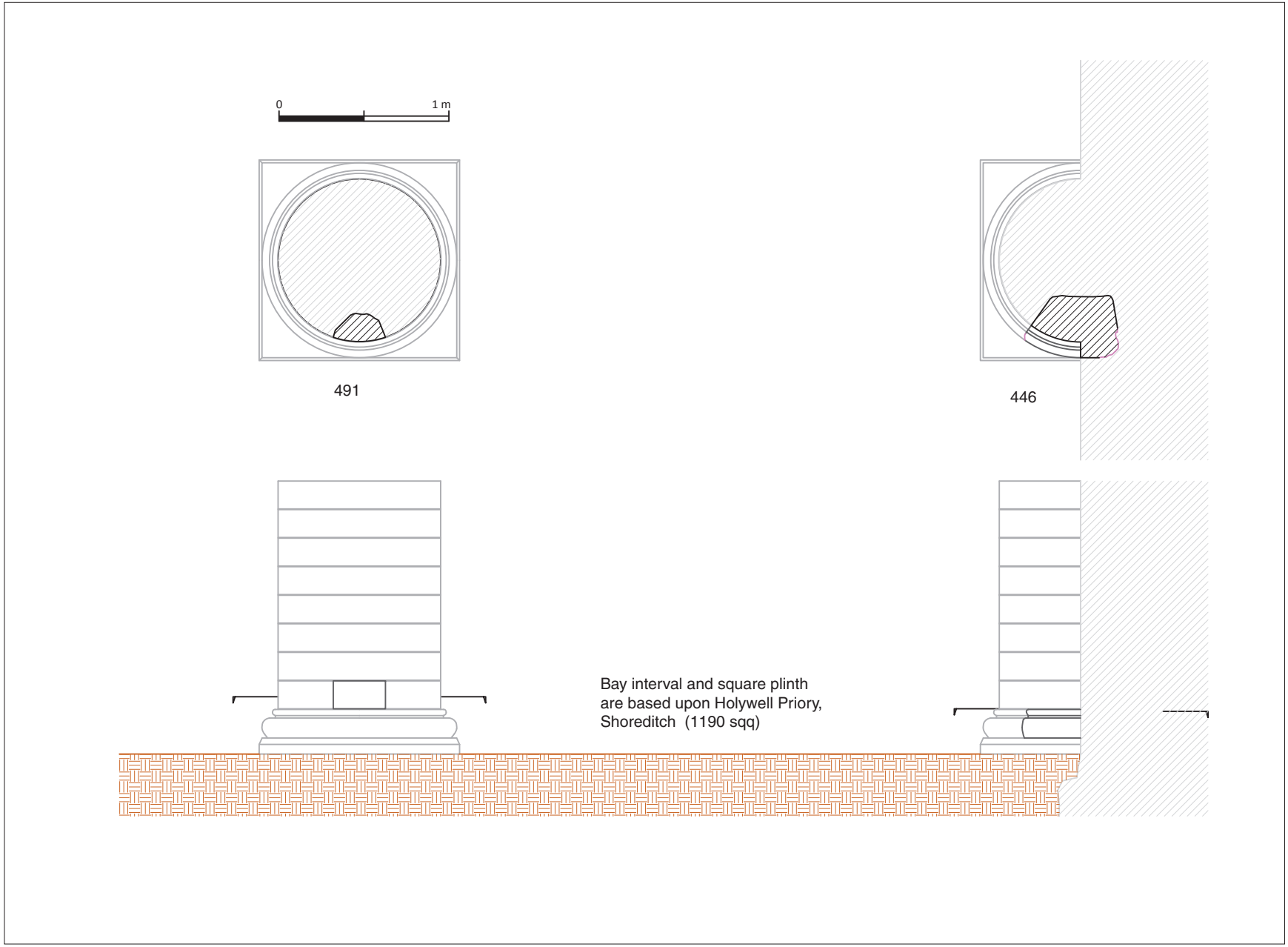

Fig. B.6.7 (BC II, e) plan of columnar arcade respond and base.

Fig. B.6.8 Re-cut capitals in echelon (clustered pier?)

