Post-Excavation Assessment

Medieval to modern remains at Newmarket Road Barnwell, Cambridge

Post-Excavation Assessment and Updated Project Design

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Client: Goose Architects on behalf of Blues Property Urban Ltd

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Medieval to modern remains at Newmarket Road, Barnwell, Cambridge

Post-excavation Assessment and Updated Project Design

By Rob Atkins BSocSc DipArch MCIfA

With contributions by Craig Cessford BA MA, Nina Crummy BA MA, Chris Faine BA MA MSc ACIfA, Carole Fletcher BA ACIfA, Rachel Fosberry HNC ACIfA, Sarah Percival BA MA MCIfA, Lexi Scard BSc, Ruth Shaffrey BA PhD MCIfA and Jemima Woolverton BA MA PCIfA

Editor: Rachel Clarke BA MCIfA

Illustrator: Charlotte Davies BA MPhil

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Prepared by:	Rob Atkins
Position:	Project Officer
Date:	July 2015
Checked by:	Aileen Connor
Position:	Senior Project Manager
Date:	July 2015
Signed:	.....

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Oxford Archaeology East,
15 Trafalgar Way,
Bar Hill,
Cambridge,
CB23 8SQ

t: 01223 850500
f: 01223 850599
e: oaeast@thehumanjourney.net
w: http://thehumanjourney.net/oaeast

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Summary

Archaeological excavation by Oxford Archaeology East extending over 260.31m² was conducted at 132-136 Newmarket Rd, Barnwell, Cambridge (TL 4629 5886) between 23rd September and 27th October 2014 in advance of 13 residential flats with four commercial spaces at ground floor. This work followed on from a trench evaluation within the site (Barlow and Thompson 2014).

Deeply stratified remains up to 1m deep was uncovered across the site. The earliest features dated from when the site was part of the lay settlement of Barnwell Priory. At least three phases of medieval activity was found with firstly, possible fragments of enclosure ditches which date from c.AD 1200. Secondly, part of a post hole building with a hearth was found fronting onto Newmarket Road and behind this building were contemporary pits. In the late medieval period part of large building was uncovered, comprising a robbed wall, fragmentary remains of two clay floors abutting up to it on its eastern and western side. Within/cutting the floors were a hearth and a possible stone latrine feature with the results of a bulk environmental from its backfill supporting the latter interpretation. Further pits were contemporary with this building and some of these contained large quantities of charred plant remains.

After Dissolution there was a reduction in the quantity of features. The western half of the plot was part of the former Barnwell Priory Estate with possibly a farm house directly to the west of the excavation area. Two well-made clunch walled features found in this part of the plot comprising a detached latrine complex which went out of use by the early 17th century, and a well backfilled in the later 18th century. A small post hole backplot structure and a ditch also belonged to this phase. The eastern half was within part of a plot owned by Benet College. In this area was a substantial quarry pit which had been backfilled with a notable assemblage of artefacts including building demolition waste dating to c.AD 1600.

In the post AD 1800 period there was a dramatic increase in the quantity of features found. Remains of five early 19th century buildings were uncovered, two of which had dual use, comprising The Jolly Butchers which was both a butchers and a pub, and the other being both a grocers and a baker. Three domestic buildings were also found, with one surviving in good condition with brick floors, an internal chimney and an outside brick paved courtyard. Three pits dating to the 1820's, probably in the courtyard of the Jolly Butchers, contained notable assemblages especially clay pipe remains which these have been classified as regionally important.

All five buildings seemed to have survived, albeit with some changes, to c.1969 when all were demolished for the widening of Newmarket Road. An industrial building was then constructed within the site.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 An archaeological excavation was conducted at 132-136 Newmarket Rd, Barnwell, Cambridge (TL 4629 5886: Fig. 1), which this took place after an archaeological evaluation (Barlow and Thompson 2014). The excavation was undertaken in accordance with a Written Scheme of Investigation prepared by OA East (Atkins 2014).

1.1.2 The development proposal comprises the construction of residential development for 13 apartments and four commercial units at ground floor. The excavation area was 260.31m².

1.1.3 This archaeological excavation was undertaken in accordance with a Brief issued by Andy Thomas of Cambridgeshire County Council (Thomas 2014) as part of Planning Application 13/1139/FUL, supplemented by a Specification prepared by OA East (Atkins 2014).

1.1.4 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *National Planning Policy Framework* (Department for Communities and Local Government March 2012). This assessment has been conducted in accordance with the principles identified in English Heritage's guidance documents *Management of Research Projects in the Historic Environment,* specifically *The MoRPHE Project Manager's Guide* (2006) and *PPN3 Archaeological Excavation* (2008).

1.1.5 The site had been vacant some time before the present development. There was a single 1970s building in the central western part of the site and yards elsewhere. This building was still upstanding when the archaeological evaluation took place in July 2014. This evaluation provided for a *c*.5% sample of the area to be subject to development and focused on the accessible areas of the site. Three trial trenches up to 7.5m long and 1.6m wide and two test pits 1m x1m in size were excavated (Barlow and Thompson 2014 Section 6.1).

1.1.6 A draft evaluation report has been sent to Cambridgeshire County Council for approval (Barlow and Thompson 2014). This report states in its summary that, "during the medieval (12th – 14th century) period the site was occupied by at least one property fronting Newmarket Road with pit digging taking place to the rear. A probable hearth was exposed close to the northern site boundary and pit digging was evident to the south, away from the road. Occupation may well have continued into the transitional period (mid 15th – early 16th century) as pit digging was still taking place in the same area. Thereafter, following the fortunes of the Priory, the site appears to have been abandoned until the construction of brick structures in the 19th century. After several phases of demolition and redevelopment, particularly in the 20th century, little of these 19th century buildings survive. The only building currently standing on the site is a small 20th century workshop."

1.1.7 The subsequent Brief sent by CCC reported that, "contrary to the evaluation report, evidence, evidence for 16th -19th century activity is also likely to survive in the area, with stratified deposits seen in section but machine excavated with no finds retrieval" (Thomas 2014, section 1.3).

1.1.8 The Specification for excavation stated, "It should be noted that the site is in the heart of the medieval to modern settlement. This postulated abandonment from the mid 16th

to the 19th century is at odds with the 17th -20th century documentary records of the former Bird Bolt pub adjacent and all three excavations to the east of this site." (Atkins 2014).

1.1.9 After the evaluation, in accordance instructions, the 1970s building within the site was demolished, but the below ground level foundations were left *in situ.* Due to the importance of the suspected archaeological remains, the Brief stipulated that the whole site should be archaeologically excavated. Before archaeological work commenced a Health and Safety Method Statement was conducted dated 22/9/14 (Connor 2014). The excavation commenced on the 23rd September 2014 and continued to the 27th October.

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

1.2 Geology and Topography

1.2.1 The site is located on drift geology comprising 3rd Terrace Gravels (BGS 1981). The underlying Solid geology consists of Lower Chalk. Terrace gravels were encountered throughout the excavation area.

1.2.2 The River Cam flows approximately 300m to the north of the development area at a height of *c*.4.9mOD. From the river to the site, there is a gradual rise in ground level to 13.00m at the Newmarket Road frontage.

1.3 Archaeological and historical background

Earlier Prehistoric-Late Bronze Age

1.3.1 The Cambridgeshire Historic Environment Record (CHER) lists a number of prehistoric finds in the vicinity of the proposed development area, although none from the site itself (Fig. 1). They comprise three Palaeolithic abraded hand axes, elephant, hippopotamus and other animal bones recovered by a gravel digger in 1862, 200m to the west of the development area. These remains are in the Sedgwick Museum (CHER 04531). An excavation 300m to the north-west found the area had been exploited between the Mesolithic and Bronze Age (CHER ECB 3402; Atkins 2012a). Here, a background scatter of Mesolithic flint was recovered as well as at least four Early Neolithic pits with evidence of flintworking. Three residual Early Neolithic flints including a core were found within an excavation 200m to the east but no contemporary features (CHER ECB 3873; Atkins 2013).

1.3.2 An Early Bronze Age type "A" Aberconwy Beaker was found 350m to the north-west (CHER 04623; Fox 1923, 25 and 27). A background scatter of worked flint was recovered but no contemporary features were identified at two recent excavations *c*.50m and *c*.100m to the east respectively (Atkins forthcoming; CHER ECB 3733; Newman 2013). An undated prehistoric object was recovered directly to the south (CHER 04625).

1.3.3 Overall, the gravel terraces of the River Cam are thought to have been particularly favoured for earlier prehistoric settlement (Fox 1923), although in heavily built up areas the evidence for this period is often obscured or destroyed.

Late Bronze Age- Iron Age

1.3.4 A Late Bronze Age/Early Iron Age crouched inhumation C14 dated to 800-546 calBC (95.4% probability) Suerc- 53420 (GU34302) was found in an excavation *c*.50m to the east (Atkins forthcoming). Nearby were small parts of further human remains found in Victorian features. Undated probable prehistoric field systems were also found in this

excavation. It is possible these ephemeral field system remains were associated with part of a Mid to Late Iron Age settlement found 200m to the east at Coldhams Lane (Atkins 2013). Additionally two tree throws in the CAU's excavation 100m to the east of the site were tentatively dated as later prehistoric in date (Newman 2013). Possibly relevant was a copper Ptolemaic coin dated 323-285BC found in a Barnwell gravel pit, but its location recorded vaguely in Fox 1923, 86 and map 3 and also the HER which places it at TL 46 58 (CHER 04577; not illustrated).

1.3.5 An excavation 300m to the north-west suggested that ploughed fields were located close to the riverside possibly from the Late Iron Age onwards (Atkins 2012a).

Roman

1.3.6 Excavation *c*.100m to the east of the current site found a scatter of 12 Roman pottery sherds but this is likely to have been the result of manuring (Newman 2013). Evidence of Roman arable farming was found 300m to the north-west represented by a ploughshare, a harness fitting, and a scatter of pottery and coins within a colluvium layer (Atkins 2012a). The Roman town of Cambridge (*Duroliponte*), lies *c*.2.5km to the west of the site.

Saxon

1.3.7 Two Early to Mid Saxon ditches, a residual cruciform brooch and clay loom weight (Early/Mid Saxon) were found in the CAU excavations 100m to the east (Newman 2013) and this has been interpreted as further evidence for am Anglo-Saxon settlement and/or cemetery in the near vicinity. No definite Saxon artefacts have been found within 1km of the site, although Sir Cyril Fox notes stray Anglo-Saxon find(s) from Barnwell now housed in the Ashmolean Museum, but does not record what it was (were) or its exact location (1923, 245). In his map of the area (map G), Fox recorded a possible Saxon settlement in Barnwell which may suggest the artefact(s) could have been recovered from this location.

1.3.8 No Late Saxon remains have been found within the area of the site.

Medieval to modern

1.3.9 The site lies within the former lay settlement of medieval Barnwell Priory, with the priory (CHER 04653) located on the other side of Newmarket Rd to the north of the proposed development area. Barnwell Priory was founded by Augustinian Canons in 1092 at a site near Cambridge Castle and moved to its present site in 1112. The site was within the fields of Cambridge located *c*.1km to the east of the historic core of the City of Cambridge. The subject site is located to the south of a medieval road that led from Cambridge to Newmarket and was called Barnwell Cawsey from at least 1574 (Reaney 1973, 46).

Documentary research by Jemima Woolverton and Rob Atkins

1.3.10 This documentary research primarily comprised a visit to the Cambridgeshire Records Office and the use of 19th century maps. These maps are referred to but none have been included as figures for this PXA.

***c*.AD 1800-1840**

1.3.11 The earliest map evidence for the site was the *c*.1807/1811 Enclosure Awards map (CRO Q/RDc16; not illustrated). The development site was within the eastern half of Plot 29 and the western half/most of Plot 30 (Table 1).

1.3.12 Plot 29 was part of the Barnwell Priory estate owned by the Panton family prior to enclosure (Danckwerts 1980: 218). The 1813 map shows plot 29 as empty with no buildings within it, and it was called Lucerne Close on this map, although the reason for this is not yet known. Some of Panton lands were put up for sale on the 9th November 1809, but Thomas Panton II died during the transaction, meaning that his successors Peter Lord Gwydir, his wife the Right Honourable Priscilla Baroness Willoughby of Eresby, and her son the Right Honourable Peter Robert Drummond Burrell and his wife completed the transaction (Danckwerts 1980: 218 including fig. 1; CUL MS Doc. 127).

1.3.13 Plot 30 was owned by Benet College. The enclosure maps show two separate buildings fronting Newmarket Road (and one at the rear). The building on western side of Plot 30 was within the development area, but the eastern side was the Bird Bolt Public House and premises and these properties seemed to be? all outside the excavation area. At enclosure Abbey Road/Street had not yet been built.

1.3.14 The roughly contemporary *c*.1810 1" Ordnance Survey map shows a very different arrangement with a seemingly large courtyard structure fronting on Newmarket Road partly within the development area and presumably including the Bird Bolt Inn complex, but extends as a sub-square courtyard. The question is whether this map was inaccurate due its small scale, as this arrangement is very different to the earlier enclosure and the later maps of the site. The Bird Bolt is known to existed from at least 1601 (many documentary records survive dating from this to the early 19th century, but these have not yet been studied).

1.3.15 After Enclosure, the landownership was slightly different (see Table 1). The 1813 map of St Andrew the Less parish drawn up by Jesus College marks the Rev'd Jas Geldart as the new owner of Plot 29 which records the plot as Lucerne Close (see Table 1). This appears to refer to the great land owner Reverend James (or Jas) DD Geldart from Kirkdeighton in Yorkshire, since he is also listed as a freeholder in Cambridge in 1831 (UK Bill Books and Electoral Registers, 1583-1893). The fact he is still listed as a landowner in 1831 may suggest that he still owned this land, although this reference may refer to other land in Cambridge. Plot 30 was still owned by Benet College.

Plot on 1807/11	Owner on 1807/11	Owner on 1813	Description on 1807/11	Visual description on 1807/11	1888 map
30	Benet College	Benet College	Bird and Bolt Public House and Premises.	Two buildings at front, one at back	Bakers and Grocers; Malthouse; Buildings fronting east side of Judd's Passage
29	The person entitled to the Estate of the late T Panton	Rev'd Jas Geldart. Lucerne Close	Lucerne Close	No buildings	Jolly Butchers (PH); Buildings fronting both sides of Abbey Street.

Table 1: *The site's 19th century owners*

1.3.16 The so called 1832 parish map of St Andrew the Less (but pre-dates the 1830 Baker map) (CRO 124P4) has Abbey Road/Street for the first time and this is aligned perpendicular to Newmarket Road and formed the western boundary of the present development area. On this map there were three buildings all seeming detached within the site. The two buildings fronting Newmarket Road are likely to have been those

recorded on the enclosure map. There is a single small structure on the southern side of the development site fronting Abbey Road/Street.

1.3.17 The Baker's 1830 map has the three properties at least partly in the same location as the earlier parish map, as well as two further buildings in completely new areas of the site. There was a new building fronting Abbey Street on the southern side of the site. The only change to the existing three earlier buildings was that the eastern building on Newmarket Road had been either rebuilt or had been expanded to become 'L' shape with the latter clearly fronting a passage way (which was recorded on latter maps as Judd's Passage. Abutting directly to the south of this along the passage was a new 'L' shaped building and formed a courtyard feature by abutting a long north to south malthouse building directly to the east of the development area (this arrangement is clearly shown on the later 1888 1st Edition OS map). An open carriageway entranceway from Newmarket Road led into this courtyard.

1840 – 1900

1.3.18 In the RR Rowe Sewerage Plan of 1840, buildings are clearly drawn on our plan, including a passageway later known as Judd/Judd's/Judge Passage (CB4/19/1/1-12). The 1858 Sewage Plan calls this "Judd's Passage". The large expansion of population within Barnwell in this period meant that by 1858 the development area was within part of a new parish called Holy Trinity.

1.3.19 In 1873 the Mendicity House owned property on the south side of the development area fronting Abbey Street was sold. It seems to have been part of a large landholding of Octavius Parker, the grandson of Thomas Parker, who had owned Mendicity House from 1865, died with debts so considerable that all his property was sold to pay his creditors (Keynes 1947, 140). This property and land part of Judd's Passage were lot 7 of this sale. Also in this sale was Mendicity House owned property within the excavation area *c*.50m to the east located in and around Leeke Street which were lots 8-12 of this sale (Woolverton in Atkins forthcoming; see below).

1.3.20 The 1st Edition OS map (1888 1:500) shows the site clearly and in detail (in contrast to the small scale Baker map and the less detailed sewage maps). There were remains of five principal buildings within the site. The building located at the corner of Abbey Street/Newmarket Road up to Judd's Passage is recorded on a map as a pub for the first time. There is a small wooden structure abutting up to it on its south-eastern side along the passage and a fence line along this passage further to the south blocking of the open area to the south of the pub – presumably it would have been part of its courtyard. The former Mendicity house property may have been maintained or a new building replaced it. There is a large wooden structure abutting it to the east, presumably a shed and then a very small brick structure abutting up to the wooden structure and Judd's Passage. Directly to the south of it were two terrace houses. On the eastern side of Judd's Passage and Newmarket Road the 'L' shaped building has not changed from the Baker map, nor has the other attached 'L' shaped building to the south of it. In the courtyard three small sheds are recorded – the detailed maps suggests two were presumably brick and one was wooden.

Occupation

1.3.21 Finding details about these properties on the censuses proved challenging, since the previous OAE Harvest Way site was situated in the St Andrew the Less parish and the numbering stopped there. Our site is situated in St Andrew the Great: Holy Trinity parish, and is located next to the numbering for Abbey Street and Occupation Row on the censuses. Since the numbering for these properties and the name of the public

house marked on the 1888 First Edition Ordnance Survey map was previously unknown, the ancient Bird Bolt and Five Bells pubs on either side of these properties have been useful landmarks. Our site is listed on the 1891 census, so the parish boundaries must have moved by this point.

Bird Bolt public house, 61 Newmarket Road

1.3.22 Although outside our site, the Bird Bolt pub is included here because its rise and fall is related to our site. In the 1841 census, a William Carter, publican, and his wife Ann are listed as living on Sun Street, and in 1851 an Ann Carter, publican, is listed as living there. By 1861, George Fletcher, milkman and publican, was living at the Bird Bolt, 61 Newmarket Road. However, this seems to be the end of the Bird Bolt's function as a pub at this time, since in the 1871 census, a Walter Hawkes, cattle dealer was living here with his family, followed by Thomas Wilbye, horse dealer in the 1881 census, and William Pink, horse dealer, and his brother a horse slaughterer were living here at the time of the 1891 census. Presumably the Bird Bolt was no longer functioning as a pub in any capacity by this point, and the land and outbuildings may have been used for housing livestock.

Bakers and grocers, 60 Newmarket Road

1.3.23 60 Newmarket Road seems to have had a long tradition of being a bakers and grocers, possibly connected to the malthouse next door. At the time of the 1841 census, an Edwin Leawell lived on Sun Street, followed by a William Ward, grocer and baker at the time of the 1851 census. Ann Webb was the occupant at the time of the 1861 census, followed by William Daffin, baker, listed in 1871. However, a William Ward, baker, was listed again as living at the property at the time of the 1881 (age 31) and 1891 censuses – it is plausible that this William Ward is the son of the William Ward listed in the 1851 census, who had a two year old son, William. We can conjecture that William (junior) went elsewhere to learn his trade, and then returned to run the family bakery in his thirties.

Judd's Passage

1.3.24 Judd/Judd's/Judge Passage is first drawn on the Baker 1830 map, and first named on the RR Rowe 1858 map. Seven properties are itemised on the 1851 census at 'Judge Passage', occupied mostly by single women, and their (mostly male!) single lodgers. The women are listed as tailoresses, dressmakers, glove makers, and laundresses, although they may have had other occupations in 'bawdy Barnwell'! The 1841 census also lists dressmakers living on Sun Street, although since these are not attributed to Judd's Passage, we cannot know if these references refer to these properties. The 1861 census lists eleven properties in 'Judds Passage', only three of which were occupied, by a John Pettit, collier (auctioneer), Robert Rayser, hawker, and his family, and someone called Victory. There is no record of anyone living in Judd's Passage in the 1871 census, but the properties clearly still existed, since in 1881 five families lived at numbers 1-5 'Judd Passage'. Five properties are drawn on the 1885 First Edition Ordnance Survey map, but no-one is listed as living there in the 1891 census.