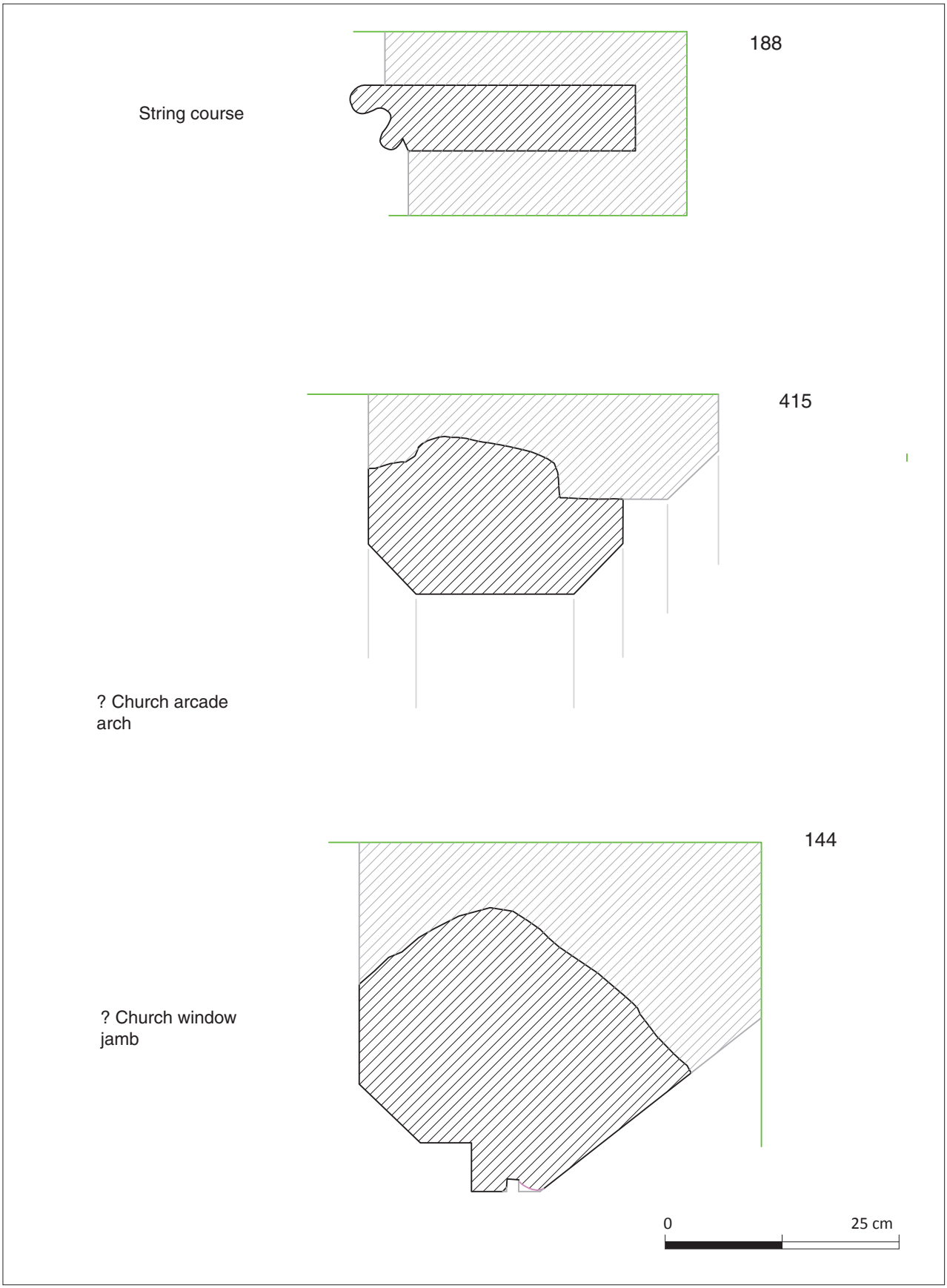

Fig. B.6.9 BC III 1225-1250 mouldings.

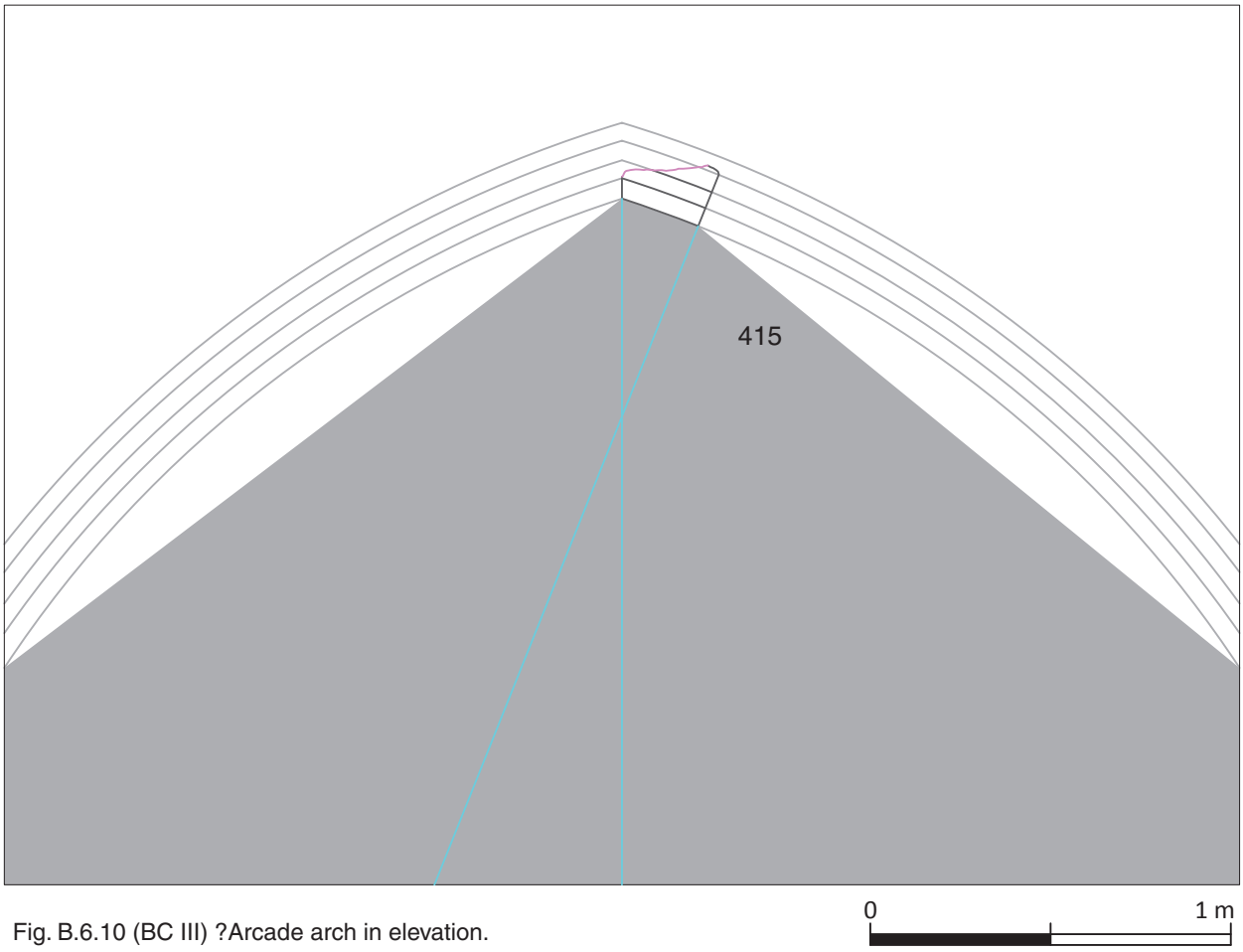

Fig. B.6.10 (BC III) ?Arcade arch in elevation.

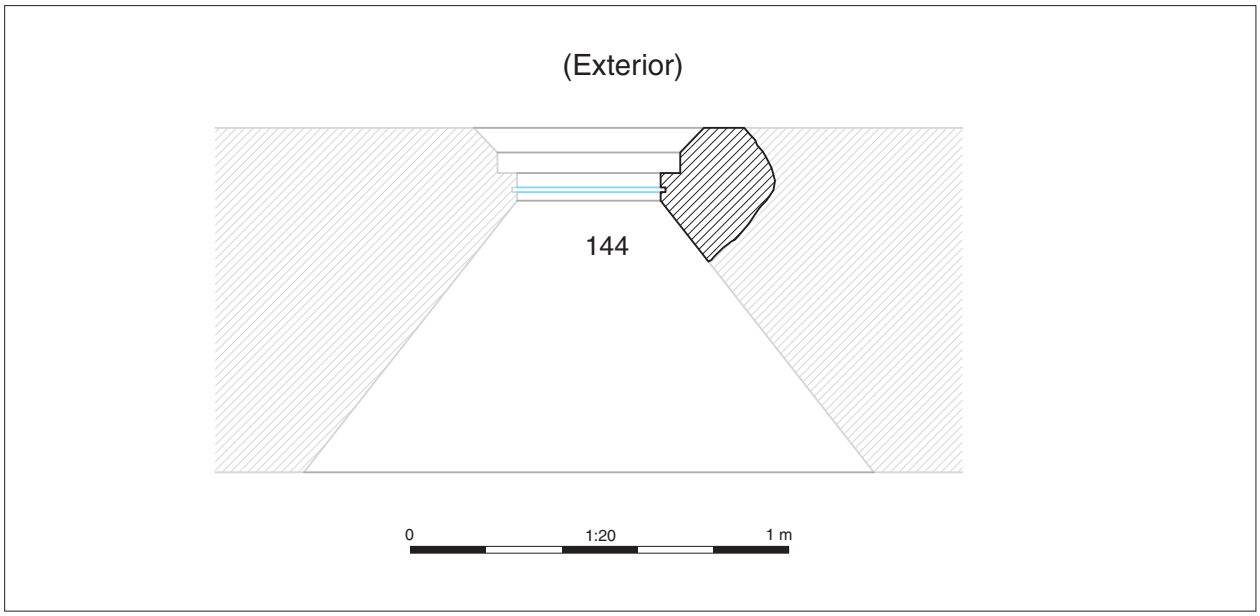

Fig. B.6.11 (BC III, c) Plan of window used in the church?.

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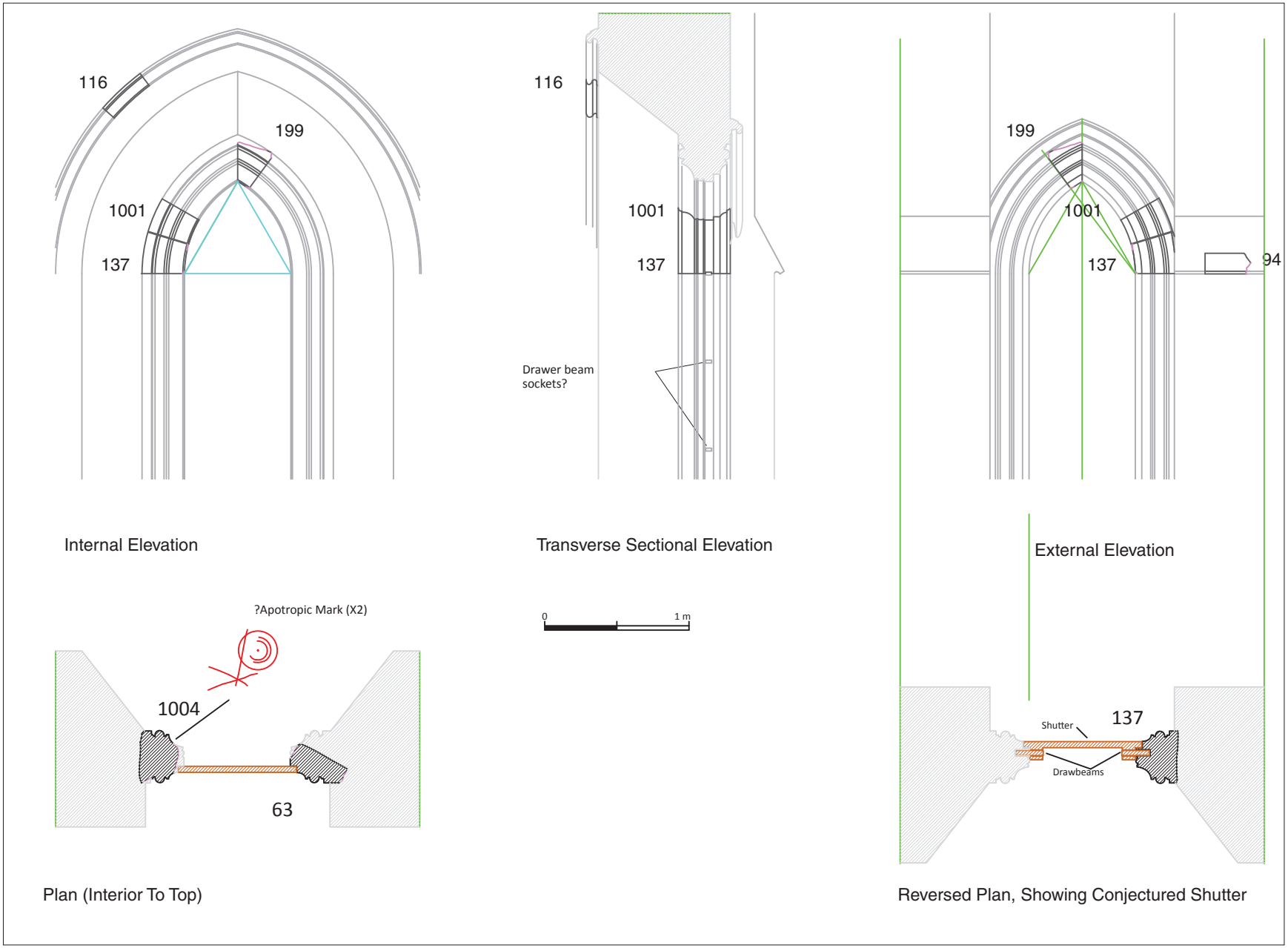