Jolly Butchers, 58-59 Newmarket Road

1.3.25 The property at 58 and 59 Newmarket Road had a long history of use as a butchers and public house. In the 1841 census the butcher William Wheaton, was resident, and in 1851 it was occupied by the butcher Ann Martin. The pub/butchers was then occupied by John Dealtr(e)y for over thirty years, as recorded in the 1861 to 1891 censuses. The thirty-three year old is listed as a shoemaker and publican in 1861, in 1871 as a publican and butcher, but in 1881 and 1891 as solely a butcher (despite

being marked as a public house on the 1885 map). This suggests that while the property enjoyed brief success as a pub during the 1860s and 70s, like the Bird Bolt it too changed to alternative sources of income towards the end of the century. This may relate to the decline of Stourbridge Fair, providing less of a market for public houses.

1900-to present

1.3.26 The 1903 OS Edition map shows no seeming change within the development area. In the 3rd Edition 1927 map the only change is the pub courtyard is reduced in size with a new house fronting Abbey Street abutting up to the former Mendicity House on its northern side. There is no further change to the development area arrangement on the 1951 OS Edition map.

1.3.27 Photographs dated October 1959 show the two buildings (*Jolly Butchers* and a shop which was a bakers and grocers (its name presently unknown)) fronting Newmarket Road, but unfortunately both photographs record the buildings at obtuse angles (not illustrated). Both had been brick two storey buildings with the bakers and grocers having a shop frontage whereas the pub had a large door entranceway. These two buildings were demolished as part of the road widening in *c*.1969, but the area was still unbuilt on two years later (a photo recorded the site as derelict on 22nd June 1971; not illustrated) until a retail building was built later in the 1970s. This building in turn had later become vacant for several years until its demolishment for the present development.

Archaeological background

1.3.28 Four other excavations have recently occurred within/adjacent to medieval Barnwell (Atkins 2012a; 2013; forthcoming and Newman 2013). The nearest to the subject site was *c*.40m to the east and here there was settlement from c.AD 1200 and this continued into the modern (Atkins forthcoming). At least nine medieval plots, including parts of their frontages, were found with the former comprising post-built structures some containing clay floors. In some of the nine backplots there were significant quantities of intercutting pits, whilst other plots contained other features in different numbers such as clay-lined tanks and ovens. There were ten medieval wells recovered in the excavation.

1.3.29 A few plots seemed to have been amalgamated soon after the dissolution and possibly two or more buildings were found dating to the later 16th and 17th centuries. In one plot there was a possible inn with associated structures and the main inn building may have been partly burnt down in the 1731 fire of Barnwell. After this event in *c*. mid 18th century there was a new set of *c*.eight regularly spaced boundary plots demarked by brick walls within which clunch buildings fronted Newmarket road and backpits continued behind with varying quantity of features (mostly pits).

1.3.30 Some of the clunch buildings continued relatively untouched into the Victorian era whilst others were amended. From the 1820's the former backplots, as with the present development area, were infilled with small terrace houses fronting a new road (Leek Street and two passage ways. The former was where Mendicity property had been largely concentrated.

1.3.31 Work by the Cambridge University Archaeology Unit (CAU) at 180-190 Newmarket Road *c*.100m to the east found a similar concentration of occupation. The site was characterised by regular medieval property divisions, with differences in activities apparent in each plot; such as tanning (Newman 2013). Post-dissolution also saw an amalgamation of plots. The post-medieval and modern building remains did not survive so well but included many pits, a few containing college ceramics (King's, St. John's

and Trinity), with a notable primary assemblage from Trinity which has resulted in a separate publication in a national journal (Cessford 2014a).

1.3.32 Excavation *c*.200m to the east at Coldhams Lane found remains of up to four medieval plots and intense medieval to modern remains (Atkins 2013). Excavations 300m to the north-west found evidence for land reclamation along the edge of the river had started in the medieval period and soil continued to be deposited here for several hundred years (Atkins 2012a). A rich assemblage of artefacts was recovered from this soil including metal work and slag from smithing activities, pottery and building materials, possible originating from the priory and/or the lay settlement.

1.3.33 An evaluation 100m to south-west at 30 Occupation Road found medieval quarry pits suggesting the influence of the settlement and priory continued here (House 2013).

1.4 Acknowledgements

1.4.1 The author would like to thank Goose Architects who commissioned the work on behalf of Blues Property Urban Ltd. Anthill Construction machine excavated the site to a very high standard. The project was managed by Aileen Connor. Andy Thomas Senior Archaeologist at Cambridgeshire County Council monitored the excavation on behalf of the planning authority. Cambridgeshire Record Office are thanked for their help in the documentary research. This report was edited by Rachel Clarke and Aileen Connor.

1.4.2 I am grateful for specialist analysis from Craig Cessford, Nina Crummy, Chris Faine, Carole Fletcher, Rachel Fosberry, Sarah Percival, Lexi Scard and Jemima Wolverton. David Brown and James Fairbairn carried out the site survey and Charlotte Davies drew the illustrations. The site work was carried out by Rob Atkins, Zoë Clarke, Alex Day, Steve Graham, Rebecca Jarosz, Alba Moyona Alcántara, Lexi Scard and Chris Swain.

2 Project Scope

2.1.1 The Project will comply with the Written Scheme of Investigation (Atkins 2014).

2.1.2 The Newmarket Road excavation was within a 260.31m² and there were 458 contexts assigned. This compares to Harvest Way excavation c.30m to the east which was in an area of 2440.9m² and had *c*.3600 contexts assigned (Atkins forthcoming). The CAU excavation at Eastern Gate Hotel was directly *c*.100m east comprised an excavation in an 1867.5m² area which had *c*.2400 contexts assigned (Newman 2013). At Coldhams Lane excavation less than 200m to the east by OA East was within a 522.3m² area and 650 contexts assigned (Atkins 2013a; Atkins 2015). It is presently uncertain whether there will be a joint publication consisting of all these excavation area, but promising comments and suggestions were made after contact with CAU took place at the end of 2014.

2.1.3 In addition to these excavations a further small evaluation has taken place at Occupation Road c.50m to the west, but also within the lay settlement (House 2013). A small excavation at Brunswick directly to the west of Barnwell Priory and outside the lay settlement also had material from the settlement deposited as levelling up layers/manure scatters (Atkins 2012a). Other excavation work has taken place within the town itself (*e.g.* Cessford 2007), and these sites will be included within the analysis and reporting stage as comparative material.

2.1.4 The area around the Grand Arcade and presently at Barnwell lay settlement have been the only two major areas of excavations producing medieval to modern features within Cambridge. There is great scope for comparison between the adjacent four main Barnwell lay settlement excavations (collectively 0.509 ha) with the Grand Arcade site (0.7ha). The former four were within the eastern fields of Cambridge, which was directly controlled by this important priory. It is likely to have been influence by the town of Cambridge itself in the medieval period (such as trade), but in the post-medieval period, after the priory was Dissolved, the town's influence presumably increased greatly. In the early 19th century it became a suburb of Cambridge.

2.1.5 Documentary sources will be consulted and used to place the project in its historical context.

3 Interfaces, Communications and Project Review

3.1.1 The major excavation by the Cambridge Archaeological Unit to the west of Coldhams Lane/south of Newmarket Road is relevant to this project and every effort will be made to interface with the CAU with regard to publication of results.

3.1.2 Project communications will largely be by email/phone, it is not anticipated that general meetings to discuss findings will be needed, although the Project Manager/Project Officer will ensure all members of the team are kept informed of progress and results.

3.1.3 The project will be subject to internal OAE quality control processes throughout its life and will be subject to review/approval by CCCHET at key reporting stages i.e. Post-Excavation Assessment and Updated Project Design and Publication.

4 Original Research Aims and Objectives

4.1 Introduction

4.1.1 The original research objectives of the project were set out in the Brief (Thomas 2014) and Written Scheme of Investigation (Atkins 2014). The research objectives were written with reference to the regional research agenda and strategy for the eastern counties (Brown and Glazebrook (2000) updated by Medlycott (2011)). The WSI noted that the subject site lay close to the medieval priory of Barnwell, within the heart of its lay settlement, adjacent to open fields. The influences on the landscape here it thought were likely to be complex.

Relevant research themes for this site include:

- The impact of the development of towns on the surrounding countryside
- Trade and industry
- The influence of monasteries on urban and rural landscapes
- Continuity and change from medieval to post-medieval

The key research aims of this project relate to medieval crafts, trades and industry, rubbish disposal and the influence of religious houses (Barnwell Priory) on the landscape.

4.2 General esearch objectives

- *The origins, longevity and layout of individual properties;* there is evidence from the evaluation that it will be possible to identify individual properties and distinguish them from one another. There is high potential for finding contemporary dating evidence to use as a means of establishing a chronology for the site and individual properties.
- *Inter and intra site comparison between contemporary properties.* There is high potential to make comparisons across a wide range of properties on this and the other Barnwell lay settlement sites. On the adjacent site to east (Harvest Way) at least 7 individual properties were identified, a further 6 were found at Eastern Gate Hotel and two slightly further to the east at Coldhams Lane
- *The relationship of the properties to Barnwell priory and the settlement of Barnwell.* Artefacts and features that are likely to have associations with Barnwell Priory have been found on both the adjacent hotel site and Coldhams Lane site, it is likely therefore that there will be similar finds here. In addition it is likely that the influence of the priory on the fortunes of the settlement will be discernible by close analysis of the material remains.
- *Trades, crafts, industries*; there is a clear indication that evidence for specialist trades may be present as found on sites to the east.

4.3 Specific research questions

Specific questions that might be answered include:

- How many properties can be identified and what is their chronology?
- What trades and crafts were being carried out on the properties?
- Is there any evidence for social organisation, health, wealth and can differences be discerned?
- What was the relationship of the Barnwell settlement to Cambridge and to Barnwell

Priory?

- In what ways did that relationship change/develop after the Dissolution?
- What factors influenced the decline of Barnwell settlement and growth of the Cambridge suburb?
- To contribute to an understanding of medieval ceramics in the Cambridge area
- What was the extent and character of medieval and post-medieval activity in the area and how did it sit in the wider context of Barnwell Priory and the settlement identified in other archaeological work.
- To consider evidence for the reuse or disposal of architectural masonry from the Priory within the site.
- To consider the post-medieval development of the site and evidence for its economy and any associated industry
- To contribute to an understanding of post-medieval ceramics in the Cambridge area
- To consider the 18th and 19th century development of the site, its economy and industry, and the impact of the encroachment of dense housing with the expansion of Cambridge. The project manager is advised that documentary evidence for this period should be considered of particular importance
- Using the spectrum of environmental techniques appropriate for this aspect of investigation, an attempt will be made to model the landscape and its transformation brought about by the settlement's inhabitants and due to natural events. Particular interest will be on the presence of blocky charcoal in soil fills, which may be suggestive of the use of charcoal in craft production, hammerscale and other metalworking by-products, waterlogged fills and utilised buried soils.

5 Summary of Results

5.1 Introduction

5.1.1 The phasing of the site is based on both stratigraphic matrix (using computer software *stratify*) and datable finds. The phasing dates for this site is the same as the CAU site at Eastern Gate (Newman 2013) and the OA East site at Harvest Way (Atkins forthcoming). One broad period has been assigned for each of the medieval, post-medieval and modern time-periods. This is in contrast to the report on Coldhams Lane where the medieval, post-medieval and post- AD1800 phases have been sub-divided (Atkins 2015). For the full report stage for Newmarket Road it is extremely likely these three periods will also be sub-divided.

5.1.2 The periods are as follows:

Period 1 c.AD 1200-c.1538

Period 2 c.AD 1538-c.1800

Period 3 c.AD 1800-present

5.2 Period 1 (medieval) (Fig. 3)

5.2.1 The earliest Period 1 features within the site date from *c*. AD 1200 and the latest are Dissolution period. Several of the medieval features are intercutting and together with artefact dating the evidence suggests that there had been at least three medieval phases within the site (see below).

5.2.2 There was little to moderate truncation within the site for remains of this period, with some areas above average (where floor levels and a hearth have survived), whereas in others post-medieval and modern activity have removed earlier remains. The excavation uncovered a variety of deposits with *c*.29 medieval features (a wall, a latrine, post holes, ditches and pits), five floor surfaces and two layers.

Agricultural ditches?

5.2.3 Possibly the earliest remains on the site were two fragmentary north to south ditches (**245**/**253** and **263**/**335**/**349**/**366**) and a possible east to west ditch **249**. These may be part of former agricultural enclosures, or less likely plot boundaries. The three ditches were similar (orientation and size) to postulated early medieval agricultural enclosures found in excavations 50m to the east at Harvest Way (Atkins forthcoming). They were cut by later features which explains a few intrinsive later medieval pottery found.

Buildings 1 and 2

5.2.4 Up to two buildings were uncovered and have been labeled as Buildings 1 and 2. Building 1 comprised up to five/six post holes (**170**, **172**, **174**, **176** (not on plan), **212** and **214**) in the far north-west corner of the site over a 5m distance next to Newmarket Road. One later medieval pottery sherd was recovered from a single post hole. In addition to the excavation features, the evaluation uncovered a possible hearth (F1006) and undated post holes/stake holes in this location (not illustrated; Barlow and Thompson 2014).

5.2.5 Building 2 was in the middle of the site, was probably of late medieval date and was fairly extensive. It fronted Newmarket Road and extended more than 9m north to south and 8m east to west. The remains of a fragmentary possible north to south wall which had largely been robbed (**329**/**299**) was recorded. To the west of this dividing wall were fragmentary clay floors (231, 232 and 286), a hearth (**235**) and a possible clunch latrine

feature (**291**) which produced cess material including abundant fly pupae (see sample 7; Fosberry, Apendix C.2). Directly to the east of the former wall were further clay floor layers (230 and 300).

Pits and 'stray' post holes

5.2.6 Two post holes (**319** and **350**), *c.*5m apart were to the east and south-east of building 2 and may not relate to it. In the latter there is part of a knife blade (SF 97).

5.2.7 Sixteen pits were recorded across the excavation area (**168**, **210**, **252**, **260**, **271**, **273**, **315**, **317**, **337, 339, 361, 375, 379, 436, 443** and **445**), but were not concentrated in any area Four may have been former quarry pits (**252**, **375**, **379** and **443**), they were all truncated, but survived to between 0.72m deep to 0.92m deep. The others were relatively small and shallow. In addition the AS evaluation (Barlow and Thompson 2014) found four medieval pits consisting of a pit in Trench 1 (F1126), one in Trench 2 (F1034) and two in Trench 3 (F1028 and F1030).

Layers

5.2.8 Two medieval layers were also encountered (233 and 354) and may have been a buried soil. Further similar layers were found in the evaluation (Barlow and Thompson 2014).

5.3 Period 2 (c.AD 1538-c.AD 1800) (Fig. 4)

5.3.1 In the post-medieval period (*c.*AD 1538-1800), there was a reduction in the quantity of features found within the site. Map and documentary evidence recorded the western half of the site was part of a plot owned by the Panton family at Enclosure (Plot 29; See section 1.3.11). This landholdings was part of the former Barnwell Priory holdings which had been kept largely intact from Dissolution (Dankwerts 1980). The eastern side was owned by Benet College but when Benet College acquired this land is presently uncertain.

Western side (part of Plot 29)

5.3.2 Two well made clunch walled features were within the western side of the plot (a possible detached latrine complex (**450**) and a clunch lined well (**142**)). The former was sub-rectangular 3.6m in length by 1.5m wide and 1.8m deep. Artefacts recovered suggest this latrine went out of use by the early 17th century. Artefacts recovered included five worked stones (four whetstones and a quern), a few small finds including an object displaying evidence for bone working, a wire ring, three iron fittings and a few other objects and nails as well as moderate to large quantities of charred grain (samples 14 and 15; Fosberry, Apendix C.2) and 4.235kg of oyster shell (as well as a few cockle mussel and whelks). In contrast the clunch well was backfilled in the later 18th century with far fewer objects but included two whetstones and a brass padlock.

5.3.3 A possible post hole structure may have been within the centre of the plot. Three post holes (**194**, **219** and **229**), roughly equal distant apart, could have been part of a square or sub-rectangular structure. Other features in this backplot comprised a fragment of an east to west aligned ditch (**135**) within the centre of the plot and four pits (**247**, **382**, **399** and **453**). Pit **247** was cut by well **142** whilst there was an uncertain relationship between the latrine and pit **453** (not on plan). Pits **382** and **399** were of medium size and were located at in the southern part of the site.

Eastern side (part of plot 30)

5.3.4 Only two features were found in the eastern half of the site. This comprised a substantial sub-rounded probable quarry pit (**141**/**265**) which measured 3.32m in

diameter and was 2.42m deep with vertical sides. About half the pit was excavated and was backfilled with a notable assemblage of early post-medieval material. In particular the number of roofing tiles (3387 fragments weighing 298kg) was extensive (see Atkins, Appendix B.6), as well as a large quantity of metal and miscellaneous small finds including part of an ivory comb, a tuning peg from a stringed instrument, a bone counter, iron buckle, a padlock, copper pin and a tag, some tools (5 knives and a chisel), various fittings and many nails (See Crummy, Appendix B.1). There were also moderate to large assemblages of some other artefacts including brick and 213 fragments (16115kg) of slag, mostly from iron smithing. A small pit (**336**) lay directly to the east of this quarry pit.

Ground surface/cultivation layer(s)

5.3.5 Across both plots was a substantial possible ground surface or cultivation layer(s) (14, 23, 31, 50, 101, 113, 123, 139, 145 and 195). Within a few of these layers were some artefacts including a jetton.

5.4 Period 3 (c.A.D. 1800+) (Fig. 5)

5.4.1 In the post AD 1800 period there was a dramatic increase in the quantity of features within the site (Fig. 5). Some of these remains were foundations of buildings with three of these buildings probably dating from the 1820's. These comprised two fronting Newmarket Road (Jolly Butchers and a shop run as bakers and grocers) and one building in Abbey Street (run by the owners of Mendicity). Judd's Passage and buildings fronting onto it dated from at least 1830. A building to the south of the Mendicity building was built by 1830. All five buildings probably survived within the site until c.1969 when they were demolished as part of the Newmarket Road widening and associated works.

5.4.2 Whilst the remains of structural features dominated the Period 3 remains on site, a few early 19th century cut features such as pits were found, especially in the southern part of the site. These may relate to the Jolly Butchers or the Mendicity owned property. In contrast there were no late 19th century pits within the site. The different building plots are accessed individually:

Jolly Butchers

5.4.3 A ditch or pit (**178**) next to Newmarket Road was backfilled in the early 19th century and predates the Jolly Butchers. In the middle 19th century documentary and map evidence records that The Jolly Butchers had been run as a joint butchers/pub. The southern half of this building was within the excavation area and comprised a yellow brick wall (87) and later internal sub-rectangular brick wall cellar (88; also recorded in AS evaluation (F1124)) and an internal brick wall 90). The northern half was located under the present Newmarket Road.

5.4.4 In the pub's courtyard to the south lay several features within five metres of it. An external brick wall of a feature (89) is likely to be part of the structure recorded on the 1st OS Edition map. A fragment of an east to west brick wall (is possibly a boundary feature or even another unrecorded structure. Other features comprised an early 19th century pit (**179**) cut by a 19th century brick lined well (**182**) and five further pits (**148**, **150**, **196**, **225** and **240**). In this courtyard area were several late 19th/20th century drains (*e.g.* 70, 72 and 75), two manholes (**71** and **74**) and a concrete feature (**181**).

5.4.5 It is possible that features relating to this pub extended further to the south as notable clay pipe assemblages dating to *c.*1823-5 were found in three pits (**372**, **374** and **401**) - such deposits are normally assigned as 'inn or pub' type deposits.

Building owned by Mendicity

5.4.6 An early 19th century pit (**158**) lay on the far western side of this plot. After disuse a building was built by the 1820's over this pit. A north to south wall (108) was the only remains of this building surviving within the site. This building was sold in the 1870's and seems to have been maintained as there is no archaeological evidence it was demolished. Directly to the east of this building was well **185**, a sub-square pit (**192**) and a fragment of an east to west ditch (**12**). Two adjacent post holes (**187** and **189**) cut pit **192.** Further to the east was a small sub-rectangular brick outbuilding or latrine (8) and late 19th/20th century drains.

Two terrace houses fronting Abbey Street

5.4.7 Fragments of building(s) were recovered at the far southern area of the site. A stone north to south wall 324/326 was recorded over a 5m distance with a possible east to west return at the northern end. This could represent the building recorded here on the 1830 Baker map and it may have been divided (or replaced) as two terrace houses shown here on the 1st Edition OS map. A small brick/clunch walled cellar (312, 313, 330 and AS evaluation F1026) had an entrance way on its northern side and this structure abutted up to wall 324 on its eastern side. This building went out of use in the 20th century as it was cut by an east to west aligned fletton brick wall 331.

5.4.8 To the east of the wall 324/326 lay some features including of a fragment of a brick floor (332), three post holes (**388**, **452** and **457**) and four pits (**372**, **374**, **401** and **437**).

Bakers and grocers and Judd's Passage

5.4.9 In the eastern part of the site, the Jolly Butchers and the bakers and grocers were divided by a 1.5m wide north to south passageway called Judd's Passage. A gap between the two buildings was seemingly first recorded on the 1820's parish map, though it had been first demarked as a fixed pathway (linear lines) on the 1830 Baker map. This long-lived routeway was recorded in later maps and in the excavation it survived as successive 19th and 20th century layers/surfaces.

5.4.10 Two buildings fronted onto Judd's Passage on its eastern side. The 'L' shaped bakers and grocer building partly fronted Newmarket Road and then Judd's Passage. A second 'L' shaped building abutted the bakers and grocers building to its southern side on Judd's Passage and then went eastwards across the excavation area to form a courtyard. Both buildings were contemporary and this can be seen by a common brick walls (2 and 39). It is likely therefore that the Bakers and grocers building dates to this *c*.1830 period presumably replacing an earlier building recorded only fronting Newmarket Road on the *c*.1807 and 1811 maps.

5.4.11 The bakers and grocers building comprised at least three separate rooms. A single large room (walls 39, 100, 76/296, 119 and 34) possibly fronted onto Newmarket Road with wall 119 representing a bay window seemingly overlooking the courtyard to the south. Two small sub-rectangular rooms lay to the south adjacent to Judd's Passage. Both rooms had internal clay floors, with a dividing wall (22) within which a door way could be seen (context 3). In the southern room there was a small sub-rectangular foundation of a possible fireplace (46)?

'L' shaped building to south of bakers and grocers

5.4.12 In the excavation area this building had been internally divided up into four or five rooms. Three of these were located next to Judd's Passage with the northernmost room may have been a kitchen as a brick drain (130) led southwards from the shared (with Bakers and grocers) possible chimney stack (46). The middle room was defined by

walls (39, 97, 2 and 95) and had a brick floor (196) partly surviving. The southernmost room extended to the south beyond the excavation area, and it also had the remains of a brick pavement which had been heavily disturbed by a later drain. A fragment of an east to west aligned brick wall (55) may have been part of this building, which had originally extended to a malthouse complex to the east beyond the excavation area (this location is seemingly confirmed by a wall here on the 1st Edition OS map). Other fragmentary walls were uncovered including north to south wall foundation (56) and a wall foundation abutted up to wall 55 on its southern side. Directly to the south of wall 55 and west of wall 56 were a few *in situ* bricks (96), as well as some slightly displaced, suggesting this area had also been brick floored.

Courtyard area

5.4.13 Two early 19th century pits (**274** and **293**) may predate the *c*.1830 courtyard arrangement in this part of the site. The extreme eastern part of the Newmarket Road frontage was clear from buildings. It was at this location an arch was indicated on the 19th century 1st Edition OS map and was the only access point into the courtyard. A north to south drain (**121**) was aligned through this entranceway, presumably feeding into Newmarket Road itself. Directly to the south of this postulated arch were the fragments of 19th century sub-rectangular north to south aligned building (18/121 and wall found in the AS evaluation (F1124)). This may be the structure recorded on the 1st Edition OS map and was also shown on the 1954 OS map. Fragments of two walls (21 and 120) lay at the far north-eastern corner of the site, but it is uncertain what these remains were part of. The courtyard itself had been brick paved with engineering bricks (57) in the very late 19th/early 20th century. In the centre of the courtyard there was a north-east to south-west aligned brick drain (54/294).

5.4.14 A mid or late 20th century structure using fletton brick (42/52 and AS F1077) with two internal concrete floors (41 and 43) was encountered partly within the far south-eastern part of the site, and possibly contemporary drain 293 was recorded in the centre of the courtyard – both features presumably predate the late 1960's demolishing of the site.

1970s building and related features

5.4.15 In the western half of the site, the former early 1970s building had been constructed. The vast majority of this building had been removed prior to the archaeological excavation. Fragments of this structure survived comprising two parallel east to west aligned fletton brick and concrete walls (64 and 331), a north to south wall (67) and two other patches of fletton brick/concrete (but not numbered). A sewer drain cutting wall 326 is part of this building and possibly drain 306.

6 Data and Assessment of Archaeological Potential

6.1 Stratigraphic and Structural Data

The Excavation Record

6.1.1 All hand written records have been collated and checked for internal consistency, and the site records have been digitally recorded using *MS Access* Database software. The quantification list of excavation records have been recorded in the table below (Table 2). A preliminary matrix of the site has been digitally compiled using S*tratify* software.

Type	Quantity
Context registers	13 sheets
Context numbers	427
Plan registers	1 sheet
Section registers	2 sheets
Sample registers	3 sheets
Object Registers	2 sheets
Plans	18 all at 1: 50
Sections	78 (10 at 1:10 and 68 at 1:20)
Black and white films	2
Digital photographs	75 shot numbers Excavation * this does not include multiple shots or working shots

Table 2: *Quantification of excavation records*

Finds and Environmental Quantification

6.1.2 All finds have been washed, quantified, catalogues and stored in archival quality bags and boxes. Total quantities of the finds and ecofact categories are listed in Table 2.

6.1.3 Bulk environmental samples were collected from 15 contexts in the excavation all with 2 at 20L and 13 at 30L. Ten samples were from contexts which dated to Period 1 (these were from a hearth, a latrine, a ditch, six pits and a floor layer). Four samples were from contexts which dated to Period 2 (two from latrine **450** and two from pits). A single sample was taken from a Period 3 pit.

6.1.4 Brick and tile from the medieval to early post-medieval contexts were recorded on site with good examples retained. Period 4 brick walls were recorded on site and in the main CBM, animal bone, glass and shells from Period 4 features were not kept.

Artefacts	Number and/or weight
Coins and Jetton	1 coin and a jetton
Copper alloy objects	14 objects
Iron objects i(including nails)	44 objects (including fragments) and 93 nails (including fragments)
Metalworking residues	226 pieces (17.164kg)
Bone objects	4 objects
Composite objects	1 bone/iron and 1 copper/iron objects

Artefacts	Number and/or weight
Pottery object	1 pottery spindlewhorl
Stone objects	14 pieces
Vessel and window glass	5.719kg
Medieval to modern pottery	2360 sherds (56.107kg)
Medieval to modern brick	91 fragments (19.745kg) + others recorded on site
Post-medieval floor brick	2 fragments (0.874kg)
Limestone roof tile	6 fragments (0.618kg)
Ceramic peg tile	3916 fragments (338.246kg)
Ridge tile	6 fragments (0.879kg)
Pantile	6 fragments (1.544kg)
Drain	3 fragments (0.094kg)
Clay pipe	1296 fragments (3.361kg)
Fired Clay/daub	2 fragments (0.031kg))
Animal remains	811 fragments (30kg)
Environmental samples	15 bulk samples taken
Shells (marine)	5.769kg (oyster), 0.036kg (mussel), 0.012kg (cockle) and 0.007kg (common whelk)

Table 3: *Quantification of artefacts and ecofacts*

Range and Variety

6.1.5 Features and layers in the excavation comprised three medieval ditches, which defined possibly agricultural enclosures, two buildings (one post hole and the other with a stone foundation wall). Associated with the former building was a hearths, whereas with the latter was a hearth, a possible stone latrine and five fragments of clay floors. Elsewhere on site there were two other medieval post holes, 16 pits and two layers. In the post-medieval period there was a possible post hole structure, a stone latrine, a stone well, a ditch, six pits and many layers. In the modern period parts of six domestic buildings within the site, some surviving with internal rooms including floors, cellars and other features. In addition there were two or three other structures, a brick well, a ditch, 14 pits, five post holes, several manholes, many drains, a brick paved courtyard and a lot of layers.

Condition

6.1.6 Preservation of features varied across the site, but was on the whole fairly good, with more than 1m of stratified deposits dating from the medieval to modern periods recovered over areas of the site. The eastern side survived the best, with pre-modern remains in the western side being *c.*0.3m lower due to *c.*1970s reduction of this area. This reduction largely affected the post-1800 remains on this side of the site.

6.1.7 Fragments of two medieval buildings were found. The layout of Building 1 is uncertain with only a few post holes and a hearth uncovered. The partial layout of Building 2 is possible with some of its clay floors, a hearth, a wall and a possible latrine surviving. The post-medieval out-buildings (a possible latrine and well) comprised clunch courses. The 19th century building and external courtyard remains was good on the eastern side

of the site with floor surfaces mostly surviving. In contrast only wall fragments and cellars of buildings survived in the western part of the site.

6.1.8 The overall condition of the remains was roughly equal to Harvest Way (Atkins forthcoming) and compares favourably to those found at the excavations at Coldhams Lane (Atkins 2013) and the adjacent CAU Eastern Gate Hotel site (Newman 2013).

6.2 Documentary Research

Primary and Published Sources

6.2.1 A preliminary documentary research was carried out at the Cambridgeshire Record Office (CRO) after the excavation phases (see Section 1.3.10 – 1.3.27), to try and see if the 19th century remains of the site could be put into context.

Pre-Enclosure

6.2.2 There are no medieval documents which relate directly to properties within the lay settlement. No attempt has been undertaken to find pre-Enclosure records relating to the site for this PXA, but work on the post-1800 records did show areas of possible research for Period 2 for the future full report stage (see below).

6.2.3 One half of the site (Plot 29) was owned by the large and wealthy Barnwell Priory estate. At Enclosure this plot fronted Newmarket Road and within it had two reasonably high status early post-medieval features (a detached stone latrine and a stone well). It is possible/likely that these were associated with a related main house/farm house. More details from the Barnwell Priory estate sale documents etc. may have further information on buildings/use within Plot 29.

6.2.4 The other half of the site was part of Plot 30 which was owned by Benet College (now called Corpus Christi College) at Enclosure. Copious amounts of documents survive in this college's archives. The remainder of Plot 30, outside the development area to the east, included a former inn (Bird Bolt). Fourteen documents/listings are recorded in this archive relating to this inn from with the earliest dated 14th October 1601 and the latest 12th July 1810 (e.g. CCCC 09/17/18, but these have not yet been studied). In these college listings there is a note of land around the inn (mentions include 11.5 acres of land) and this latter area possibly/likely to have included the present development part of Plot 30 and also malt workings are also referred to in several. The Bird Bolt itself continued after 1810 and was only demolished in 1959. The various census details records ownership of this inn (see Section 1.3.22) and there is likely to be other yet unseen information on this inn.

6.2.5 Plot 29 includes the name Lucerne Close and there may be information on this.

6.2.6 It is possibly worth looking at the 18th century tithe documents in relation to properties for Coldhams Lane, Harvest Way and Newmarket Road excavations and this document is held at University Library (Doc. 1375). This document has been assessed as part of work on Harvest Way, and was then difficult to understand as properties were recorded without location details.

6.2.7 It should be noted that the survival of some parish documents is poor and this will mean that little will be achieved by trying to find any of these documents. Dr Stokes (1911, 100) wrote of St Andrew the Less parish, "the old parochial books of this parish are unfortunately lost (with the exception of a few certificates and magistrates orders) or mislaid'. For the Coldhams Lane excavation documentary research few records were found associated with the parish confirming Dr Stokes's assessment.

Post-Enclosure

6.2.8 Post-enclosure information has been partly assessed in this PXA report. Three of the six early 19th century buildings within the site and their owners (Mendicity, Jolly Butchers and bakers and grocers) has been assessed. Further work on these three is suggested for the full report. In addition, obtaining details of the two terrace houses along Abbey Street and the southern 'L' shaped house on Judd's Passage (and their owners) will be carried out for the full report.

Cartographic Evidence

6.2.9 All 19th and 20th century maps (between c.1807 to present) have been studied.

6.2.10 No further work on the cartographic evidence is recommended

6.3 Artefact Summaries

6.3.1 Small finds (coins, metal and miscellaneous)

Summary

A small to moderate collection of small finds comprising a single 19th century coin and a post-medieval jetton, 14 copper alloy objects, 44 iron objects (including sheet fragments), 93 nails or parts of nails, a bone/iron and a copper alloy/iron composite object, four worked bone objects and a pottery stoneware spindlewhorl.

Statement of Potential

Low numbers of medieval objects were found, but included a book-strap presumably from the priory. Post-medieval objects are more informative with a range of post-medieval objects (mostly early in date) which was found largely from one pit. The relatively few Period 3 objects have a domestic slant.

6.3.2 Metalworking residues

Summary

An assemblage of 226 pieces (17.16kg) of largely iron slag was found mostly within a single early post-medieval pit.

Statement of potential

The assemblage was largely undiagnostic and redeposited which was not closely datable and not associated with any other evidence of metal working. It is therefore of limited research potential.

6.3.3 Worked Stone

Summary

A small collection of 14 worked stone pieces were found comprising one floor tile, two quern, one pestle and nine whetstones

Statement of Potential

The assemblage mostly derived from post-medieval contexts including five fragments from latrine **450** and two from well **142** both features were possibly linked to a manorial farm. The artefacts give some indication of industrial activities within the village.

6.3.4 Glass

Summary

Archaeological works produced a small-moderate assemblage of glass weighing 5.719kg, of which the majority is vessel glass, the bulk of which are natural black glass bottles (3.962kg). The assemblage had no medieval glass, a small quantity of post-medieval (Period 2) and the vast majority from the 19th century.

Statement of potential

The glass recovered will help provide a broader understanding of the usage of glass vessels across the Barnwell settlement in the 18th and especially the 19th century. However, the material is, in itself, not worthy of further study. No further work is recommended on the assemblage with only the photography of the complete fluted bottle to be undertaken.

6.3.5 Pottery

Summary

Archaeological works produced a pottery assemblage of 2360 sherds weighing 56.107kg. The bulk of the assemblage is broadly 18th and 19th century (33.127kg) alongside a moderate medieval assemblage (weighing 14.525kg) with material from the post-medieval period also moderately represented (weighing 8.035kg), while the Late Saxon-early medieval period is poorly represented. The condition of the overall assemblage is unabraded to moderately abraded.

Statement of potential

The assemblage can contribute to understanding pottery consumption and usage within Barnwell village (medieval and post-medieval) /suburbs of Cambridge (modern) and has the potential to aid local, regional and national research priorities, specifically the longevity of the plot looked at through the pottery usage and comparisons made between plots. The 18th-19th century material offers various areas of research, including into the links with the Collegiate system. Documentary research can help establish the use of buildings and the occupations of residents and relate these to the material recovered from cellars and pits on the properties.

Further work is recommended on the assemblage including full recording (including collegiate pottery). c.9 vessels will need to be illustrated and 31 vessels to be photographed.

6.3.6 CBM, fired clay and limestone roof tile

Summary

A moderate assemblage of CBM, fired clay and limestone roof tile (comprising 91 medieval to modern bricks (19.745kg), 2 post-medieval floor brick (0.874kg), six medieval limestone roof tiles (0.618kg), 3916 ceramic peg tile (338.246kg), six ridge tile (0.879kg), six pantiles (1.544kg), three drain (0.094kg) and two fired clay fragments (0.031kg).

Statement of Potential

It is likely that the medieval brick as well as some of the peg and ridge tile originated from Barnwell Priory. This will help answer the regional research frameworks of possible links between the Priory and the lay settlement. At full report stages there will be minor changes once medieval phasing has been reassessed.

6.3.7 Clay tobacco pipe

Summary

The excavation produced 1296 fragments of clay tobacco pipe weighing 3361g, representing a minimum of 109 clay tobacco pipes. The material spans the period *c.* 1700/40–1850 and is a regionally significant assemblage. This is the best assemblage of pipe dating to the 1820's yet found from the Cambridgeshire area. Six Cambridge pipemakers can be identified from the presence of initials or names on over 40 pipes. There are also over twenty decorated pipes with no pipemakers marks. The assemblage is dominated by material from three pits, one of which contains an exceptional number of pipes.

Statement of potential

The three pipe groups dating to the 1820's, probably from the Jolly Butchers pub, have considerable analytical potential for helping to understand clay pipe usage at inns/pubs in this Barnwell suburb. These can be combined with other earlier inn related assemblages from Harvest Way and Eastern Gate. At Newmarket Road several bowls had masonic decorations removed indicate that such designs were not universally popular. Pipes marked T/M, those associated with Anne Pawson and Richard Nutter are of notable interest.

Given the closely dated and large assemblages, several bowls should be illustrated especially the masonic, T/M, AP and RN examples.

6.4 Environmental Summaries

6.4.1 Faunal Remains

Summary

A moderate collection of 811 fragments (30kg), of which 456 were identifiable to species (56.2% of the sample). All bones were collected by hand apart from those recovered from environmental samples; hence a bias towards smaller fragments is to be expected. The medieval assemblage is too small for any conclusions or comparisons. In contrast for the post-medieval there was a moderate assemblage which is typical of post-medieval urban assemblages. It represents general processing waste, largely from initial butchery of whole carcasses. The types of animals represented in the assemblage and the husbandry techniques employed are generally similar to other sites both close by and in East Anglia as a whole. Sheep, which are the dominant species in all periods, were primarily managed for their wool with meat production also important but still secondary. The cattle husbandry regime focused on beef, veal and dairying. Pigs were slaughtered at a young age to provide pork. Geese and fowl were exploited for meat, eggs and feathers.

No further analysis is recommended on this assemblage.

6.4.2 Environmental Remains

Summary

Fifteen bulk samples were taken mostly from medieval and post-medieval pits. Ten of the samples were poor, three moderate and two had good plant remains preserved mostly by carbonisation.

Recommendations

One medieval and one post-medieval sample will require further work. The results of these will not individually help answer research aims, but their importance is enhanced as they can be compared with contemporary samples taken from excavations to the east.

6.4.3 Shell

Summary

A small to moderate collection of 5.82kg of shell was recovered mainly from a single post-medieval pit with the remainder being mere background scatters in medieval to modern features and layers.

No further analysis is recommended on this assemblage

7 Updated Research Aims and Objectives

7.1 Introduction

7.1.1 The original research aims of the project recorded in the WSI (and copied in Section 4 above), were partly based on the Archaeological Solutions evaluation results which stated there were remains dating only to the medieval and post 1800 periods (Barlow and Thompson 2014). The Brief and WSI included research aims relating also to what was recovered in other excavations to the east of the site as it was thought the range (and quantity) of archaeological remains were likely to be greater than than those identified in the evaluation (Thomas 2014; Atkins 2014). The subsequent excavation found a highly stratified site with medieval to modern remains.

7.1.2 The interesting medieval and post-medieval remains within the site can answer several regional research aims

7.2 The formation of the medieval settlement

7.2.1 All the regional research agendas emphasise how little we know when, how and why medieval settlements were formed. In the case for the Harvest Way site there are three or so research questions which can be substantially answered (it also combines the first and third research objectives from Section 4 above). For ease in this PXA these three have been linked:

"the origins and development of the different rural settlement types need further research...more data will add to our understanding of the way places appear, grow, shift and disappear" (Medlycott 2011, 70).

"what is the relationship between rural and urban sites?...there is scope for significant development in our understanding between towns and their hinterlands" (ibid, 70).

The role of monasteries on settlements is seen as needing more study (Ayres 2000, 29 and 31).

7.2.2 These research questions are helped by several medieval documents surviving concerning Barnwell as well as four archaeological excavations and an evaluation which have recently taken place within the former Barnwell lay settlement. These consist of the present site, the excavation at Harvest Way c.30m to the east (Atkins forthcoming), Eastern Gate Hotel *c.*100m to the east (Newman 2013), at Coldhams Lane around 200m to the east (Atkins 2015), and an evaluation *c.*50m to the south-west (House 2013). In addition a small excavation took place adjacent to the west of the priory within fields, but had artefacts from the priory deposited within this site, possibly as levelling layers (Atkins 2012a).

7.2.3 There are documents which show that the original founding of Barnwell Priory took place near to Cambridge Castle in 1092, but it proved too small an area and this led to the priory being re-sited within 20 years of this date in AD 1112 on a greenfield site where previously there had just been a hermit (Maitland 1964). Barnwell is an interesting and relatively rare case of a priory growing wealthy enough to found a whole 'village' on its own probably from its beginning. The CAU report on Eastern Gate Hotel (Newman 2013, 121-2) has given a few other comparable examples such as at that at Royston, where the lay settlement was seemingly founded by Augustinian canons also on the site of a hermitage (just beyond the then Royston settlement) but also where there had been no pre-existing settlement (Munby 1977; Semmelman 1998, 15). Overall, Barnwell was different from most settlements with the regional research agendas emphasising how little we know when, how and why medieval settlements

were formed and emphasising the need for more research into these areas (*e.g.* Medlycott 2011, 70).