Fig. B.6.12 (BC IV, a) Details of massive arrayed lancets.

Fig. B.6.13 (BC IV, a) diagonal marks left by boaster chisels on the bed.

Fig. B.6.14 (BC IV, a) Exterior showing differentials in tooling and weathering.

0 20cm

Fig. B.6.15 Jamb stone with ?apotropic mark

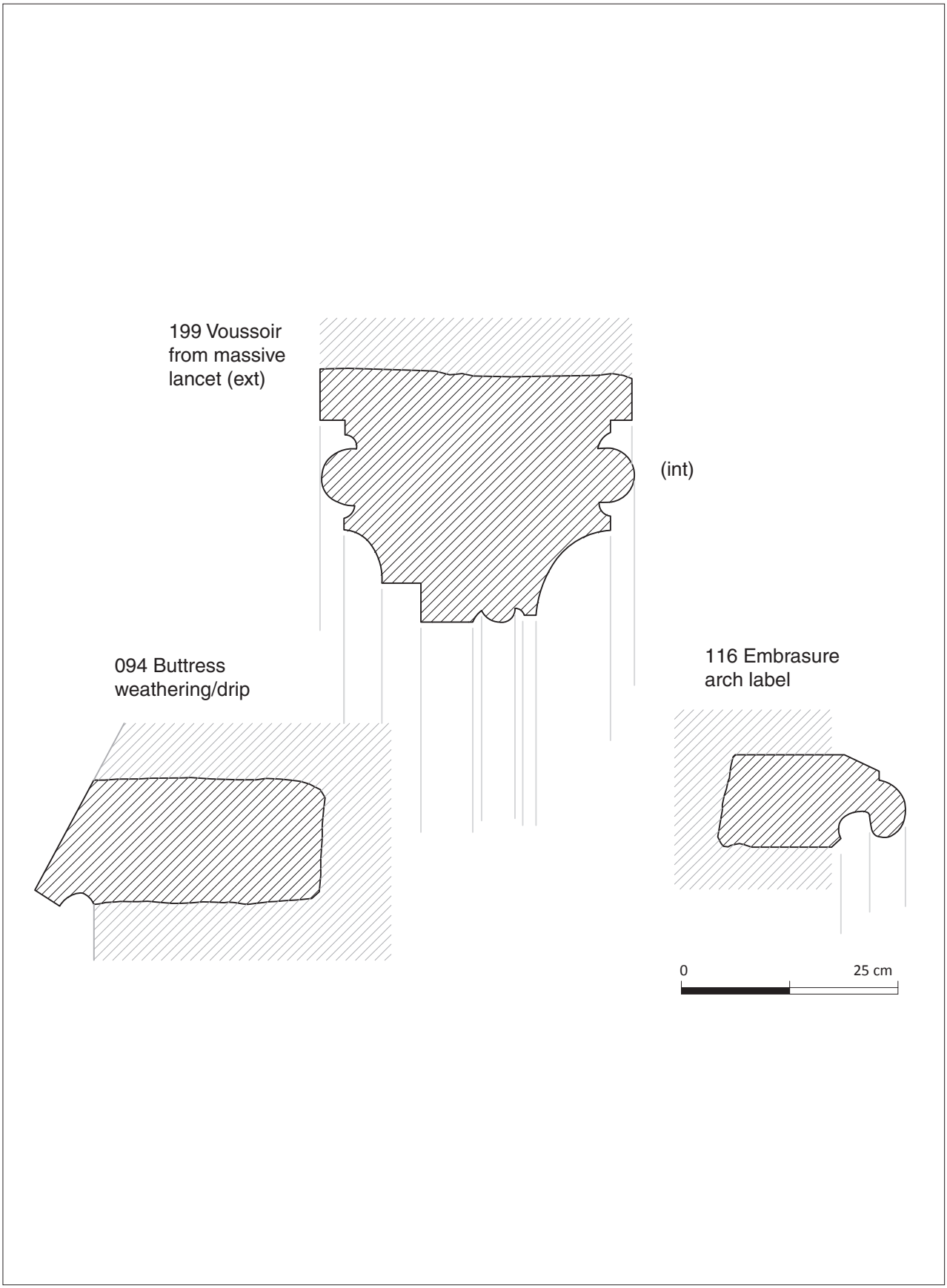

Fig. B.6.16 (BC IV) Details of Mouldings associated with the ?1254-66 Lancets

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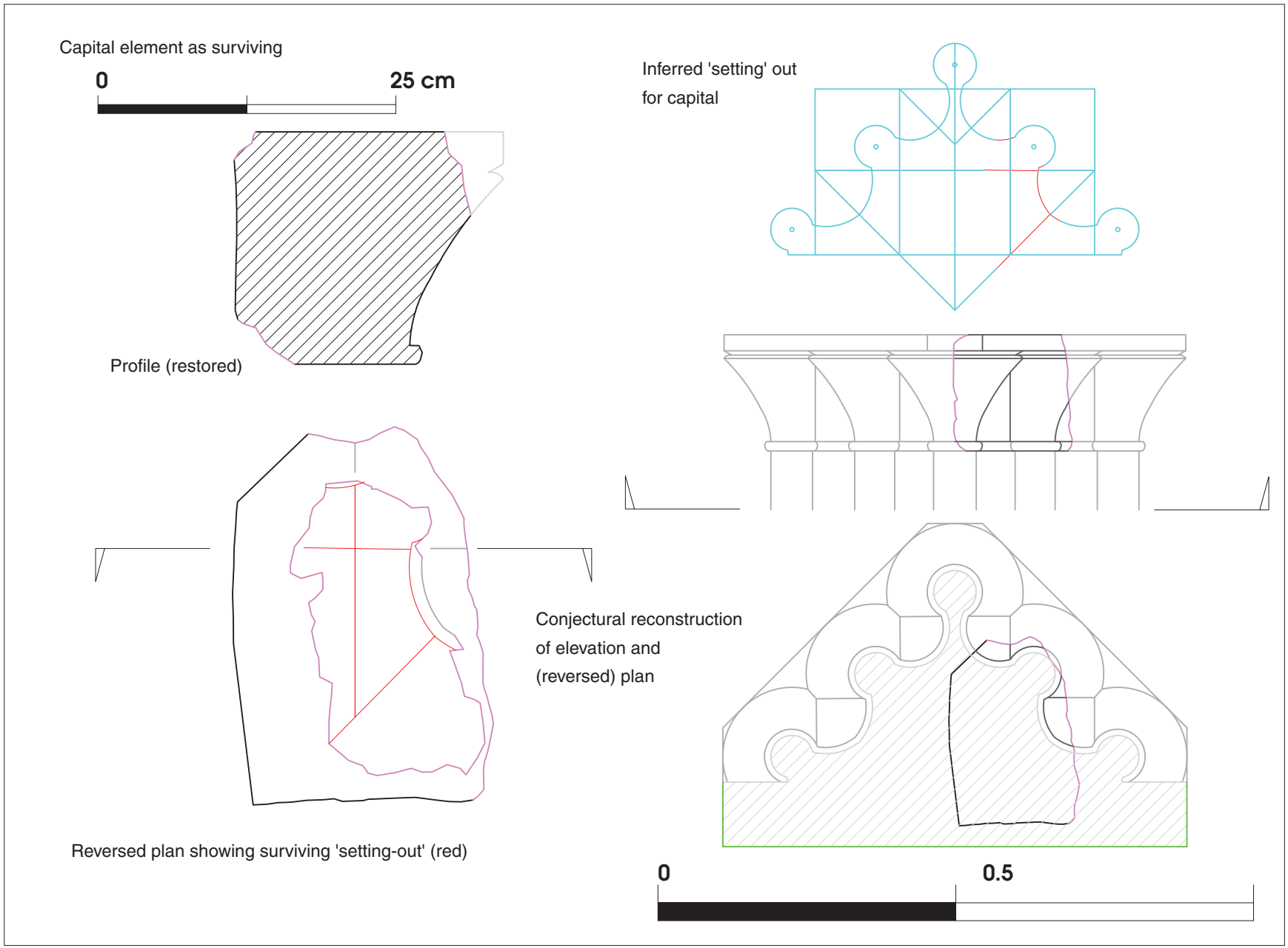

Fig. B.6.17 (BC V) Arcade Respond Capital (1270)