7.2.4 The four excavations within Barnwell lay settlement found no evidence of Late Saxon or Saxo-Norman occupation. Similarly no evidence of Late Saxon or Saxo-Norman occupation has been found within excavations 300m to the north-west of the site (Atkins 2012a). Based on current evidence the archaeological investigations appear to support the statement that this was a greenfield site. Sir Cyril Fox's suggestion of a possible Saxon settlement *c*.100m to the west of the Harvest Way site (Fox 1923, map G), is now shown as unlikely and had been based on relatively thin evidence of stray find(s). Similarly this is true concerning a couple of Anglo-Saxon stray finds were also recovered at Eastern Gate (Newman 2013). This Barnwell lay settlement is unusual as 'target work in Cambridgeshire has confirmed a Late Saxon origin for many existing settlements' (Medlycott 2011, 70).

7.2.5 Excavations at this excavation here (Newmarket Road) and at Harvest Way suggest that there may have been medieval enclosures fronting Newmarket Road prior to the establishment of domestic settlement here (Atkins forthcoming). The lack of precise dating from the few sherds of pottery recovered from these features does not allow us to say whether these enclosures were contemporary with the founding of the priory in AD 1112, but it is likely. If there was an attached lay settlement for the priory at this time, its position is therefore unknown. It is possible that the lay helpers were living either in Cambridge, or possibly in part of the precinct of the priory.

7.2.6 The lay settlement, overlay these agricultural enclosures and seems to have been established as a new foundation on the southern side of Newmarket road *c*.90 years after the priory was founded here. It is likely that this Barnwell lay settlement was planned in c.AD 1200 – it seems too co-incidental that all four excavations over a *c*.250m distance have evidence of occupation only from this date. It may also be significant that the lay church (St Andrew the Less) seems to have been built at this same date with fabric dating from the early 13th century (Salzman 1967, 126; CHER 05043).

7.2.7 Results of all four excavations within the lay settlement seem to suggest a long linear settlement fronting the southern extent of Newmarket Road was founded in *c*.AD 1200. The extent of the settlement is uncertain, but seems to have initially been at least *c*.300m long, although the western and eastern limits have not been found. The excavation within the present site indicates that this settlement continued to the east of this site. The furthest west where remains have been found so far is in an evaluation at No. 30 Occupation Road (House 2013), where possible quarry pits were found *c*.50m to the south of Newmarket Road and the eastern extent was at Coldhams Lane (Atkins 2015). The archaeological evidence seems to suggest that the settlement only comprised a single street – evidence suggest that houses did not front Coldhams Lane (Atkins 2015) and this route-way was therefore used only as a connecting road to other settlements etc. including Cherry Hinton and the fields.

7.2.8 A comparison to Barnwell settlement is Howes hamlet/village settlement which was established in *c*.AD 1150-1210 on a greenfield site along the Huntingdon Road, *c*.1km to the north of Cambridge town and partly within Cambridge fields (Cessford 2014b). It was thought that Howes may have been a settlement which catered for travellers and hunting (*ibid*, 53). The Barnwell and Howes settlements were built at a time when the population in Britain was expanding and settlements were growing in size, so the need for new accommodation was a priority, even it took up agricultural areas. One of the

differences between the two settlements was that Barnwell was built by a religious order whereas Howes was presumably by a lay manor.

7.2.9 In the Newmarket Road excavation remains of a post hole structure fronting Newmarket Road at the far north-western part of the site. It is likely this represented one plot, and there is likely to have been another plot to the east, but later archaeology may have removed remains in this area. At Harvest Way site remains of seven medieval buildings, roughly equally spaced apart, were found fronting Newmarket Road (Atkins forthcoming). These are very likely to be within plots as pits seem to form clear north to south lines behind these buildings (Atkins forthcoming). Other evidence for similar plots were found in the other two excavations to the east. At the CAU excavation directly to the east, where there were up to six plots between 6.9m and 7.8m wide (excluding Plot 6 which was up to 13.5m wide; Newman 2013, 15 and fig. 29), and two at Coldhams Lane (Atkins 2015). This layout is similar to the Grand Arcade excavations within Cambridge where 17 plots were suggested (Newman 2013, fig. 29) and also at Chesterton (Cessford with Dickens 2004; Newman 2014, fig. 16). Excavation at Neath Farm, Cherry Hinton and at Howes were very different and were based on square or sub-square enclosures with five plots were recorded at the latter site (Newman 2013, fig. 29; Cessford 2014b). Barnwell lay settlement therefore comprised burgage plots, which was rectangular 'urban' or 'village core' type plots which compares with the enclosure type which was 'hamlet' or 'village-edge' (Cessford 2014b, 52). Burgage plots were a property-type that occurred almost ubiquitously in urban and suburban contexts across England during the Middle Ages (Conzen 1960; Slater 1981).

7.2.10 In all four Barnwell excavations the plot boundaries were hypothesised by house remains and linear lines of features to their rear. The plot boundaries themselves have not survived in the archaeological record, but this is not surprising as burgage plots boundaries from the 13th and 14th centuries in the main comprised stake and wattle fences (Hall and Hunter-Mann 2002, 807-10) and hedges (Bowsher *et al* 2007, 23).

7.2.11 Barnwell Priory and its lay settlement success in the High medieval period may have led to an increase in its size, or at least its power. Originally Barnwell ward had been combined with the Saxon Barnwell suburb located just outside the town next to King's Ditch more than 1km to the west, with its own church of St Andrew the Great (Taylor 1999, fig. 22). In the 1279 survey both areas were counted as one (Newman 2013). In contrast, by the late medieval period Barnwell was important enough to form a ward in its own right, albeit the smallest in Cambridge (Maitland 1964).

7.2.12 The building of the priory and subsequently the lay settlement on a large open greenfield site, unlike the former site near the castle, allowed this new settlement to be planned. The substantial amount of fields around it meant it was free to expand or change how it wanted without major restrictions or hindrances from neighbours or other industries around it.

7.2.13 The lay settlement's location opposite the precinct wall presumably allowed the priory to control and organise its workers. The lay church was within the precinct wall which meant that the monks would be able to oversee the lay settlement without having to travel any distance. It is interesting to note that Barnwell Priory had a reputation as a 'harsh landowner' (Salzman 1967, 91 point 74). The houses being located directly opposite the priory meant the workers did not have to travel far either to their work in the priory itself or in the fields directly to the south. The latter was important as by the late medieval period the priory controlled most of the agricultural land in the vicinity of the settlement. For this reason the former medieval Cambridge East Field was later also referred to as Barnwell Field in some documents.

7.2.14 This location for Barnwell's lay settlement therefore makes economic sense. Similar examples of this prudent policy can be seen in other nearby monasteries at this date, both in terms of efficiency and the need for direct control. Bury St Edmunds Abbey, under Abbot Samson (1182-1211), took all but two of the manors back into direct control: 'since most of the abbey's income came from its landed property, to manage it directly and efficiently was obviously the wiser policy rather than farming it out to tenants, some of whom were in any case inefficient, at fixed uneconomic rents' (Gransden 2007, 24-25).

7.2.15 This positioning of both the priory and its later lay settlement may have been instrumental in their success. Over its 400 year history the priory became one of the most powerful and richest religious houses' in the East Anglian area. This was a favourable location: it was a separate settlement to Cambridge, more than 1km outside the town itself but within its hinterland (its Eastern Field) and therefore very close to this prosperous town, on the main road to Newmarket and adjacent to the navigable River Cam.

7.2.16 The siting of the priory outside, but very near Cambridge, and the fact that it was very wealthy with many fine buildings, was presumably the reason it often housed visitors of importance. It was, for example, the main place of residence when royalty visited Cambridge from at least the early 13th century with King John, Henry III, Edward II, Richard II (and his court), as well as the bishops of Ely in the 15th and early 16th century and even parliament had been held here (Salzman 1967, 244-6). These guests needed to be looked after by the priory and its servants – the lay people. The priory had acquired substantial wealth by at least the early 13th century – one of its areas of revenue was St Barnwell's Fair, which was granted to the cannons of Barnwell in 1211 but was already important by this date. The location next to this main road and importantly the River Cam, also allowed the priory to export and import commodities easily and cheaply (see below).

7.3 Trade and industry

Trade and industry is the second research objective from Section 4 (above). This covers Medlycott's aim that "The production and processing of food for urban markets is a key element in understanding the relationship between towns and their hinterlands...the interchange between rural food supplies and urban industrial and craft products was essential for both town and village or hamlet." (Medlycott 2011, 71). In the 2000 research framework it was stipulated under research topics that, "Priority should be given to the detailed examination of good animal bone and charred cereal deposit...this analysis would be useful as it may determine whether there was specialisation and surplus production in a rural community with the remainder presumably being sold off (Wade 2000, 25).

7.3.1 Within the backplots of possibly two 'burgage' plots at Newmarket Road there was some pits but no definite industrial features. The assessment of charred cereal remains found a single good medieval and post-medieval assemblage from samples, but they both seem to be linked respectively to a latrine attached to a late medieval domestic building and possible early-post-medieval farm house (see Fosberry, Appendix C.2). A moderate quantity of metal working debris, but no direct evidence of metal working was been found in the Newmarket Road excavations (or any of the other excavations within the lay settlement or to the west of the priory at the Regional College site). The debris found at Newmarket Road there is not likely to be significant to the site itself as the metal working was found only as secondary material – used in the backfilling of features with the actual metal working likely to have occurred within the priory's

forge/furnace. This suggestion was put forward after similar types of off-cuts (and slag) was found at both the Regional College site and at Coldhams Lane (Atkins 2012a; Atkins 2015).

7.3.2 Minor possible quarry pitting took place at Newmarket Road, but evidence for such activity was found in nearly all back plots within the *c.*15 'burgage plots' found in the three other excavations within the lay settlement (Newman 2013; Atkins 2015; Atkins forthcoming) as well as the evaluation at Occupation Road to the west (House 2013). A couple of the plots at Harvest Way did not have many quarry pits, showing that whilst this activity was widespread, it was not uniform. The terrace gravels extracted from the quarry pits was presumably for use for surfaces such as roads including in the priory?

7.3.3 Overall the site may only at best partially help us understand trade and industry (in contrast to much better results elsewhere in the other three excavations where the ability to help answer this question was collectively far greater. The lack of industrial evidence may suggest the Newmarket Road plots was being used primarily for crops to being grown/produced in its backplots as well as possibly some stock. The type of features found at Newmarket Road has some similarity to Coldhams Lane (although no wells were found). At Coldhams Lane evidence from pollen, insect and waterlogged environmental seeds recovered from two medieval wells which showed its backplots had been a largely cleared landscape with some weeds found, but had been primarily used as agricultural land with areas of probable composting and farm waste with possibly a local cultivation of strawberries, cabbage, and even carrots and parsnip. (Atkins 2015).

7.3.4 In contrast to both Newmarket Road (and Coldhams Lane) the much larger excavations at Harvest Way and Eastern Gate Hotel showed some plots were extensively being used for specific industrial activities but these were in a minority of plots (largely in two or possibly three of the seven in Harvest Way (Atkins forthcoming) and in possibly two at Eastern Gate (Newman 2013). The former included a plot with a backplot structure (Structure 1) behind Building 3 with four possible internal hearths and two further plots (both directly to the east of Structure 1) where there were concentration of ovens/kilns and clay lined pits/tanks located within the middle of the backplots often very close to wells (Atkins forthcoming). The evidence here seems to point to crops being soaked and possibly burnt. Similar clay-lined tanks were found at Eastern Gate Hotel *e.g.* Newman 2013, fig. 15), but none of these type features were found either at Coldhams Lane or at this present excavation at Newmarket Road (Atkins 2015). At Eastern Gate Hotel there was probable evidence for tannery activities in at least one of its backplots (Newman 2013, 114), but this industrial process was not found at Harvest Way, Coldhams Lane or Newmarket Road.

7.3.5 The relatively large number of whetstones found at Newmarket Road may be of significance. At nearby Harvest Way there was also a relatively large number of number of whetstones recovered but it is also uncertain whether their use attest to former workshops on site, or they were just artefacts deposited from the priory (Atkins forthcoming). Interestingly very few whetstones were found at Eastern Gate Hotel further to the east and only a single example at Coldhams Lane (Atkins 2015, fig. 17).

7.3.6 A list of occupations of principal tenants in Barnwell in 1279, 1295 and 1309-10 has been taken from two medieval sources the *Liber Memorandum Ecclesie de Bernwelle* and the *Rotuli Hundreorum* and this was included in the Eastern Gate report (Newman 2013, table 64). A variety of professions were recorded although it should be noted that the named individuals did not necessary reside within their respective property plots, as

it was relatively common for principal tenants to sub-let messuages during the medieval period (*ibid*, 120).

7.3.7 The animal bone assemblage recovered from Newmarket Road was moderate with 811 fragments of which 456 were identifiable to species (see Faine Appendix C.1). The collection of bone from the Harvest Way excavation was large for both the medieval and post-medieval periods. The medieval period had 1434 'countable' bones which consisted largely of domestic animals, with sheep/goat at 35.9% of the total, along with smaller numbers of cattle and a relatively large number of pig whereas horse and dog were scarce. These percentages were similar to the assemblage recovered from the Eastern Gate site (Newman 2013, 113). In all, the collective quantities of animal bone were recovered from the Barnwell excavations was extrelely large and the this enhances the importance of the Newmarket Road site. The Barnwell assemblages can be compared with other local sites and there seems to have been differences, for example at both Howes and Heath Farm, Cherry Hinton the horse numbers were far higher (Cessford and Slater forthcoming; Cessford 2014b, 53).

7.4 Continuity and change from medieval to post-medieval

7.4.1 The third research objective from Section 4 asks whether there was continuity and change from medieval to post-medieval. Barnwell lay settlement is likely to have been severely affected by the Dissolution. The Priory would have directly employed lay people within its precinct as well as probably purchased produce and goods from the lay settlement grew or made in their back plots (and common land), although it did have a nearby market in Cambridge (1km) away. This would have been compounded by immediate instability of the manor of Barnwell (comprising former priory land) which was sold three times between 1538 and 1553 (the manor was mostly kept in contact, although there was some fragmentation as some lots were brought by Dr Legh (Danckwerts 1980, 211). The main Abbey land portion was firstly acquired by John Lacey, but finally was brought by Dr Wendy who took over the manor in 1553. He was a doctor who had attended Henry VIII, is likely to have had little knowledge of farming and was based at Haslingfield many kilometres from Barnwell and also owned other land and property elsewhere. It is likely, therefore he was was an absentee landlord who was mainly interested in enjoying his new Haslingfield manor and park: presumably he leased out the Barnwell land and therefore had little interest in helping Barnwell village itself.

7.4.2 At Newmarket Road, the former two medieval plots seem to have been amalgamated in the late medieval period when a large late medieval stucture built in the middle of the plot but seems to have been split into back into two in the early post-medieval period. The late medieval building went out of use by *c*.AD 1600 at the latest (it was cut by a large quarry pit backfilled with material dating to this period). It is possible that this was deliberate as possibly the eastern half of the plot became part of land owned by a new inn. At Enclosure (200 years later), this eastern area of the site was part of Plot 30 and this plot included the Bird Bolt Inn complex (with its own malt workings) attached directly to east of the excavation area. The Bird Bolt, with the earliest documentary evidence dating (perhaps significantly) to 1601 – this is about the same time the quarry pit cuts the late medieval building. informs us perhaps it dates from at least 1601 (see Section 6.2.4). The Bird Bolt also had a brick cellar (survived until 1959) which is similar to the one excavated at Harvest Way.

7.4.3 Within the Newmarket Road excavation, there were two early post-medieval clunch structures (possible a latrine and a well) and these were presumably part of a notable nearby domestic structure, possibly a farmhouse located on former Barnwell Priory

estate land. A location of a farm house at this location would have been the only viable place for that part of the estate to the western side of Newmarket Road. Dankwerts (1980, fig. 1) plan of the estate shows the development area was the only part of the estate here where it connected directly with Newmarket Road (all the rest of the land was located away to the south of the Newmarket Road frontage. The postulated farm house was also within the centre of the village, nearly directly opposite the parish church. The main (and new) post-Dissolution manor itself was presumably the 16th century Abbey House which is still standing close (*c.*100m) to the north-west of the site on the opposite side of Newmarket Road. The relative closeness of the manor, the manor farm and the parish church can be seen in many other sites.

7.4.4 At Harvest Way, there is a similar upheaval and reorganisation of the western quarter of the site soon after Dissolution (Atkins forthcoming). This quarter of the site amalgamated two of the medieval plots for a new manor house. The latter was recorded in the Victorian period calling it the site of an old manor (Atkins forthcoming). Archaeological evidence found a large post hole building with an attached impressive stone cess-pit (*ibid*). In contrast the medieval plots within the other three-quarters of the Harvest Way site seems to have been maintained into the post-medieval period. This is different to evidence from excavations by CAU 100m to the east of the current site at Eastern Gate where there may have been a decrease in use on the site in the mid 16th to 18th centuries, and an amalgamation of the former medieval plots from the six former medieval plots into three larger units, one was a farmstead, and another a brewery and/or public house (Newman 2013). Excavations at Coldhams Lane have shown there is likely to have been a period of abandonment coinciding with the Dissolution of Barnwell Priory in the mid 16th century until c.1650. when the site was probably given out to pastoral farming (Atkins 2015).

7.4.5 It is interesting to note that whilst Barnwell village survived, the hamlet of Howes located on Huntingdon Road in the northern Cambridge fields did not – it declined from the early/mid 15th century and ceased by the early/mid 16th century (Cessford 2014b). At some time after the Dissolution at Harvest Way a new Brick inn was built in the centre of the site (possibly Building 11, but certainly Building 12). This inn was almost certainly established by some time in the 17th century and included a brick built cellar and a later brick possible stable complex to the rear (replacing timber buildings (Building 11).

7.4.6 Barnwell village in the early post-medieval period therefore seems to have changed in character from medieval domestic buildings (albeit using their backplots for trade) to a village where farming and pleasure seems to be its business (two manor houses, a manor farm, at least three inns and several domestic buildings). The documentary records states that there were 67 properties in Barnwell in *c.*1625 (Newman 2013, table 66). Honor Ridout in her book on Cambridge and Stourbridge Fair notes that early post-medieval writers recorded their journeys to the fair. One noted that Borough Officials started in Cambridge and when they went through Barnwell they passed the abbey farmhouse and a little cluster of houses and pubs (Ridout 2011, 15).

7.4.7 The evidence points to a high percentage of pubs/inns alongside some relatively wealthy occupants/buildings. Entertainment was obviously a major industry for post-medieval Barnwell. The reasons for so many inns probably lies in the holding of two nearby major medieval markets: at Midsummer Common and at the former leper hospital (Stourbridge Fair). Both continued into the post-medieval period and were regionally or even of national importance. The latter lasted up to a month and brought in traders and buyers from all over England and beyond. Barnwell was also adjacent to

a major road and river and therefore was an extremely important location for travelling (including wool carriers). The latter is attested from excavations 0.3km to the north-west of the site where artefacts and documentary records suggests it is likely this area was used as a meeting place for carriers before selling their wool in Cambridge (Atkins 2012a, 21). It is thus not surprising that in the 18th century Barnwell was known as 'Bawdy-Barnwel' in a poem written by Edward Ward in 1700 (and quoted by Newman 2013, 128-9).

The 1731 fire in Barnwell purporting to have destroyed 50 houses. This fire seems to have resulted in at least one of the inns burning down at the Harvest Way site suggesting it affected the more central part of the village (Atkins forthcoming). At Newmarket Road, it is uncertain whether the Bird Bolt (directly to the east) or the postulated farm house (directly to the west) were affected by the fire. It is possible they they were as 30m to the east at Harvest Way as post fire new boundaries were constructed along similar buildings with clunch foundations fronting Newmarket Road (Atkins forthcoming)

7.5 Post-medieval to modern

"The growth and impact of towns on the landscape needs to be further studied" (Medlycott 2011, 79)

Important aspects that have been largely overlooked in recording the historic urban environment include the development of 19th/20th century housing, the economic and social influences of town" (Medlycott 2011, 80)

7.5.1 The excavations at Newmarket Road (and the other three excavations in the lay settlement) will be able to answer these two linked regional research topics (not previously recorded as research aims in the site's WSI).

7.5.2 A significant part of the excavation results comprised archaeological remains post-dating the Enclosures 1808-1812. In this period Barnwell rapidly changed from being a separate village to a Cambridge suburb. A small population is recorded for Barnwell (St Andrew the Less parish) in 1801 with just 252 people (79 houses) - the lowest of 14 parishes which made up Cambridge. It grew to 411 in 1811; 2211 in 1821; 6651 in 1831; 9486 people (1953 properties) in 1841 and 11776 in 1851 (Salzman 1967, 138). By the 1830s the former village of Barnwell had been become a suburb of Cambridge. Cambridge Borough (and university) expanded from 10087 people in 1801 to 24453 in 1841, a rise of 242% (*ibid*, 138). The expansion of Cambridge between 1801 and 1841 took place largely in St. Andrew the Less parish where there was a rise in population of 9234 whereas in the other 13 parishes (and university) combined saw a rise of just 5132 people.

7.5.3 The expansion can be seen within Newmarket Road excavations and this took place between *c*.1813 and *c*.1830 with a large increase in buildings within the site. From being part of two much larger plots, the site was sub-divided and had five early 19th century buildings were built in the excavation area with two having dual use (The Jolly Butchers (butchers/ pub) and a grocers/baker) as well as three domestic buildings. The routeway Judd's Passage ran through the site connecting with further terrace houses which fronted it directly beyond the excavation area to the south.

7.5.4 The whole of the former village of Barnwell was similarly affected – former backplots were infilled and congested with houses across the whole former village. This can be seen in all four excavations where former backplots were rapidly rebuilt with terrace houses and small industrial activities were undertaken such as glass making at Harvest Way (Newman 2013; Atkins 2015; Atkins forthcoming). The net effect was that the land

between Cambridge and into Barnwell became the slum and lesser industrial area of the new greater Cambridge in the 19th century (RCHME 1988, 366).

7.5.5 The question therefore needs to be looked at in detail. Measuring and trying to understand increase in population is important as towns in Britain expand (or contract) depending on different local circumstances. In the first four decades of the 19th century the national increase in population was about two-thirds (Hopkins 1989, 78). Using the population data (above), it can be seen that Cambridge expanded by four times the national average. This is especially marked considering the stagnation in population in the town between 1750 and 1801 (virtually no increase in population and well below the national average). If the population growth in St Andrew the Less parish is taken out of the equation, the Cambridge growth in population was below the national average. The population rise in St Andrew the less parish was a rise of more than 50 times the national average. This extraordinary increase in population needs to be considered – indeed there may have been several factors (some interlinked) which led to this growth.

7.5.6 Firstly, up to the end of the 18th century Cambridge was encircled by fields and commons, including the Barnwell Field extending from the river below Jesus College to Coe Fen and the Western Fields (RCHME 1988: lviii). The open fields were subject to rights of common which rendered it necessary that they be cultivated as arable land (CUL MS Doc 621/30). After Enclosure this changed. At the same time in *c.*1808, Panton land (former Barnwell Priory estate) went from being in long term ownership since 1763 by a family owner to being sold off in many plots to people, at least most of whom, presumably had no attachment and wanted to make a large profit.

7.5.7 In addition another factor would have been that the two great fairs which Barnwell relied on diminished in size from at least the mid 18th century. After problems in 1802 at Stourbridge Fair, Ridout (2011, 86) states that it continued, but was a shadow of its former self. Barnwell had benefited greatly from these fairs and therefore with money reduced there was presumably an incentive to look elsewhere to compensate. There was therefore less incentive to keep backplots to grow produce/rear stock.

7.5.8 Thirdly, It has been long recognised by economic and social historians than an active building trade 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). It was not therefore not a coincidence that in Barnwell a brickworks was located, from at least *c.*1800, less than 200m to the east of the site (recorded on the 1807-12 Enclosure Map). Two or three separate brickworks are recorded on the 1830s and 1840s maps around this Barnwell area to the north-east and east of the site. The brickworks were located there because there was good clay beds for brick making, proximity to the river and a major road for transportation. Significantly the brickworks were very close to a large area where there was to be a very large growth in population/housing. The bricks therefore were relatively cheap to produce and did not need to be transported far to where people wanted to sell land and build houses. These economic factors related directly to the brick/building industry and were a major reason for expansion in this part of Cambridge. This concentration of brickmaking is well-known from elsewhere *e.g.* at Northampton where four adjacent brick kilns were recorded in the far northern segment of the town and these accounted for over half of Northampton's brickmakers. This location was an area of good clay beds, next to the turnpike road in an area which saw the greatest housing expansion within the town in the 19th century (Atkins 2002, 97).

7.5.9 Fourthly, there was a need for working class houses and labour to meet the overall increase in Cambridge. Such accommodation and industry could not be placed in the centre of Cambridge which comprised middle class colleges who wanted their area maintained to a high standard (this policy can be clearly seen in having the new railway located well away from the town centre). Instead of infilling Cambridge centre itself, the backplots of Barnwell were rapidly congested with houses across the whole village.

"Serious work is required on material cultural studies of the post-medieval and particular modern periods, including pottery, brick, tile, glass and clay tobacco pipes." (Medlycott 2011, 78).

7.5.10 The Newmarket Road post-medieval and modern assemblages of pottery, brick, tile, and clay pipe assemblages were all large (although the glass assemblage was moderate; see Atkins, Cessford and Fletcher, Appendicies B. 4-B.7). If viewed as part of a related single settlement (including the notable quantity of artefacts from Harvest Way, Eastern Gate Hotel and Coldhams Lane),their collective importance are substantially increased.

7.5.11 Five features within the Newmarket Road excavation produced primary artefact assemblages comprising two Period 2 features (quarry pit **141**/**265** and latrine **450**), and both were backfilled in *c*. AD 1600. Moderate unabraded brick assemblages and large primary deposits of ceramic peg tile were recovered from both (see Atkins, Appendix B.6). Three Period 3 pits (**372**, **374** and **401**) produced notable clay pipe assemblages dating to *c*.1823-5 and these collectively are the most significant assemblage of this period yet found in Cambridge (see Cessford Appendix B.7). Their importance is possibly increased as these features may have been within the courtyard of an adjacent pub *The Jolly Butchers*. Other notable clay pipe assemblages from inns/pubs dating from the early 18th century were found in the excavations at Eastern Gate and Harvest Way and taken in conjunction with these they have considerable analytical potential for studying clay pipe usage at inns in this suburb of Cambridge over time. Overall the clay pipe collection from the site is viewed by Cessford to be of regionally significance.

8 Methods Statements for Analysis

8.1 Stratigraphic Analysis

8.1.1 The basic stratigraphic analysis and phasing has been completed but will need some refinement by reference to the pottery.

8.2 Illustration

8.2.1 Illustrations will include phase plans including detailed areas. Section drawings and photographs of key features, particularly wells will be included in the archive report. It is recommended that c. 13 small finds are drawn, along with nine pottery vessels (and 31 to be photographed), a small number of the pipe bowls and stems and a small number of stone objects.

8.3 Documentary Research

8.3.1 A considerable amount of documentary research has already been done, but it would be useful to visit the University Library, Cambridge which holds an 18th century tithe roll of the parish (Doc. 1375) a Terrier dated 1591 (Add Mss 6919) and records related to Inclosure 1779, 1801-1819 (Doc 621 and doc 127-31). The documents concerning the Bird Bolt are likely to include at least some of the land on Harvest Way and Newmarket Road sites.

8.4 Artefactual Analysis

8.4.1 All the artefacts have been assessed (Appendices B.1-B.7) and most require no further work. Further analysis is recommended as follows:

- Worked Stone. Further work is needed with marble analysis and stone analysis of the pestle. Research on whetstone comparisons. Seven items to be drawn.
- Post-Roman pottery. Further work is needed in studying assemblage including possible refits. Identification of new forms and traits are likely. The pottery linked to Cambridge Colleges should be sent to a specialist. A minimum of 9 vessels will need to be illustrated and 31 vessels will need to be photographed to record decoration, form or makers marks.
- Clay tobacco pipe. Analysis of the Tobacco pipe will be targetted on the assemblages associated with an inn and to identify different sources particularly for the 1820s assemblage. A small number of items are recommended for illustration.

8.5 Ecofactual Analysis

8.5.1 All ecofactual remains have been assessed (Appendices C1-C3) and no further work is recommended other than:

- Full analysis and report of two environmental samples.

9 Report Writing, Archiving and Publication

9.1 Report Writing

A full archive report will be produced based on this post excavation report and added to and amended in accordance with the recommendations.

9.2 Storage and Curation

9.2.1 Excavated material and records will be deposited with, and curated by, Cambridgeshire County Council in appropriate county stores under the Site Code CAMNMR14 and the county HER code ECB 4268. A digital archive will be deposited with OA Library/ADS. CCC requires transfer of ownership prior to deposition (see Section 11). During analysis and report preparation, OA East will hold all material and reserves the right to send material for specialist analysis.

9.2.2 The archive will be prepared in accordance with current OA East guidelines, which are based on current national guidelines

9.3 Publication

9.3.1 The results of the excavation will be published as a summary of the main findings in a single volume along with the results of adjacent excavations (Harvest Way, Eastern Gate Hotel and Coldhams Lane). Selected illustrations will include phase plans, sections, finds drawings and historic maps.

10 Resources and Programming

10.1 Project Team Structure

Name	Initials	Project Role	Establishment
Aileen Connor	AC	Project manager/content editor	OA East
Rob Atkins	RA	Author	OA East
Elizabeth Popescu	EP	Editor	OA East
Carole Fletcher	CF	Post- Roman pottery	OA East
Rachel Fosberry	RF	Environmental samples	OA East
Ruth Shaffrey	RS	Worked stone	OA South
Jemima Woolverton	JW	Documentary	OA East
TBA	TBA	Pottery from Cambridge Colleges	Freelance
Illustrators	ILL	Illustrations/report formatting	OAE

Table 4: *Project Team*

10.2 Stages, Products and Tasks

Task No.	Task	Staff
Project Management		
1	Project management	AC + EP
2	Liaison with relevant staff and specialists, distribution of relevant information and materials	RA
Stage 1: Stratigraphic analysis		
3	Final pottery dating	CF
4	Finalise site phasing	RA
5	Add final phasing to database	RA
6	Compile group and phase text	RA
7	Compile overall stratigraphic text and site narrative to form the basis of the full/archive report	RA
8	Review, collate and standardise results of all final specialist reports and integrate with stratigraphic text and project results	RA

Task No.	Task	Staff
Illustration		
9	Digitise selected sections	Ill
10	Prepare draft phase plans, sections and other report figures	RA
11	Select photographs for inclusion in the report	RA
Documentary research		
12	Research at University Library etc.	JW
Artefact studies		
13	Post-Roman pottery full report	CF
14	Worked stone. Full report	RS
Environmental Remains		
15	Environmental samples full report	RF
Stage 2: Report Writing		
16	Integrate documentary research	RA
17	Write historical and archaeological background text	RA
18	Edit phase and group text	RA
19	Compile list of illustrations/liaise with illustrators	RA + Ill
20	Write discussion and conclusions	RA
21	Prepare report figures	RA
22	Collate/edit captions, bibliography, appendices etc	RA
23	Produce draft report	RA
24	Internal edit	AC + EP
25	Incorporate internal edits	RA
26	Final edit	RA
27	Submit draft full grey literature report to CCC archaeologist for approval	RA
28	Await any comments, make changes where appropriate	RA

Table 5: *Task list for full archive report*

10.3 Project Timetable

10.3.1 It is anticipated that once this PXA has been approved, the full report will be ready for submission within 6 months.

11 OWNERSHIP

11.1.1 The ownership of the archive (paper and artefacts) will pass to Cambridgeshire County Council after the project has been published.

Appendix A. Context Summary with Provisional Phasing

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
1		0		layer		machined	0			3
2		0		masonry	main wall	house	6.6	0.4	0.25	3
3		0		masonry	?door	house	1	0.25	0.18	3
4		0	5	layer	?levelling	?for house	0		0.14	3
5		0	5	layer	?levelling		0		0.1	3
6		0	5	layer	levelling		0		0.04	3
7		0	2	layer	levelling		0		0.2	3
8		0	6	masonry	wall	structure	2.35	1.1	0.14	3
9		0	6	layer	levelling		0			3
10		0	6	layer	levelling		0			3
11		12	6	fill	ditch		0	0.75	0.2	3
12		12	6	cut	ditch		0	0.75	0.2	3
13		0	5	layer	levelling		0		0.28	3
14	23 50 101 113 123 139 145 195	0		layer	cultivation		0			2
15	44	0	4	layer	levelling	?for house	0		0.34	3
16		0	4+10	layer	levelling		0		0.38	3
17		0	4 +10	layer	levelling		0		0.47	3
18	45	0	4	layer	levelling		0		0.5	3
19		19	1	cut	wall	building	0		0.64	3
20		19	1	fill	wall	building	0	0.12	0.4	3
21		0	1	masonry	wall	building	0		0.64	3
22		0	5	masonry	partition wall	house	3.4	0.25	0.18	3
23	14 50 101 113 123 139 145 195	0	1	layer	cultivation		0		0.33	2
24		0	1	layer	levelling		0		0.32	3
25		25	1	cut	wall	building	0		0.68	3
26		25	1	fill	wall	building	0	0.46	0.68	3
27		0	1	layer	levelling		0		0.11	3
28		28	1	cut	drain		0		0.86	3
29		28	1	fill	drain		0		0.53	3
30		28	1	fill	drain		0		0.46	3
31		0	1	layer	levelling/cultivation		0			2
32		0	1	layer	levelling		0		0.2	3
33		0	1	layer	levelling		0		0.17	3
34		0	1	masonry	wall	building	0	0.34	0.82	3
35		0	7	layer	levelling		0			3
36		37	7	fill	pit		0		0.6	3
37	158	37	7	cut	pit		0	0.85	0.6	3
38		0	8	layer	levelling		0		0.06	3
39		77		masonry	wall	house	10.5	0.3	0.24	3
40		0	8	layer	floor	house	1.31	1.3	0.14	3
41	1076	0		layer	floor	building	1.5	1		3
42	1073	0		masonry	wall	building	1.5	0.11		3
43	1060 1062	0		layer	floor	building	0			3
44	15	0	2	layer	levelling		0		0.1	3

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
45	18	0	2	layer	levelling		0		0.1	3
46		0	8	masonry	internal wall	house	1.25	1	0.24	3
47		77	8	fill	foundation trench	house	0.7	0.1	0.34	3
48		0	8	layer	levelling	?floor	0.96	0.7	0.16	3
49		0	8	layer	levelling		0		0.1	3
50	14 23 101 123 139 145 145 195	0	8	layer	cultivation		0		0.16	2
51		0	8	layer	levelling		0	0.7	0.12	3
52	1003	0		masonry	wall	building	1.5	0.11		3
53	1045	0		layer	levelling		0			3
54		0	4	masonry	culvert	drainage	0.8	0.24	0.07	3
55	1079	0	4 +10	masonry	wall	house	1.7	0.24	0.15	3
56		0	10	masonry	wall	house	1.75	0.45	0.07	3
57		0	4	masonry	external floor	courtyard	1.5	0.7	0.08	3
58		0	3	layer	pathway		0		0.1	3
59		0	3	layer	levelling		0		0.1	3
60		0	3	layer	levelling		0		0.14	3
61		0	3	layer	pathway		0		0.07	3
62		62	3	cut	drain		0		0.28	3
63		62	3	fill	drain		0		0.28	3
64		0	9	layer	concrete	20th C building	0		0.15	3
65		0	9	layer	?brick floor		0		0.35	3
66		0	9	masonry	wall		0	0.4	0.35	3
67		0	9	masonry	wall	building	0			3
68		0	9	layer	levelling		0		0.35	3
69		0	11	fill	drain pipe		0			3
70		0		fill	drain pipe		0			3
71		0		masonry	soakaway/manhole	structure	1.22	1.1		3
72		0		fill	drain pipe		0			3
73		0		layer	concrete		0			3
74		0		masonry	soakaway manhole	structure	1.2	1.2	0.9	3
75		0		fill	drain pipe		0			3
76		0	2	masonry	wall		5.4	0.48	0.2	3
77		77	8	cut	foundation trench	house	0		0.34	3
78		0	11	layer	levelling		0		0.42	3
79		0	4	layer	levelling		0		0.09	3
80		0	3	layer	levelling		0		0.2	3
81		0	11	fill	concrete		0		0.15	3
82		82	11	cut	drain		0	0.2	0.35	3
83		83	11	fill	drain		0	0.2	0.35	3
84		0	4 10	layer	capping		0		0.15	3
85		85	4 10	cut	drain		0		0.5	3
86		85	4 10	fill	drain		0		0.5	3
87		0		masonry	wall	Pub	7.5	0.46	0.33	3
88	1040	0		masonry	wall	Pub	0			3
89		0		masonry	wall	19th C building	0			3
90		0		masonry	wall	19th C building	0			3

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
91		0	15	layer	?levelling		0		0.6	3
92		0	15	layer	levelling		0		0.25	3
93		0	13	layer	concrete drain		0			3
94		0	13	layer	rubble		0		0.25	3
95		0	13	masonry	wall	19th C building	3.05	0.18	0.15	3
96		0	17	masonry	floor	house	3.15	1.3	0.06	3
97		0	17	masonry	wall	house	3.3	0.2	0.3	3
98		98	16	cut	wall	building	0	0.2	0.3	3
99		98	16	fill	wall	building	0	0.2	0.3	3
100		0	16	masonry	wall	building	3.4	0.11	0.14	3
101	14 23 50 113 123 139 145 195	0	16	layer	cultivation		0		0.14	2
102		0	16	layer	levelling		0		0.09	3
103		0	16	layer	levelling		0		0.11	3
104		0	16	layer	levelling	?building	0		0.08	3
105		0	16	layer	levelling	?building	0		0.08	3
106		0	16	layer	levelling	?building	0		0.03	3
107		98	16	fill	wall	building	0	0.64	0.3	3
108	154	0	7	masonry	wall	building	3.5	0.22	0.14	3
109		111	17	fill	pit		0.6	0.4	0.22	3
110		111	17	fill	pit		0.6	0.4	0.14	3
111		111	17	cut	pit		0.6	0.4	0.32	3
112		0	17	layer	levelling	?building	0.6		0.24	3
113	14 23 50 101 123 139 145 195	0	17	layer	cultivation		0		0.24	2
114		0	20	layer	levelling		0		0.04	3
115		0	20	layer	levelling		0		0.08	3
116		0	20	layer	levelling		0		0.2	3
117		0	20	layer	levelling		0		0.05	3
118		0		masonry	wall	building	1.9	0.25	0.18	3
119		296		masonry	wall	building	1.55	0.65	0.6	3
120		0		masonry	wall	structure	0		0.35	3
121		121	1	masonry	culvert	drainage	0	0.35	0.22	3
122		122	1	fill	culvert	drainage	0	0.17	0.22	3
123	14 23 50 101 113 139 145 195	0	18	layer	cultivation		0		0.05	2
124		0	18	layer	levelling	building	0		0.04	3
125		0	18	layer	levelling		0		0.1	3
126		0	18	layer	levelling		0		0.09	3
127		0	18	layer	levelling		0		0.06	3
128		0	18	layer	levelling		0		0.15	3
129		0	18	layer	levelling		0		0.17	3
130		132	19	masonry	drain		1.15	0.3	0.1	3
131		132	19	fill	drain		0	0.44	0.22	3
132		132	19	cut	drain		1.15	0.44	0.22	3
133		0	19	layer	levelling		0	0.36	0.16	3
134		0	12	layer	demolition		0		0.34	3
135		135	12	cut	ditch		0		0.43	2

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
136		135	12	fill	ditch		0		0.43	2
137		0	12	masonry	drain		0	0.38	0.24	3
138		0	16	layer	levelling		3.4	1.3	0.05	3
139	12 23 50 101 113 123 145 195	0	21	layer	cultivation		0		0.34	2
140		141	21	fill	pit		0.54	0.3	0.64	2
141	265 352 359	141	21	cut	pit		0.54	0.3	0.64	2
142		142		cut	well		2.7	2.6	4	2
143		0	22	layer			0		0.4	3
144		0	22	layer			0		0.15	3
145	14 23 50 101 113 123 139 195	0	22	layer	cultivation		0		0.5	2
146		146		cut	pit		0.67	0.33	0.3	0
147		146		fill	pit		0.67	0.33	0.3	0
148		148		cut	pit		0.48	0.33	0.19	3
149		148		fill	pit		0.48	0.33	0.19	3
150		150		cut	pit		0.33	0.25	0.12	0
151		150		fill	pit		0.33	0.25	0.12	0
152		0		layer	?cultivation		0		0.26	3
153		154		fill	?wall		1.3	0.54	0.12	3
154	108	154		cut	?wall		1.3	0.54	0.12	3
155		158		fill	pit		1.2	0.9	0.28	3
156		158		fill	pit		1.12	0.9	0.28	3
157		158		fill	pit		0.7	0.66	0.3	3
158	37	158		cut	pit		1.18	0.9	0.86	3
159		0		layer	natural		0			0
160		142		fill	well		0		0.26	2
161		142		fill	well		0		0.54	2
162		142		fill	well		0		0.86	2
163		142		masonry	well		0.7		4	2
164		142		fill	well		0		0.34	2
165		142		fill	well		0		0.6	2
166		142		fill	well		0		0.72	2
167		168		fill	pit		0.8	0.5	0.51	1
168		168		cut	pit		0.8	0.5	0.51	1
169		170		fill	?post hole	Building 1	0.6	0.36	0.4	1
170		170		cut	?post hole	Building 1	0.6	0.36	0.4	1
171		172		fill	post hole	Building 1	0.4	0.25	0.11	1
172		172		cut	post hole	Building 1	0.4	0.25	0.11	1
173		174		fill	post hole	Building 1	0.8	0.6	0.25	1
174		174		cut	post hole	Building 1	0.8	0.6	0.25	1
175		176		fill	post hole	Building 1	0.46	0.4	0.14	1
176		176		cut	post hole	Building 1	0.46	0.4	0.14	1
177		178		fill	pit or ditch		1.6	0.35	0.62	3
178		178		cut	pit or ditch		1.6	0.35	0.62	3
179		179		cut	pit		1.27	0.85	0.65	3
180		179		fill	pit		0.85	0.5	0.65	3
181				layer	concrete		0		0.13	3