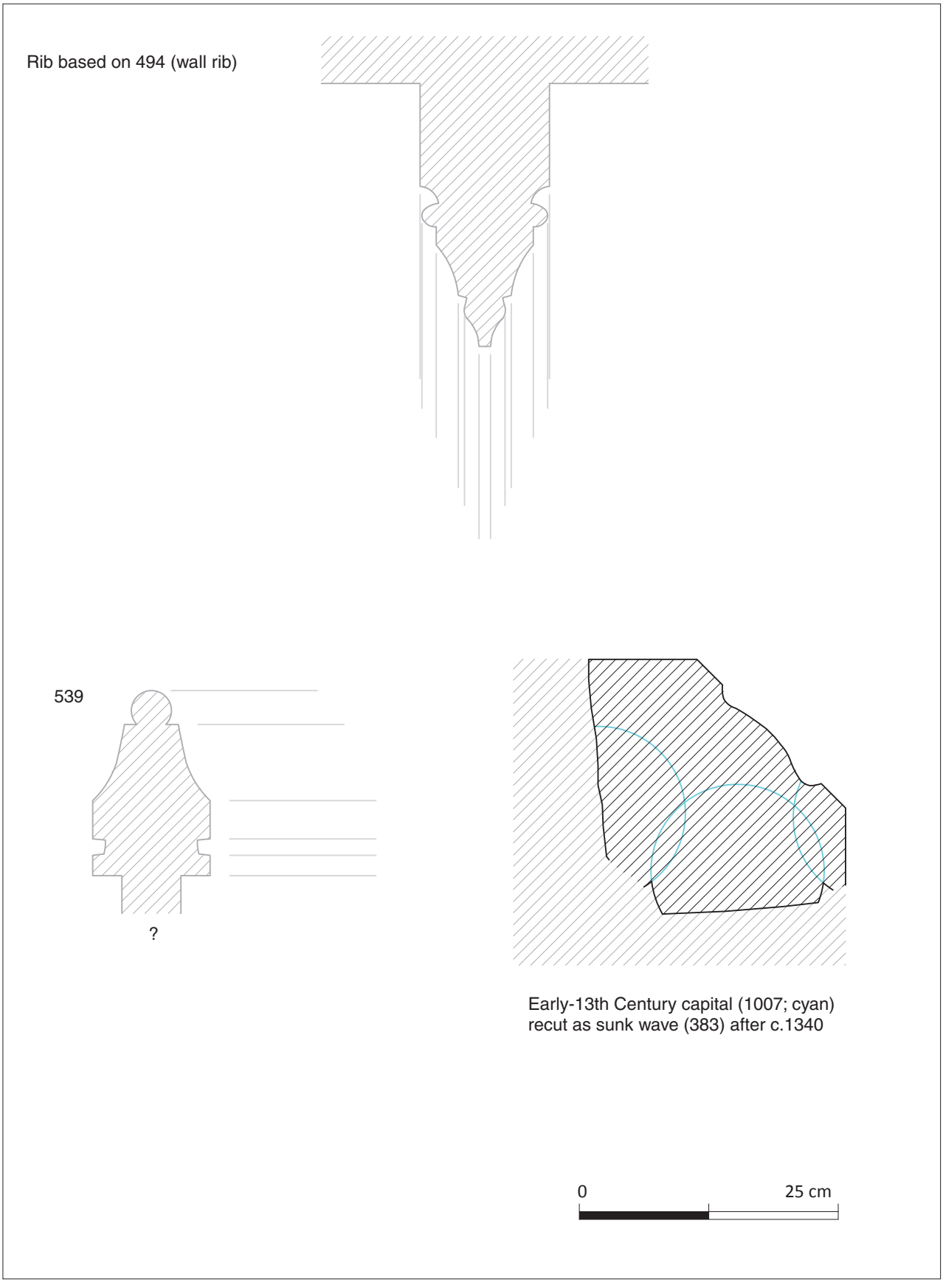

Fig. B.6.18 (BC V-VI) Rib, tracery and sunk-wave mouldings

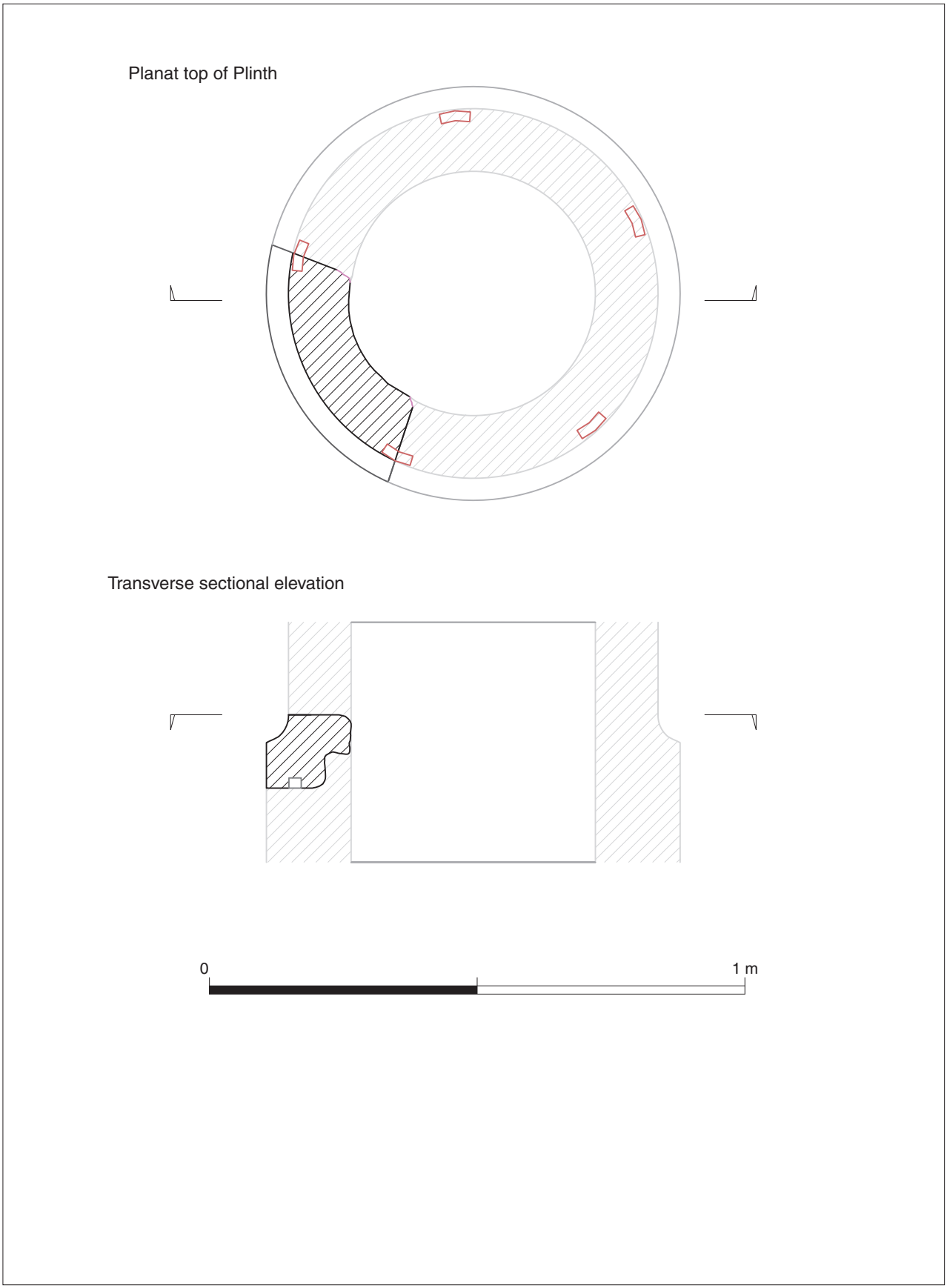