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
182		182		masonry	well					3
183		185		fill	well		0		1	3
184		185		fill	well		0.7		1.1	3
185		185		cut	well		1.75		1.25	3
186		187		fill	post hole		0.5	0.3	0.14	3
187		187		cut	post hole		0.5	0.3	0.14	3
188		189		fill	post hole		0		0.46	3
189		189		cut	post hole		0.32		0.46	3
190		192		fill	pit	?quarry	1.2		0.36	3
191		192		fill	pit	?quarry	0			3
192		192		cut	pit	?quarry	1.4	1.35	0.76	3
193		194		fill	post hole		0.4		0.24	2
194		194		cut	post hole		0.5	0.4	0.24	2
195	14 23 50 101 113 123 139 145	0		layer	cultivation		0			2
196		196		cut	pit		0.8	0.54	0.34	3
197		196		fill	pit		0			3
198		198		cut	pit		0.65	0.41	0.26	0
199		198		fill	pit		0			0
200		142		fill	well		0		1.22	2
201		142		fill	well		0		1.4	2
202		142		fill	well		0		1.6	2
203		142		fill	well		0		0.75	2
204		142		fill	well		0		1.9	2
206		142		fill	well		0			2
207		142		fill	well		0		0.4	2
208		142		fill	well		0		0.38	2
209		210		fill	pit		1.15	0.95	0.29	1
210		210		cut	pit		1.15	0.95	0.29	1
211		212		fill	post hole	Building 1	0.45	0.42	0.12	1
212		212		cut	post hole	Building 1	0.45	0.42	0.12	1
213		214		fill	post hole	Building 1	0.35	0.34	0.17	1
214		214		cut	post hole	Building 1	0.35	0.34	0.17	1
215		216		fill	post hole		0.37	0.35	0.21	0
216		216		cut	post hole		0.37	0.35	0.21	0
217		185		fill	well		0		0.2	3
218		219		fill	post hole		0.7	0.6	0.2	2
219		219		cut	post hole		0.7	0.6	0.2	2
220		225		fill	pit		1.7		0.68	3
221		225		fill	pit		1.7		0.3	3
222		225		fill	pit		0		0.24	3
223		225		fill	pit		0		0.26	3
224		225		fill	pit		0		0.04	3
225		225		cut	pit		1.7		1.35	3
226		229		fill	post hole		0.24		0.1	2
227		229		fill	post hole		0.26		0.05	2
228		229		fill	post hole		0.3		0.28	2
229		229		cut	post hole		0.3		0.3	2
230	300	0		layer	floor	Building 2	2.3	2	0.08	1

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
231		0		layer	floor	Building 2	1.3	1.2	0.02	1
232		0		layer	floor	Building 2	1.8	1.5	0.04	1
233		0		layer	levelling		1.8	1.5	0.05	1
234		235		fill	hearth	Building 2	0.9	0.3	0.03	1
235		235		cut	hearth	Building 2	0.9	0.38	0.17	1
236		235		fill	hearth	Building 2	0	0.32	0.03	1
237		235		fill	hearth	Building 2	0	0.37	0.05	1
238		235		fill	hearth	Building 2	0	0.29	0.04	1
239		235		fill	hearth	Building 2	0	0.23	0.02	1
240		240		cut	pit	quarry	0	1	1.7	3
241		240		fill	pit	quarry	0		0.12	3
242		240		fill	pit	quarry	0		0.51	3
243		240		fill	pit	quarry	0		0.88	3
244		240		fill	pit	quarry	0		1.7	3
245	253	245		cut	ditch	Enclosure	0	0.47	0.33	1
246		245		fill	ditch	Enclosure	0	0.47	0.33	1
247		247		cut	pit		0.7		0.2	2
248		247		fill	pit		0.7		0.2	2
249		249		cut	ditch		0	0.82	0.34	1
250		249		fill	ditch		0	0.82	0.34	1
251		252		fill	pit		1.45	1.1	0.86	1
252		252		cut	pit		1.45	1.1	0.86	1
253		253		cut	ditch	Enclosure	0	0.4	0.36	1
254		253		fill	ditch	Enclosure	0	0.4	0.36	1
255		256		fill	post hole		0.3		0.21	0
256		256		cut	post hole		0.4	0.3	0.21	0
257		260		fill	pit		0	0.5	0.16	1
258		260		fill	pit		0	0.5	0.61	1
259		260		fill	pit		0	0.56	0.1	1
260		260		cut	pit		1.07	0.56	0.76	1
261		261		cut	ditch	Enclosure	0	0.6	0.13	0
262		261		fill	ditch	Enclosure	0	0.6	0.13	0
263	335 349 366	263		cut	ditch	Enclosure	0	0.92	0.3	1
264		263		fill	ditch	Enclosure	0	0.92	0.3	1
265	141 352 359	265		cut	pit	quarry	3.32		2.42	2
266		265		fill	pit	quarry	3.32		0.42	2
267		0	23	layer	levelling		0		0.23	3
268		0	23	layer			0			3
269		271		fill	pit		0		0.4	1
270		271		fill	pit		0		0.2	1
271		271		cut	pit		0.8		0.45	1
272		273		fill	pit		0		0.2	1
273		273		cut	pit		0.55	0.5	0.2	1
274		274		cut	pit		1.36	0.85	0.59	3
275		274		fill	pit		1.36	0.85	0.59	3
276		271		fill	pit		0		0.15	1
277		278		fill	?pit		0.7		0.2	0
278		278		cut	?pit		0.7		0.2	0
279		291		masonry	?latrine	building	1.4	1.2	0.78	1

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
280		0		layer			0		0.1	3
281		265		fill	pit	quarry	2.7	1.1	0.18	2
282		265		fill	pit	quarry	2.82	1.2	0.36	2
283		291		fill	?latrine	building	0	0.84	0.35	1
284		291		fill	?latrine	building	0	0.88	0.3	1
285		291		fill	?latrine	building	0	0.68	0.12	1
286		0		layer	?floor	building	0.75	0.15	0.13	1
287		288		fill	pit		0		0.4	3
288		288		cut	pit		1.04		0.29	3
289		288		fill	pit		0		0.12	3
290		291		fill	?latrine	building	0	0.8	0.48	1
291		291		cut	?latrine	building	1.2		1.06	1
292		293		fill	pit	?quarry	1.6	1.5	0.95	3
293		293		cut	pit	?quarry	1.6	1.5	0.95	3
294		294		fill/cut	drain		0	0.5		3
295		296		fill	construction cut	structure	1.8	0.3	0.6	3
296		296		cut	construction	structure	1.8	0.3	0.6	3
297		252		fill	pit		0			
298		299		fill	construction	building	3	0.4	0.26	1
299		299		cut	construction	building	3	0.4	0.26	1
300	230	0		layer	floor	building	1.8	1	0.1	1
301		299		masonry	wall	building	3.75	0.86	0.38	1
302		302	25	cut	drain		0		0.4	3
303		302	25	fill	drain		0		0.04	3
304		302	25	fill	drain		0		0.28	3
305		302	25	masonry	drain		0	0.2	0.2	3
306		0	25	masonry	drain		0	0.18	0.18	3
307		0	24	layer			0		0.12	3
308		0	24	layer			0		0.08	3
309		0	24	layer			0		0.1	3
310		0	24	layer			0		0.1	3
311		0	26	fill	cellar	building	0		0.48	3
312		0	26	masonry	cellar	building	1.3	0.113	0.45	3
313		0	26	masonry	cellar	building	1.7	0.23	1	3
314	230	0		layer	floor	building	0		0.02	1
315		315		cut	pit		0		0.38	1
316		315		fill	pit		0		0.38	1
317		317		cut	?pit ?ph		0.42		0.22	1
318		317		fill	?pit ?ph		0		0.22	1
319		319		cut	?pit?ph		0.36		0.18	1
320		319		fill	?pit ?ph		0		0.18	1
321		0	24	layer			0			3
322		323	24	fill	drain	sewer	0	0.6	1	3
323	384	323	24	cut	drain	sewer	0	0.6	1	3
324		0	26	masonry	wall	building	1	0.27		3
325		0	27	layer			0.86	0.56	0.21	3
326		0		masonry	wall	building	5	0.3	0.2	3
327		329		fill	construction	building	0	0.86	0.38	1
328		329		fill	construction	building	0	0.7	0.08	1

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
329	299	329		cut	construction	building	3.75	0.86	0.38	1
330	1120	0		masonry	wall	building	0	0.11		3
331		0		masonry	wall	20th cent building	5.4	0.45		3
332		0		masonry	floor	building	0.75	0.3		3
333		265		fill	pit	quarry	3	1.25	0.45	2
334		0		layer			0.86	0.56		3
335	263 349 366	335		cut	ditch	boundary	7.15	0.7	0.36	1
336		336		cut	?pit		0.6	0.4	0.36	2
337		337		cut	pit		2.2	1.3	0.4	1
338		337		fill	pit		2.2	1.3	0.4	1
339		339		cut	pit		0.9		0.39	1
340		339		fill	pit		0		0.39	1
341		288		fill	pit		0		0.14	3
342		265		fill	pit	quarry	2.95	1.15	1	2
343		265		fill	pit	quarry	1.6	1.03	0.32	2
344		335		fill	ditch	boundary	0	0.7	0.36	1
345		336		fill	?pit		0.6	0.4	0.36	2
346		265		fill	pit	quarry	1.44	1.1	0.12	2
347		349		fill	ditch	boundary	0	0.72	0.16	1
348		349		fill	ditch	boundary	0	0.6	0.22	1
349	263 335 366	349		cut	ditch	boundary	6	0.72	0.38	1
350		350		cut	post hole		0.45	0.37	0.15	1
351		350		fill	post hole		0.45	0.37	0.15	1
352	141 265 359	352		cut	pit	quarry	5		0.5	2
353		352		fill	pit	quarry	0		0.5	2
354		0		layer			0	0.13	0.12	1
355		357		fill	pit		1		0.8	3
356		357		fill	pit		0		0.8	3
357		357		cut	pit		1.75	0.8	0.8	3
358		359		fill	pit	quarry	0			2
359	141 265 352	359		cut	pit	quarry	0			2
360		0		fill	cellar	building	0			3
361		361		cut	pit		1.7	0.9	0.48	1
362		361		fill	pit		0.9	0.9	0.12	1
363		361		fill	pit		1	0.9	0.11	1
364		361		fill	pit		1.1	0.9	0.12	1
365		361		fill	pit		0		0.22	1
366	263 335 349	366		cut	ditch	boundary		0.92	0.42	1
367		366		fill	ditch	boundary	0		0.3	1
368		366		fill	ditch	boundary	0		0.42	1
369		265		fill	pit	quarry	0	1.18	0.6	2
370		265		fill	pit	quarry	0	0.85	0.25	2
371		372		fill	pit		1.34	1.2	1.42	3
372		372		cut	pit		1.34	1.2	1.42	3
373		374		fill	pit		2.5	1.3	1.26	3
374		374		cut	pit		2.5	1.3	1.36	3
375		375		cut	pit		1.14	0.65	0.92	1
376		375		fill	pit		1.12	0.65	0.4	1

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
377		375		fill	pit		0.9	0.65	0.36	1
378		375		fill	pit		1.14	0.65	0.48	1
379		379		cut	pit		1.12	0.46	0.72	1
380		379		fill	pit		1.12	0.46	0.46	1
381		379		fill	pit		1.12	0.46	0.32	1
382		382		cut	pit	quarry	1.35	0.9	1.02	2
383		382		fill	pit	quarry	1.35	0.9	1.02	2
384	323	384		cut	drain	sewer	0	0.6	1.26	3
385		384		fill	drain	sewer	0	0.6	0.7	3
386		450		masonry	latrine		3.6	1.5	1.8	2
387		450		fill	latrine		2.64	0.9	1.04	2
388		388		cut	pit		0.6	0.5	0.32	3
389		388		fill	pit		0.6	0.5	0.32	3
390		390		cut	pit		0.8	0.5	0.6	0
391		390		fill	pit		0.8	0.5	0.6	0
392		0		fill	latrine		0	0.5	0.4	2
393		452		fill	pit		1	0.8	0.4	3
394		453		fill	pit		0	0.5	0.36	2
395		0		fill	latrine		0	0.5	0.26	2
396		453		fill	pit		0	0.42	0.44	2
397		0		layer			0.8	0.8	0.14	3
398		0		layer			2	2	0.2	3
399		399		cut	pit		0.8	0.76	0.62	2
400		399		fill	pit		0.8	0.76	0.62	2
401		401		cut	pit		1.36	1.2	0.73	3
402		401		fill	pit		1.36	1.2	0.38	3
403		401		fill	pit		1.36	1.2	0.4	3
434		384		fill	drain	sewer	0	0.5	0.6	3
435		452		fill	pit		1.3	0.8	0.4	3
436		436		fill/cut	pit		0		0.5	1
437		437		cut	pit		1.5	0.98	0.46	3
438		437		fill	pit		1.5	0.98	0.46	3
439		439		cut	drain		2	0.42	0.66	3
440		439		fill	drain		2	0.42	0.66	3
441		441		cut	pit	?quarry	1.7	1.2	0.62	1
442		441		fill	pit	?quarry	1.7	1.2	0.62	1
443		443		cut	pit	?quarry	1.25	1.25	0.88	1
444		443		fill	pit	?quarry	1.25	1.25	0.16	1
445		445		cut	pit	?quarry	0.85	0.5	1.1	1
446		445		fill	pit	?quarry	0.55	0.4	0.3	1
447		445		fill	pit	?quarry	0.85	0.5	0.58	1
448		450		fill	latrine		1.2	1	0.1	2
449		450		fill	latrine		1.2	0.8	0.26	2
450		450		cut construction	latrine		3.6	1.5	0.9	2
451		450		fill construction	latrine		3.6	1.5	0.9	2
452		452		cut	pit		1.3	0.8	0.4	3
453		453		cut	pit		0		0.8	2
454		450		fill	latrine		0	0.7	0.12	2
455		450		fill	latrine		0	0.7	0.2	2

Ctxt	Same as	Cut	Tpit	Category	Feature Type	Function	Lth	Bth	Dpth	Ph
456		450		fill	latrine		0	0.7	0.54	2
457		457		cut	post hole	structure	0.3			3
458		457		fill	post hole	structure	0.3			3

Table 6: *Context list*

Appendix B. Finds Reports

B.1 Small finds (coins, metal and miscellaneous)

By Nina Crummy

Introduction and methodology

B.1.1 The assemblage is dominated by ironwork, most of it from the Period 2 quarry pit (**265**). Copper-alloy and bone objects are very scarce, but again many are from (**265**). The objects are catalogued and discussed below by Period. Within Periods 2 and 3 they are grouped by function, based on the categories defined in Crummy 1988 and Rees *et al.* 2008.

Period 1

B.1.2 Only a scatter of objects came from Period 1 features and none can be closely dated. All are iron apart from three fragments of copper-alloy sheet from a post hole in Building 1 (SF 104). A knife fragment came from post hole (**350**) (SF 97). The remaining items are nails and scrap sheet. The low number of items argues for the area being waste or garden ground. To this group can be added an unusual unstratified buckle with an inverted U-shaped hook (SF 100). The hook was probably used much like a strap-guide to hold the belt level as it engaged with the buckle tongue. The buckle can be dated to the medieval period and assigned a monastic context at Barnwell Priory by two U-shaped hooks with writhen knops from similar buckles, previously thought to derive from tap keys. One came from Whitefriars, Norwich, and the other from Colliton Park, Dorchester, close to the 14th-century Hospital of St John the Baptist (Crummy 2007, SF 396; Durham and Fulford 2014, 1, 332). The narrowness of the Cambridge buckle suggests that they all came from book-straps.

SF 100. (99999), unstratified. Copper-alloy buckle composed of three cast elements: a rectangular frame, a tongue, and extended hinge bar that doubles as a strap retainer. At the rear the frame has a narrow slot for the strap, while the front is longer and has a thickened bar with recess for the tongue and rebated front edge. The tongue is short but has a stout pivot, rounded at the front and flat at the back, and notched on each side near the front edge. A U-shaped hook is housed within the hinge; it varies in section, round and narrow where it passes through the pivot and is riveted against the opposite edge of the frame, polygonal below the frame and tapering as it curves round to rise in front of it, where it terminates in a writhen knop. Total length 36 mm, total width 37 mm; frame 28 by 18 mm. Illustration recommended

SF 97. (351), fill of post hole (**350**). Period 1. Iron knife blade fragment, the back and edge are straight and parallel, the latter rising to the tip. Length 61 mm, width 19 mm.

SF 104. (213), post hole cut (**214**), Building 1. Period 1. Three copper-alloy sheet fragments. 19 by 10 mm, 16 by 10 mm, 8 by 5 mm.

SF 65. (338), fill of pit **337**. Period 1. Iron sheet fragment. 41 by 27 mm.

SF no	Context	Context details and phasing	Description	Length (mm)
37	378	Fill of pit (**375**). Period 1.	flat round head, incomplete	48
38	378	Fill of pit (**375**). Period 1.	shank fragment, curved	34
90	381	Fill of pit (**379**). Period 1.	shank fragment	20
52	442	Fill of? quarry pit (**441**). Period 1.	flat round head, complete, clenched	3
70	442	Fill of? quarry pit (**441**). Period 1.	flat round head, incomplete	30
64	264	Fill of? enclosure ditch (**263**). Period 1.	flat round head, complete, shank bent	56

88	264	Fill of? enclosure ditch (**263**). Period 1.	shank fragment	60
94	264	Fill of? enclosure ditch (**263**). Period 1.	shank fragment	31

Table 7 *Iron nails. Nails are incomplete unless otherwise stated*

Period 2

B.1.3 The majority of objects from the Period 2 were in the fill of quarry pit (**265**), with a few others coming from other pits, well (**142**), latrine (**450**) and the cultivation layer (195). As with Period 1 most of the pieces are metal and iron predominates over copper alloy, but there is also a wide range of other materials, including stoneware, ivory and bone. Similarly, the objects represent a wide range of functional groups, from dress accessories to structural fittings. Most are common forms and cannot be very closely dated, but the items that probably predate the start of Period 2 include a Nuremberg jetton (SF 1) of early 16th-century date and a bone tuning peg from a musical instrument that is a common medieval form (SF 73), as are parts of two barrel padlocks (SF 114 and SF 106, not illustrated). A Raeren stoneware spindlewhorl (SF 9) may also be residual in Period 2 as it belongs to a type imported in some numbers into eastern Britain in the late 15th and 16th centuries (Hurst *et al.* 1986, 206; Crummy 1988, 30, 32; Gaimster 1997, 89, 225). Many other undatable pieces among the iron tools, structural fittings and miscellaneous scrap may also be residual, but a one-piece ivory comb from the quarry pit is a type that belongs within the date-range of Period 2 and so argues for at least some of the assemblage also to be post-medieval.

B.1.4 Although a wide variety of functions are represented here, the number of dress accessories is low and the high proportion of iron objects and scrap ironwork point to a working environment, perhaps with some dumping of demolition materials from wooden buildings.

B.1.5 Dress accessories

SF 86. (449), fill of latrine (**450**). Period 2. Small wire ring with twisted join. Diameter 8 mm.

SF 84. (281), fill of quarry pit (**265**). Period 2. Small copper-alloy pin with wound wire head. Length 27 mm.

SF 85. (394), fill of pit (**453**). Period 2. Small copper-alloy pin with wound wire head. Length, incomplete, 18 mm.

SF 20. (266), fill of quarry pit (**265**). Period 2. Copper-alloy lace tag with riveted top. Length 23 mm.

B.1.6 Toilet instrument

SF 36. (282), fill of quarry pit (**265**). Period 2. Ivory comb fragment with plain straight terminal and broad central panel. The surviving teeth, narrow one side and broad on the other, show little sign of wear. Width 83 mm, surviving length 23 mm, 2.5 mm thick. Illustration recommended

B.1.7 Fibre processing equipment

SF 9. (195), cultivation layer. Period 2. Raeren stoneware spindlewhorl with grooved girth. There is some sign of wear around the spindle hole, and a large part of the glaze has cracked away on one side. Height 23 mm, diameter 33 mm, diameter of spindle hole 10 mm.

B.1.8 Household equipment

SF 2. (99999), unstratified. Copper-alloy drape ring of flattened polygonal section, worn thin on one side. Diameter 24 mm.

SF 106. (165), fill of well (**142**). Period 2. Fragment of the case of a brass barrel padlock, with external rib. Length 50 mm, maximum surviving diameter 23 mm. Illustration recommended

SF 114. (266), fill of quarry pit (**265**). Period 2. Iron barrel padlock case, with a detached fragment. The case is much decayed, but fragments of applied strips passing both around and along it remain. The internal fittings of the padlock are missing. Length 112 mm, diameter 54 mm. Illustration recommended

SF 7. (195), cultivation layer. Period 2. Iron lock bolt fragment, with a notch on one side to act as a catch (Egan 1998, 110). Length 76 mm. Illustration recommended

B.1.9 Recreation

SF 73. (281), fill of quarry pit (**265**). Period 2. Bone tuning peg from a stringed instrument, round and tapering for most of its length and pierced to take the string at the narrow end, but with a tapering square grip at the other. Length 54 mm, section diameter tapering from 5 to 3.5 mm, grip tapering from 5 to 4 mm square. Illustration recommended

SF 18. (266), fill of quarry pit (**265**). Period 2. Lathe-turned bone counter with the upper face decorated by three concentric grooves around a sunburst radiating from a central hole; the underside is plain. Made from a long bone, with characteristic slight chamfer on the edge and part of the marrow cavity running across the base. Diameter 27 mm, 6 mm thick. Illustration recommended

B.1.10 Commerce

SF 1. (195), cultivation layer. Period 2. Copper-alloy Nuremberg rose/orb jetton. Obverse, three lis and three crowns around a rose. Reverse, small orb (*Reichesapfel*) within a tressure. The legends appear to be illiterate. Diameter 25 mm; weight 1.57 g.

B.1.11 Transport

SF 74. (281), fill of quarry pit (**265**). Period 2. Iron buckle with rhomboidal frame; tongue missing. Length 61 mm, width 33-45 mm. Illustration recommended

B.1.12 Tools

SF 72. (282), fill of quarry pit (**265**). Period 2. Fragment from a polygonal bone handle, decorated on one face with a line of ring-and-dots. The same face has a patch of staining from an iron rivet used to secure the tang. Length 61 mm, surviving width 12 mm. Illustration recommended

SF 34. (266), fill of quarry pit (**265**). Period 2. Point from an iron blade with straight back and rising edge. Length 59 mm, width 24 mm.

SF 67. (282), fill of quarry pit (**265**). Period 2. Iron knife fragment with curved or bent tang, and a separate blade fragment. The back and edge of the narrow blade fragment are straight and parallel, the tip is missing; possibly a craft tool.. Lengths 77 mm, 59 mm. Illustration recommended

SF 35. (266), fill of quarry pit (**265**). Period 2. The tip of a narrow iron knife blade, with straight back and a straight edge that rises to the tip. Length 57 mm, width 11 mm. Illustration recommended

SF 60. (342), fill of quarry pit (**265**). Period 2. Iron chisel fragment with rounded edge. Length 72 mm, section 18 by 13 mm. Illustration recommended

SF 76. (281), fill of quarry pit (**265**). Period 2. Iron knife blade fragment, the back and edge are straight and parallel. Length 72 mm, width 17 mm.

B.1.13 *Fittings*

SF 21. (266), fill of quarry pit (**265**). Period 2. Fragment of a copper-alloy boss with flanged rim and crushed domed centre. There is a small off-centre rectangular hole for attachment in the top. Diameter 25 mm, height 5 mm.

SF 50. (387), fill of latrine (**450**). Period 2. Iron staple, missing the tip of each arm. Length 78 mm, width 37 mm.

SF 113. (266), fill of quarry pit (**265**). Period 2. Iron staple, missing the end of one arm. Length 58 mm, width 32 mm.

SF 6. (195), cultivation layer. Period 2. Iron strap fragment with a nail hole near one end. Length 100 mm, width 35 mm.

SF 49. (387), fill of latrine (**450**). Period 2. Iron bar fragment, rectangular in section, with semicircular suspension loop. Length 95 mm, section 10 by 12 mm, loop 46 by 36 mm.

SF 82. (281), fill of quarry pit (**265**). Period 2. Iron holdfast with round flat head and lozenge-shaped rove. Length 59 mm, rove 35 by 31 mm.

SF 30. (282), fill of quarry pit (**265**). Period 2. Iron rove from a holdfast, 23 mm square.

SF 57. (387), fill of latrine (**450**). Period 2. Iron split-spike-loop fragment, missing one arm. Length 118 mm, width at head 18 mm.

SF 66. (195), cultivation layer. Period 2. Iron clamp with discoid head at right angles to the shank. Length 49 mm, head 28 by 23 mm.

SF 80. (281), fill of quarry pit (**265**). Period 2. Iron hinge pivot (pintle), missing most of the square-section attachment spike. Length of pivot 72 mm, surviving length of spike 23 mm.

SF 46. (400), fill of pit (**399**). Period 2. Tapering rectangular-section iron bar or shank fragment, possibly a key handle. Length 97 mm, section 17 by 11 mm.

SF no	Ctxt	Context details and phasing	Description	Length (mm)
10	195	Cultivation layer. Period 2.	2 x flat round head, complete (1 clenched); flat round head	47, 32 (clenched), 32
11	195	Cultivation layer. Period 2.	2: flat square head; shank fragment	46; 67
12	195	Cultivation layer. Period 2.	2 shank fragments	37×2
45	400	Fill of pit (**399**). Period 2.	flat round head, complete	54
91	394	Fill of pit (**453**). Period 2.	flat round head. complete	42
108	394	Fill of pit (**453**). Period 2.	flat square head, incomplete	31
61	333	Fill of quarry pit (**265**). Period 2.	5: 3 x flat round head, complete; 2 shank fragments	56, 53, 52; 77, 64
22	266	Fill of quarry pit (**265**). Period 2.	5 x flat round head, complete; 2 x flat round head: shank fragment	49, 48×2 (1 x inc.), 40×2 (1 x inc.) 37, 34; 40
32	266	Fill of quarry pit (**265**). Period 2.	5 x flat round head, complete (1 clenched); 6 x flat round head	64, 50, 44, 42, 35 (clenched); 45, 43×2, 42, 39, 30
77	281	Fill of quarry pit (**265**). Period 2.	shank fragment	90
78	281	Fill of quarry pit (**265**). Period 2.	3 shank fragments	137, 112, 106
79	281	Fill of quarry pit (**265**). Period 2.	t-shaped head, incomplete	95
81	281	Fill of quarry pit (**265**). Period 2.	flat round head, complete x 4; 7 x flat round head, incomplete; 19 shank fragments	67, 61, 46, 44; 59×2, 54, 52, 45×2, 30; 59, 48, 44, 43, 42, 38, 37, 36, 35, 34, 31, 30×2, 27, 26, 22×2, 21, 19, 15
89	281	Fill of quarry pit (**265**). Period 2.	flat round head, complete; shank fragment	61; 37
95	281	Fill of quarry pit (**265**). Period 2.	2 shank fragments (1 clenched)	35, 30 (clenched)
29	282	Fill of quarry pit (**265**). Period 2.	3 x flat round head, complete (1 clenched); 2 x flat round head; 5 shank fragments	53, 51, 36 (clenched); 67×2; 72, 55, 53, 43, 41
58	342	Fill of quarry pit (**265**). Period 2.	flat round head, complete, clenched	34
39	387	Fill of latrine (**450**). Period 2.	flat round head, tip missing	65
92	387	Fill of latrine (**450**). Period 2.	flat round head, incomplete, x 2; 4 shank fragments (2 clenched)	35, 27; 17 (clenched), 16 (clenched), 15×2
93	449	Fill of latrine (**450**). Period 2.	flat round head, complete	53

Table 8: *Iron nails. Nails are incomplete unless otherwise stated*

B.1.14 Agriculture

SF 8. (195), cultivation layer. Period 2. Iron strip fragment, with one end twisted at right angles to the other; possibly part of a rake prong? Length 75 mm.

B.1.15 Metal-working

SF 3. (195), cultivation layer. Period 2. Sheet copper-alloy offcut, curved inwards at each end. Length 56 mm, maximum width 9 mm.

B.1.16 Bone-working

Fig. 000, SF 99. (449), fill of latrine (**450**). Period 2. Small offcut from a ?scapula, with three more or less parallel grooves on one face, a fourth angling to meet them, and all four crossed by a fifth. 33 by 20 mm, 3 mm thick.

B.1.17 Miscellaneous

SF 109. (394), fill of pit (**453**). Period 2. Iron bar fragment. Length 69 mm, section 15 by 11 mm.

SF 55. (449), fill of latrine (**450**). Period 2. Tongue-ended iron strap fragment, with nail hole for attachment. Length 46 mm, width 21 mm.

SF 40. (387), fill of latrine (**450**). Period 2. Iron strip fragment. Length 68 mm, width 15 mm.

SF 28. (282), fill of quarry pit (**265**). Period 2. Copper-alloy sheet fragment. 23 by 20 mm.

SF 102. (342), fill of quarry pit (**265**). Period 2. Copper-alloy shallow U-section strip fragment. Length 50 mm, maximum width 8 mm.

SF 23.(266), fill of quarry pit (**265**). Period 2. Iron sheet fragment. 93 by 37 mm.

SF 31. (282), fill of quarry pit (**265**). Period 2. Iron sheet fragment. 37×32 mm.

SF 56. (342), fill of quarry pit (**265**). Period 2. Iron sheet fragment, slightly convex in section. 47 by 29 mm.

SF 75. (281), fill of quarry pit (**265**). Period 2. Iron sheet fragment. 78 by 35 mm.

SF 83. (281), fill of quarry pit (**265**). Period 2. Iron sheet fragment. 87 by 69 mm.

SF 96. (281), fill of quarry pit (**265**). Period 2. Iron sheet fragment. 60 by 46 mm.

SF 24. (266), fill of quarry pit (**265**). Period 2. Tongue-ended iron strap fragment, with nail hole for attachment. Length 72 mm, width 23 mm.

SF 25. (266), fill of quarry pit (**265**). Period 2. Tapering iron strip fragment. Length 47 mm, maximum width 20 mm.

SF 33. (266), fill of quarry pit (**265**). Period 2. Iron strip fragment. Length 50 mm, width 23 mm.

SF 69. (266), fill of quarry pit (**265**). Period 2. Iron strip fragment. Length 37 mm, width 15 mm.

SF 112. (266), fill of quarry pit (**265**). Period 2. Iron strip fragment. Length 45 mm, width 33 mm.

SF 59. (282), fill of quarry pit (**265**). Period 2. Two iron strip fragments. 1) Length 83 mm, width 16 mm. 2) Length 49 mm, width 18 mm.

SF 68. (282), fill of quarry pit (**265**). Period 2. Iron strip fragment, narrowing to a blunt point at the surviving end. Length 114 mm, maximum width 13 mm.

SF 57. (342), fill of quarry pit (**265**). Period 2. Iron strip fragment tapering to a blunt terminal. Length 59 mm, width 15 mm.

SF 71. (282), fill of quarry pit (**265**). Period 2. Amorphous iron fragment with a narrow copper-alloy strip embedded in one end. 65 by 32 by 22 mm.

SF 110. (266), fill of quarry pit (**265**). Period 2. Amorphous iron fragment. 40 by 23 by 15 mm.

SF 111. (266), fill of quarry pit (**265**). Period 2. Amorphous iron fragment. 40 by 27 by 17 mm.

Period 3 and unstratified coin

B.1.18 Although small, the Period 3 assemblage is of very different character to those of the preceding Periods. The majority of objects are of copper-alloy rather than iron and the items have a domestic slant, such as an early modern dress clip (SF 307), a possible clock part (SF 115), and part of a fork from a carving set (SF 98).

B.1.19 Dress

SF 307. (311), cellar fill. Period 3. Small copper-alloy ornament consisting of an opaque white glass intaglio bearing a design of a three-petalled flower on a short stem with two leaves, set into a copper-alloy frame with grooved edge. A hinged copper-alloy clip is attached to the underside of the frame. Height 16 mm, width 14 mm.

SF 101. (307), Layer. Period 3. Small copper-alloy pin with wound wire head. Length 27 mm.

SF 14. (221), fill of pit (**225**). Period 3. Small copper-alloy four-hole button with dished top. Diameter 12 mm.

B.1.20 Household

SF 98. (220), fill of pit (**225**). Period 3. Fragment of a fork from a carving set, consisting of a round iron shank tapering to a crossbar with two wide-set prongs. Length 68 mm.

B.1.21 Commerce

SF 13. (220), fill of pit (**225**). Period 3. Copper-alloy George III halfpenny, dated 1806. Obverse: GEORGIVS III D. G. REX, laureate and draped bust right, in exergue 1806. Reverse obscured by corrosion. Diameter 28 mm.

B.1.22 Fittings

SF 115. (402), fill of pit (**401**). Period 3. Copper-alloy square-section handle, slightly flattened and pierced at the upper end and split to form a stirrup attachment at the lower end. The end of each prong is damaged and stained by iron corrosion. Length 301 mm, section 3 mm square, length of fork 27 mm. Possibly a clock pendulum rod or similar mechanical part.

SF 105. (355), fill of pit (**357**). Period 3. Copper-alloy lock-plate fragment, broken across the hole for a small rotary key. There are three attachment holes along the lower edge. 85 by 58 mm.

SF 27. (275), fill of pit (**274**). Period 3. Iron door latch with narrow escutcheon and semicircular case housing the mechanism. Height 98 mm, width 26 mm, depth 43 mm.

SF no	Ctxt	Context details and phasing	Description	Length (mm)
62	129	Levelling layer. Period 3.	flat square head, incomplete	25
63	63	Fill of drain (**62**). Period 3.	2 shank fragments	21×2
87	157	Fill of pit (**158**). Period 3	flat round head	27

Table 9: *Iron nails. Nails are incomplete unless otherwise stated*

B.1.23 Miscellaneous

SF 103. (403), fill of pit (**401**). Period 3. Small copper-alloy tube fragment, crushed at one end. Length 16 mm, maximum diameter 5 mm.

SF 15. (221), fill of pit (**225**). Period 3. Iron strip fragment. Length 205 mm, width 22 mm.

B.2 Metalworking Debris

By Sarah Percival

Introduction and methodology

B.2.1 A total of 226 pieces weighing 17,164g were collected from fourteen excavated contexts (Table 10). The assemblage comprises medieval smithing slag, miscellaneousness iron slag, possible iron smithing slag and a small quantity of copper rich material from post medieval contexts and miscellaneous ferrous slag from modern contexts.

B.2.2 The complete assemblage was recorded by type by context. The MWD was scanned with a magnet to establish the presence of iron and was counted and weighed to the nearest whole gram.

Period	Feature	Feature Type	Context	Material	Type	Form	Nos	Wt (g)
Medieval	**265**	Pit	343	Iron	Smithing	Miscellaneous	1	50
	291	?Latrine	290	Iron	Smithing	Hearth base?	1	20
	337	Pit	338	Iron	Smithing	Miscellaneous	1	10
	379	Pit	381	Iron	Smithing	Miscellaneous	1	80
Medieval/post medieval	**142**	Well	166	Cinder	Miscellaneous	Cinder or clinker	1	10
				Iron	Miscellaneous	Miscellaneous	1	20
	265	Pit	342	Iron	Smithing	Miscellaneous	5	310
	375	Pit	378	Iron	Smithing	Miscellaneous	1	130
Post medieval	**195**	Cultivation	195	Iron	Smithing	Miscellaneous	2	420
	135	Ditch	136	Cinder	Miscellaneous	Cinder or clinker	1	50
	265	Pit	266	Copper	Miscellaneous	Casting?	1	30
				Iron	Miscellaneous	Miscellaneous	2	30
					Smithing	Miscellaneous	60	4630
			281	Cinder	Miscellaneous	Miscellaneous	3	10
				Iron	Miscellaneous	Miscellaneous	1	20
							93	7360
			282	Iron	Smithing	Miscellaneous	26	2450
			333	Copper	Miscellaneous	Casting?	3	200
				Iron	Smithing	Miscellaneous	18	1020
	399	Pit	400	Iron	Smithing	Miscellaneous	1	240
	441	Pit	442	Clinker	Miscellaneous	Miscellaneous	1	4
Modern	**230**	Floor	230	Iron	Miscellaneous	Miscellaneous	1	20
	357	Pit	355	Iron	Smithing?	Miscellaneous	1	50
Total							226	17164

Table 10: *Quantity and weight of metalworking debris by period and feature*

Nature of the Assemblage

B.2.3 Four pieces of iron smithing slag weighing 160g were collected from four medieval features (Table 10). This includes a piece of smithing hearth base with sand adhering to the base from the fill of possible toilet 291.

B.2.4 Medieval/post medieval and post medieval contexts produced 220 pieces weighing 16,934g. The majority of this material is miscellaneous ferrous slag including possible smithing slag. A small quantity of copper working debris was also found, probably casting waste though the material is not especially diagnostic. Pieces of clinker or fuel ash were also found, these being vesicular, light weight and crumbly. No hearth material was recovered and none of the metalworking debris was found in association with

structures. Most of the assemblage came from pit fills and in particular the fills of pit 265 which contained 213 pieces weighing 16,110g mostly ferrous working debris.

B.2.5 Two pieces of miscellaneous iron slag weighing a total of 70g came from modern features.

Discussion

B.2.6 The metal working debris assemblage is largely undiagnostic and undatable being mostly comprised of undiagnostic ferrous slag and miscellaneous iron smithing debris. Almost all of this debris was recovered from contexts which contained post medieval pottery with most being recovered from a single feature, pit **265**.

B.2.7 The small assemblage from contexts containing medieval pottery includes the only evidence of a smithing hearth base, though this is very small and redeposited.

B.2.8 The small quantity of copper-rich slag may result from copper casting however it could just as likely be the result of copper accidentally melted as part of waste on a domestic fire, bonfire or in a house fire, as no evidence for crucibles or moulds were found at the site.

Statement of Research Potential

B.2.9 This largely undiagnostic and redeposited assemblage is not closely datable and is not associated with any other evidence of metal working. It is therefore of limited research potential.

Further Work and Method Statement

B.2.10 A representative sample should be selected and retained for archive, no further work is recommended.

B.3 Worked Stone

By Ruth Shaffrey

Summary, quantification and methodology

B.3.1 A total of 14 pieces of worked stone were assessed. The stone was examined with the aid of a x10 magnification hand lens, weighed and measured, and recorded into an Access database.

Description

B.3.2 The assemblage comprises two fragments of lava rotary querns (232, 387), neither of which are diagnostic. A single fragment of polished marble floor tile (403) was also recovered. A pestle was found in context 292. Although this is of a similar lithology to some of the whetstones, the circular section and overall shape of the stone suggests it was used as a pestle. The rest of the assemblage consists of ten whetstones. Three are of Norwegian Rag (schist) –the most common medieval whetstone lithology. One of these is an apparently unshaped slab that has been utilised as a point sharpener (387). The other two examples re formed whetstones demonstrating very different use wear – one retains a rectangular cross section (244), whilst the other has been worn into a bulbous shape (387).

B.3.3 The remaining whetstones are made from fine grained and typically micaceous sandstone. These vary in size and shape but generally have square or rectangular cross-sections.