Fig. B.6.19 (BC V, e) Base of Chimney

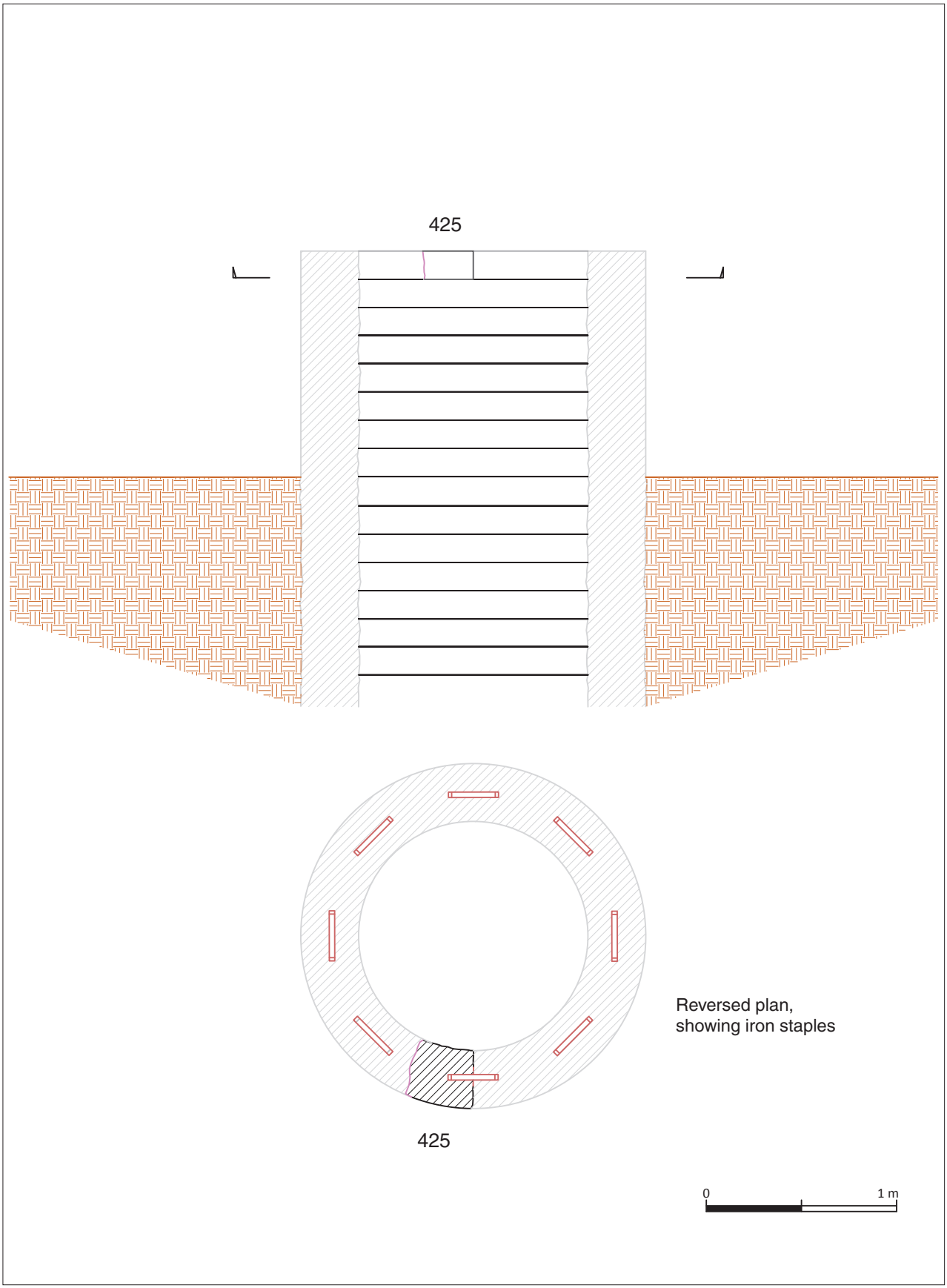

Fig. B.6.20 (BC VI, b) Well head (plan)

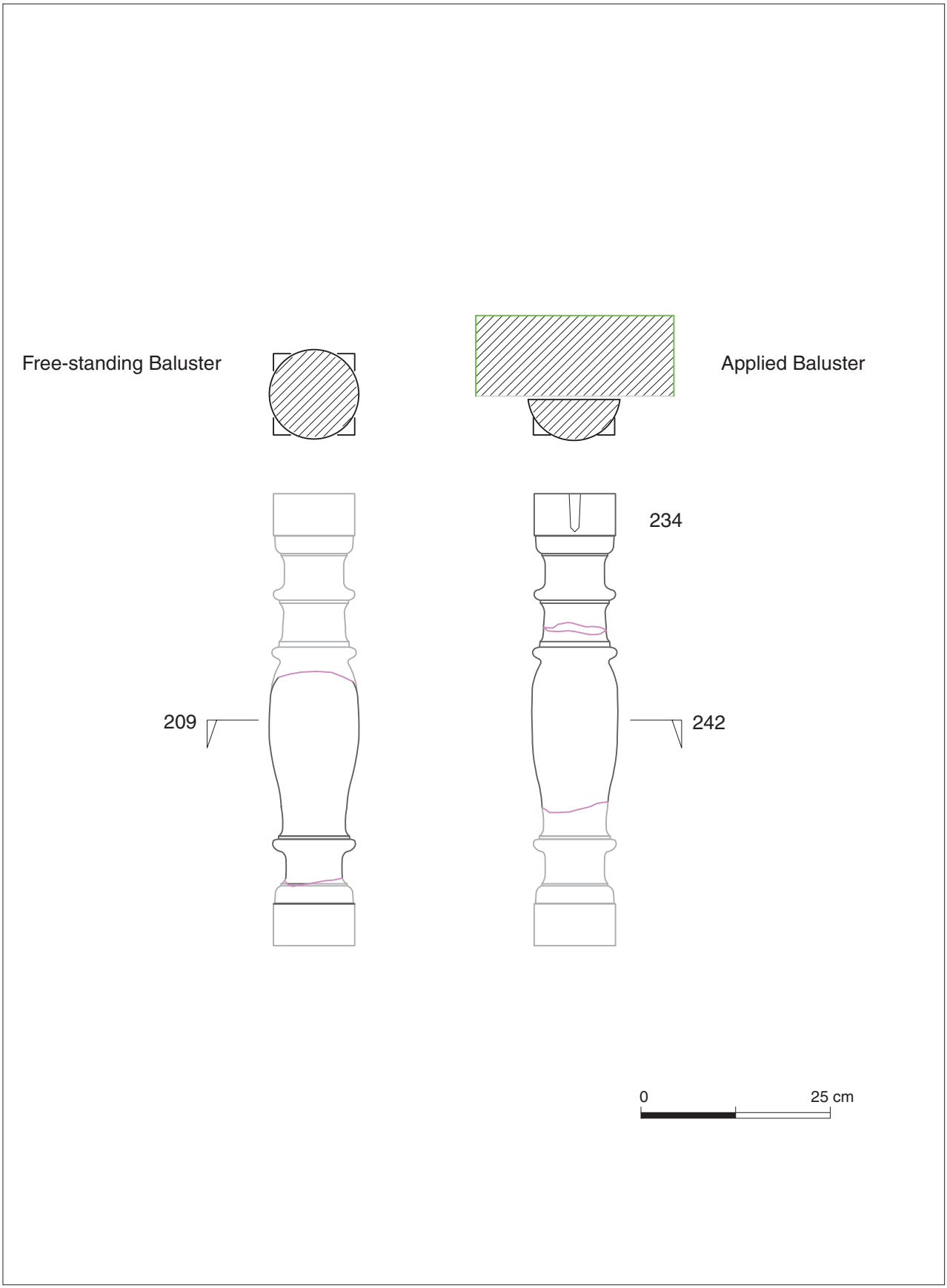

Fig. B.6.21 (BC VII, a) Fre and applied balusters from tomb *c.*1700

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Fig. B.6.22 (BC VII, b) Fragment of an epitath

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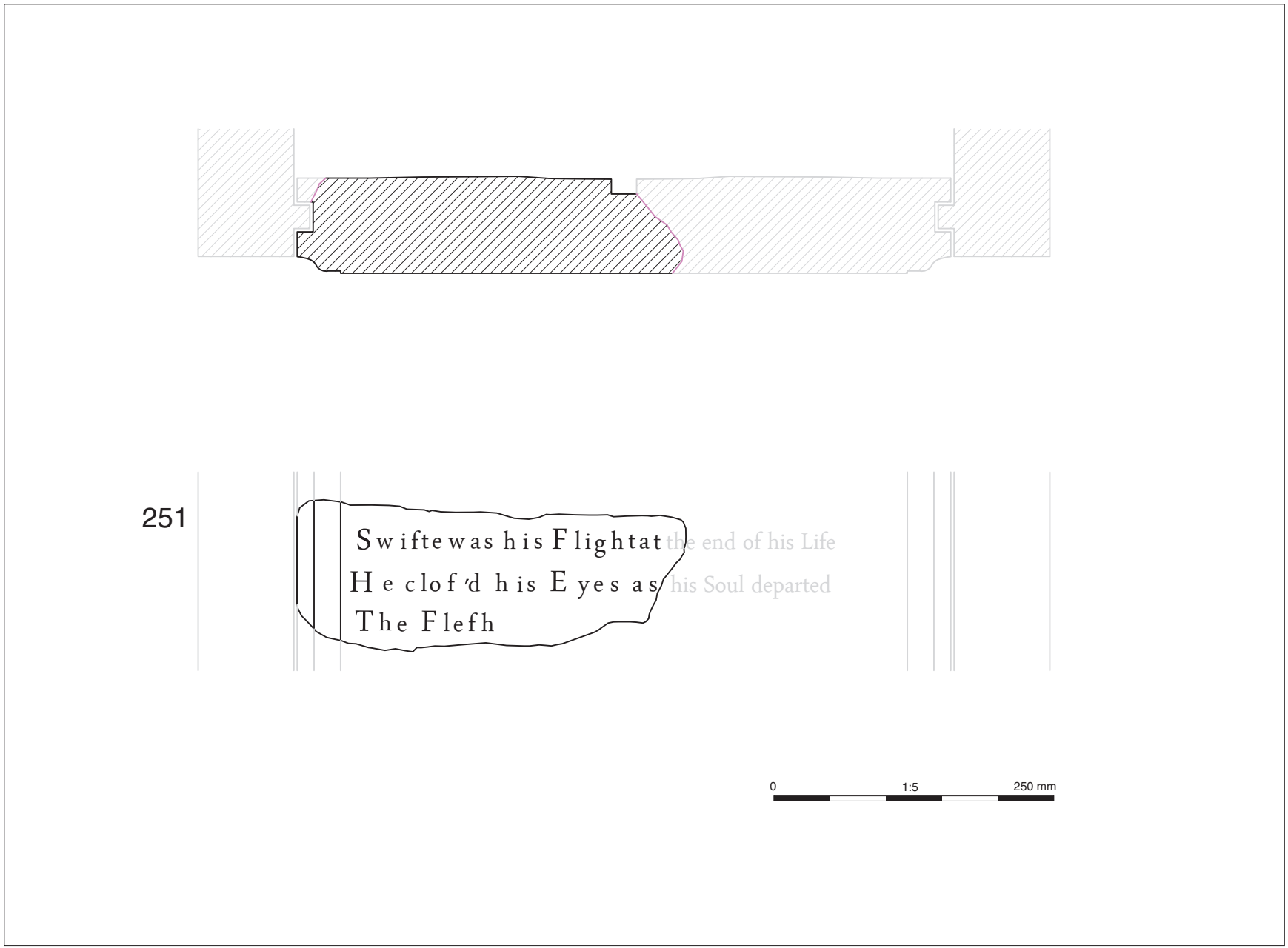

Fig. B.6.23 (BC VII, b) Fragment of an epitath

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