Catalogue of worked stone

Ctx	Cut/ Ph	Notes	Size	Lithology	Illust
403	Pit **401**/3	Floor Tile: Fragment of polished marble floor tile	Measures 26mm thick	White marble	No
387	Latr **450/** 2	Rotary Quern Fragment: No original edges and faces look damaged too – crudely tooled on both sides	Measurements are indeterminate	Lava	No
232	floor build2/ 1	Rotary Quern Fragment: No original edges survive so it is not possible to reconstruct dimensions. Deep parallel grooves on one side, rough on other	Measurements are indeterminate	Lava	No
292	Pit **293/** 3	Probable pestle – round wouldn't be an obvious shape for a whetstone. Both ends are damaged. Tapered so that diameter gradually increases along length. No obvious wear.	Measures >58mm x 37->41mm diameter	Medium grained grey micaceous sandstone	Yes
387	Latr **450/** 2	Complete wehtstone: Seems to have both original ends. Small whetstone with presumably originally square section but now heavily used to create one bulbous end, very thin in the middle, both into the faces and edges and roughly rectangular at the other end	Measures 90mm long x 18-23mm wide x 11-25mm thick	Norwegian Rag (grey)	Yes
244	Pit **240/** 3	Near complete Whetstone: Central portion of elongate whetstone with rectangular cross section. Has been used on all faces and lengthwise down one side to create a wide groove	Measures >105×18×19mm	Norwegian Rag (grey)	Yes
387	Latr **450** /2	Whetstone fragment: Slab of stone, not especially shaped but the naturally linear nature of the stone has been exploited to create grooves along the length of the stone, probably for sharpening small points. Broken at one end, probably original at other	Measures >133×62×22mm	Norwegian Rag (blue)	No
166	Well **142/** 2	Whetstone fragemtn: Sub-rectangular sectioned whetstone with one original end. Has fine grooves all over through use	Measures >75×28-35mm thick x 33->44mm wide	Medium grained grey micaceous sandstone	No
292	Quarry **293/** 3	Whetstone fragemnt: Probable end fragment of rectangular sectioned stone with smoothed faces	Measures > 52×31×42mm	Medium grained pink pure quartz sandstone	No
166	Well **142/** 2	Complete whetstone: Small with sub-square cross section. Most of the use is across one end which has created a distinct notched effect with U-shaped profile dip on both faces	Measures 81×26×29mm	Medium grained yellowish beige micaceous sandstone	Yes
454	Latr **450/** 2	Whetstone fragment: End fragment of rectangular sectioned whetstone – tapered along its length to the one surviving end. Arrises are slightly rounded and otherwise it has general wear	Measures >69×30/36 at broken end x 23/29 at surviving end	Fine grained grey micaceous sandstone	No
398	Layer/ 3	Wetstone fragment: End fragment of very neat very square sectioned whetstone. All surfaces are flat and smooth but the whetstone does not seem to show much wear – still very square	Measures >44×29×30.5	Sarsen?	No
387	Latr **450/** 2	Large Whetstone fragmetn: Broken at one end and looks to be part of a much longer whetstone. Sub-rectangular section. The tool has been used across all faces to create sharp arrises. The arrises have also been used in places.	Measures >204×39/47 at widest part and 20/31 at tip	Fine grained grey micaceous sandstone	NO

Table 11: *Catalogue of worked stone*

Statement of Potential

B.3.4 The assemblage has good potential to add to our understanding of the site. Tool sharpening was clearly a priority and the varying shapes indicate a range of different

tasks were being undertaken. The lava querns hint at a domestic element to the site, although neither have survived very well, so little can be determined about them.

Recommendations for further work

B.3.5 It is recommended that a report be written which describes the varying nature of the whetstones and their uses. Because of the small size of this assemblage, all items have been recorded at assessment stage, so no further recording is necessary. The marble floor tile will need to be compared to a marble reference collection or examined externally in order to identify it. The pestle will need properly describing however, and, as pestles are only infrequently recovered from the archaeological record, parallels should be sought for it. The varied nature of the assemblage, means that a total of four items have been selected for illustration. The assemblage will also need to be placed in the context of what is already known for the supply of whetstones to and their use in the town and local area.

B.4 Glass

by Carole Fletcher

B.4.1 Archaeological works produced a small-moderate assemblage of glass weighing 5.719kg, of which the majority is vessel glass, the bulk of which are natural black glass bottles (3.962kg). The glass is catalogued in Table 12.

Methodology

B.4.1 The glass was scanned and catalogued and weighed as individual vessels where possible. The glass that is not closely datable may be dated by association with the pottery and other material with which it was found. All dates given for the periods are those assigned by the excavator.

Assemblage

B.4.2 Levelling layer, evaluation context 24, produced two shards of glass, one a dark olive green shard from a cylindrical bottle, most likely 19th to early 20th century, and a 19th-century round, convex base from a blue-green (aqua) tinted mould-blown bottle, possibly a torpedo-shaped mineral water bottle. Two embossed letters survive on the glass, an upper-case 'C' and a lower-case 'o'.

Period 2 (*c.*1538-*c.*1800)

B.4.3 A single context from Period 2 produced a shard of what appears to be bottle glass, it is opaque and heavily patinated and may be 17th-early 18th century. The glass was recovered alongside pottery and dated to the 18th and 19th century, suggesting that this cultivation layer, context 195, may be contaminated with intrusive material from period 3.

Period 3 (*c.*1800+)

B.4.4 The majority of the glass assemblage was recovered from contexts dated to this period, and while every feature will not be discussed in this report, all the material recovered is detailed in the catalogue. The excavator has suggested some of the features may relate to properties that fronted Newmarket Road during this period and where possible, these features are discussed.

B.4.5 Pit **178**, it is suggested, pre-dates the 'Jolly Butchers', which was run as a butchers/pub, and produced a single shard from a clear, colourless press-moulded glass bottle.

Embossed writing survives on the bottle surface, the surviving letters are ATE DAIRIE, indicating it is most likely a milk bottle, although from which dairy it originated is unclear. The bottle most likely dates 20th century, and may be intrusive in the feature, which produced 19th-century ceramics.

B.4.6 Within the pub's courtyard lay three pits, **179**, which produced three shards of window glass, dating to the 19th-20th century, **225**, which produced 12 shards of glass, the majority of which were from natural black glass bottles including, neck, rim and base shards from a minimum of two cylindrical, natural black glass bottles, all of which appear to be 19th century. From pit **240**, was recovered a complete base and partial neck from a natural black glass bottle, also of 19th century date.

B.4.7 On the plot that originally housed the building owned by Mendicity was well **185**, whose fills, contexts 183 and 184 produced a moderately large assemblage of glass, weighing 1.250kg. Context 183 contained only a single shard of mid olive green glass from a cylindrical bottle of 19th-20th century date. However, context 184 contained the neck base and body shards from a minimum of three glass bottles, of these two are cylindrical natural black glass bottles whose features date them to the 19th century. The third bottle is a thin pale green, flat based, octagonal mould-blown bottle. The surface of the glass is uneven and somewhat pitted with what may be termed wattle marks which are the result of hot glass hitting the surface of the cold mould (Lindsey 2013). The bottle, like the pottery from the feature, dates to the 19th-century.

B.4.8 On the far southern area of the site were four pits **372**, **374**, **401**, and **437**, all contained small amounts of glass, these features may relate to the Jolly Butchers pub as pits **374** and **372**, which lie to the south of the pub, contained a number of clay pipes, yet very little glass. Pit **372** containing a small, roughly triangular shard of window glass that may be grozed and may be 18th-19th century; the pottery recovered from this feature dates to the 19th century. Pit **374** contained a partial base and body from an octagonal bodied, mould-blown bottle, the seam line of which can be clearly seen running across the base of the vessel. Like the pottery recovered from the feature, the bottle is 19th century in date.

B.4.9 Pit **401**, produced a relatively small assemblage of glass, which includes a near complete circular based, conical press-moulded bottle which bears a clear mould line across the base and sides and has an unfinished pontil mark on the base. The bottle is heavily patinated, but the embossing survives and clearly says DALBYS CARMINATIVE. Marketed as a medicinal product by James Dalby, of London, England from the late 1770's, its ingredients included opium (Wikipedia 2014). It was among the most widely used patented medicine given to infants and children in England and the United States during the latter years of the 18th and early part of the 19th century. (T.E.C. Jr. 2014).

B.4.10 Pit **437** produced only two shards from a dark olive green bottle, most likely 19th century, and fragments of thin slightly blue-green window glass that, although not closely datable, is most likely 19th century.

B.4.11 The single largest assemblage was recovered from cellar fill 360, (2.049kg). This included a complete fluted bottle that retained part of its original paper label, unfortunately little of which can be read. The base of the bottle retains a faint registration mark. These marks were introduced in 1842 and occur in Victorian ceramics from 1842 to 1883. The mark indicates the year of manufacture, month and day. Unfortunately the mark on the base of the bottle is shallowly embossed and heavily patinated, making it very difficult to read. Possibly the bottle was manufactured in

January 1855, and the majority of the pottery from this feature dates from *c.*1805-1840, thus the bottle may indicate the terminus ante quem for when the bulk of material within the cellar was deposited

Potential

B.4.12 Comparison of this assemblage with those of Intercell House, Harvest Way and the published Eastern Gate Hotel would provide a broader understanding of the usage of glass vessels across the Barnwell settlement, especially in the 18th and 19th-20th centuries. Documentary research can help establish the use of buildings and the occupations of residents and relate these to the material recovered from cellars and pits on the properties.

Further work and recommendations

B.4.13 The assemblage should be retained for comparison with the assemblages of Intercell House, Harvest Way and the published Eastern Gate Hotel. However, the material is, in itself, not worthy of further study and this report should be considered as the full record of the assemblage, with only the photography of the complete fluted bottle to be undertaken for archive purposes as the paper label will continue to deteriorate while in storage.

B.4.14 Glass to be photographed

Context	*Form*	*Weight (kg)*	*Description*	*Period*
360	Bottle	0.310	Complete clear, slightly green tinted moulded glass bottle. The entire bottle is fluted, the base is round, decorated with 16 fluted panels with a long relatively thin, champagne-type neck, the rim being finished with a flat lip. Part of paper label survives and should be recorded	3

B.4.15 New vessel forms and complete or near-complete vessels should should be retained for archive.

B.4.16 Vessels that retain complete or near complete, decipherable maker's marks, pattern names or other marks, including registration marks, date marks and measurement marks should be retained, unless the vessel type has been fully recorded elsewhere.

Glass catalogue

Ctxt	*Cut*	*Form*	*Wt (kg)*	*Description*	*Date*	*Pr*
24		Bottle	0.018	Dark olive green-brown shard from a cylindrical bottle probably for wine. External surfaces slightly rough and pitted, suggesting it is not modern.	19th-early 20th century	
24		Bottle	0.027	Rounded, convex base from an iridised clear, slightly blue-green tinted mould-blown bottle with raised lettering, the surviving readable letters being a 'C' and lower-case 'o', the abbreviation for company. The bottle is a torpedo-type mineral water bottle.	19th century	
26	25	Bottle	0.002	Shard of dark olive-green glass with few faults.	19th-20th century	3
26	25	Misc	0.002	Curved shard of clear, colourless glass with some light surface iridescence.	19th-20th century	3
38		Bottle	0.066	Slightly flared base and part of body from a cylindrical natural black glass bottle, lightly patinated and iridised. The glass has various faults and is hand-blown mould-formed.	Mid 18th-early19th century	3

Ctxt	Cut	Form	Wt (kg)	Description	Date	Pr
59		Drinking glass – stemware	0.041	Fragments from the stem and foot of a clear, colourless glass drinking vessel. This stemware vessel is most likely a wine glass, the surface of the glass is lightly iridescent and the vessel is likely to be 19th century or later.	19th century or later	3
59		Bottle	0.013	Clear colourless glass shard from a cylindrical mould-blown bottle, part of the embossed letter survives it is on angled E part of co-joined letters EWAC, the down stroke of the W being part of the letter E. This mark is found on Wadsworth mineral water and other aerated beverage bottles, including Codd-type bottles. The company had works at St Ives, Ely and Cambridge at various points in time during the company's history.	19th-early 20th century	3
63		Bottle	0.010	Basal shard from a dark olive green bottle. The surfaces are patinated and iridescent, much of which has flaked off and there are old and recent breaks present.	18th-19th century	3
128		Bottle	0.033	Large body shard of 19th-20th century bottle glass from a clear, colourless cylindrical glass bottle with very light surface iridescence.	19th-20th century	3
128		Window glass	0.002	Two shards of clear, slightly blue-green tinted window glass with few faults.	19th-20th century	3
157	158	Misc	0.002	Irregular shard of pale blue, almost turquoise glass, the surface of which appears to have been exposed to enough heat that the surfaces have become matt and devitrified.	19th-20th century	3
177	178	Bottle	0.005	Shard of clear, colourless glass from a press moulded bottle, the surface bears raised lettering which reads (.)ATE DAIRIE. The bottle was most likely a milk bottle, although which dairy it belong to is unclear.	19th-20th century	3
180	179	Window glass	0.007	Three shards of clear clear window glass with a slight greenish tint. All the shards are covered with a light layer of iridescent patination that is flaking, and the fragments include a rounded edge shard. All contain small faults, suggesting that the shards may be hand-blown cylinder glass.	18th-19th century	3
183	185	Bottle	0.007	Shard of mid olive-green glass from a cylindrical bottle hand-blown with some faults and bubbles.	19th- 20th century	3
184	185	Bottle	0.143	Base and near complete body from a thin pale green, flat-based, octagonal bodied (two or three part) mould-blown bottle. The seam line can clearly be seen running diagonally across the base, which also bears what appears to bear traces of a pontil mark, possibly from holding the bottle while the lip finishes were applied. The surface of the glass is uneven and somewhat pitted and the glass contains bubbles and faults. The uneven surface of the glass may be called Whittle marks as a reference to the hammered or wavy surface to the glass. These are the result of hot glass hitting the surface of a cold mould. (T.E.C. Jr. 2014)	19th century	3
184	185	Bottle	0.218	19 body shards of varying thicknesses from different dark green/natural black glass bottles. Some of the shards are lightly patinated and iridescent.	19th century	3
184	185	Bottle	0.357	Complete rim, neck and base from a cylindrical natural black glass bottle. The glass is slightly iridescent and contains faults and bubbles. The base shows traces of a pontil mark, and the surface is lightly pitted.	19th century	3
184	185	Bottle	0.525	Neck with complete rim, and base from a natural cylindrical black glass bottle (or bottles). The glass contains small bubbles, the surface of the base is slightly pitted and a traces of pontil mark can be seen in the kick.	Early 19th century	3
191	192	Window glass	0.014	Eight shards of thin clear, slightly blue-green window glass, the shards are all lightly patinated and iridescent and the largest shard may have a slightly grozed edge. The glass, although thin, has relatively few faults.	?19th century	3
195		Bottle	0.007	Vessel shard most likely from a bottle. The glass is opaque and heavily patinated over both surfaces and edges, indicating breaks of some considerable age.	17th-early18th century	2
220	225	Bottle	0.133	Complete rim and neck from a cylindrical dark olive green or natural black glass bottle. The glass contains faults and bubbles. The form of the rim and applied finishes suggest 19th century.	19th century	3
220	225	Bottle	0.108	Neck with complete rim, from a dark olive green or natural black glass cylindrical bottle. The glass contains small bubbles and faults.	19th century	3

Ctxt	Cut	Form	Wt (kg)	Description	Date	Pr
				The form of rim and applied finishes suggest 19th century.		
220	225	Bottle	0.131	Base of a natural black glass cylindrical bottle with high conical kick that bears traces of a pontil mark.	19th century	3
220	225	Bottle	0.119	Nine shards from the bodies of several dark olive green and natural black glass bottles. Many of the shards are patinated and lightly iridescent.	19th century	3
220	225	Bottle	0.232	Base from a natural black glass cylindrical bottle with a well formed kick that bears the traces of a pontil mark. The glass is slightly iridescent and contains bubbles and faults. This is most likely 19th century.	19th century	3
241	240	Bottle	0.421	Complete base and partial neck from a cylindrical natural black glass bottle(s). The glass is full of elongated bubbles, the relatively high kick of the base shows evidence of a pontil scar.	19th century	3
251	252	Bottle	0.001	Shard from a vessel, most likely a bottle, very light for its size and thickness. The glass is opaque and heavily patinated over both surfaces and edges indicating breaks of some considerable age.	?Medieval or 17th century	1
267		Bottle	0.333	Near complete base from a natural black glass bottle, the glass is iridised and patinated.	Late 18th-early 19th century	3
267		Bottle	0.146	Complete base and partial body from a heavily patinated and iridised small cylindrical pale green glass bottle with shallow domed kick and pontil mark.	19th century	3
267		Window glass	0.003	Shard of thin clear, near colourless window glass, heavily patinated and iridescent		3
275	274	Bottle	0.034	Shard of dark olive green/natural black glass, heavily iridised, Appears to be from a cylindrical bottle.	18th-century or later	3
275	274	Bottle	0.038	Shard of dark olive green/natural black glass heavily patinated. The condition of the glass suggests some antiquity, possibly 17th century or slightly later.	17th-18th century	3
275	274	Window glass	0.003	Shard of clear near colourless glass with slight surface patina. There are no faults or bubbles in the glass, suggesting it is machine made.	19th century or later	3
304	302	Bottle	0.059	Body shard, part of base and semi-complete applied lip and string rim from a slightly patinated and iridescent natural black glass bottle(s).	19th century	3
325		Bottle	0.003	Shard from olive green glass bottle, internally clouded slightly iridescent surface. Externally slightly pitted, clear surface hand-blown glass.	18th-19th century	3
325		Bottle	0.001	Shard from vessel most likely a bottle, the shard is very light for its size and thickness. The glass is opaque and heavily patinated over both surfaces and edges indicating breaks of some considerable age.	?Medieval or 17th century	3
360		Bottle	0.107	Neck/rim and body shard from a natural black glass cylindrical bottle, the applied lip and finish of the bottle suggest it is early to late 19th century.	19th century	3
360		Bottle	0.304	Base from natural black glass bottle with shallow kick and thick base. The base of the bottle shows evidence of moulding technique and the base might be described as mamelon, indicating it was mould-blown, although it is unlikely to have been machine made.	19th century	3
360		Bottle	0.204	Complete base from a natural black glass cylindrical bottle with conical kick or push up which retains evidence of a pontil mark, the sides of the bottle are parallel. The base does not splay outwards, suggesting it is mid 19th century or later.	Mid 19th century or later	3
360		Bottle	0.317	Two shards from the body and base of a cylindrical natural black glass bottle base, the sides of which are paralleled and do not flare unlike earlier bottles. The pontil mark and shallow domed kick suggest it is mid 19th century or later.	Mid 19th century	3
360		Bottle	0.310	Complete clear, slightly green tinted moulded glass bottle. The entire bottle is fluted, the base is round, decorated with 16 fluted panels with a long relatively thin, champagne-type neck, the rim being finished with a flat lip. Part of the bottle's cork remains inside the bottle and although heavily patinated and iridised over part of its surface, traces of the paper label that described its contents survive. This should be photographed since very little can actually be made out. The shape of the bottle, being quite distinct, may help to identify its contents. The base of the bottle in the shallow moulded central	Mid 19th century	3

Ctxt	Cut	Form	Wt (kg)	Description	Date	Pr
				area bears a moulded registration mark. These marks were introduced in 1842 and occur in Victorian ceramics from 1842 to 1883. It is quite likely that this mark is of similar date. The mark indicates the year of manufacture, month, and day. Unfortunately the mark on the base of the bottle is shallowly embossed and heavily patinated, making it very difficult to read without removing the iridised surface of the glass. Careful photography and light rubbing may reveal the registration details more clearly. Although it would appear that the lower number is 7 the right-hand side is unclear. The left-hand side may be a C or an O and the upper part of a number can be made out. If this conforms to the registrar table of registration marks illustrated in Gordon the seven indicates the parcel number and the letter C or O would suggest it was manufactured in January. Unfortunately it is unclear what the year letter is, although it may be an 'e' which would indicate 1855, however this is conjecture.		
360		Bottle	0.099	Two shards from the base of a clear, slightly green tinted, iridised glass bottle with shallow kick and moderately thick base. The base of the bottle shows evidence of moulding technique and the base might be described as mamelon. A seam can be seen on the surviving part of the body, indicating this was a press-moulded bottle from a two or three part mould.	19th century	3
360		Bottle	0.025	Large shard of pale blue tinted glass from a machine made moulded octagonal bottle of the type that would have contained medicinal or food products. Part of the front or back panel survives. The surviving letters are ICKE the line below is MUNDS probably from Bury St Ed(munds) would have held fruit, salts or medicine.	19th-20th century	3
360		Bottle	0.087	Complete rim partial neck and part of body of blue-green, (aqua) oval (torpedo) mineral water bottle, heavily iridised (silver-white). The blob applied rim is rounded and a mould line can be clearly seen on one side of the bottle. Part of the moulded-embossed text survives BERN and slightly offset below this what appears to be an O or C, similar to the bottle recovered from context 385. These letters most likely represent the words BERNER and Oxford and like the bottle from 385 identify this as a J Schweppe & Co mineral water bottle. J. SCH(WEPPE & Co) 51 BERNER (ST.) OXFOR(D ST) GENUI(INE SUPERIOR) AER(AETED WATERS) Jacob Schweppe was one of the earliest manufacturers of mineral water. In the late 1790s Schweppe began using glass containers and he is the first person known to use the egg-shaped or torpedo bottle which was designed to lie on its side rather than stand upright. The patents for the egg-shaped or torpedo bottle was registered as the Hamilton bottle by inventor William Hamilton, in 1809, Schweppe having never patented the idea. The Hamilton bottle was not prominent until the 1840s, when virtually every manufacturer was using it. Jacob Schweppe had a chemist shop in Oxford Street, London, and in the 1790s and early eighteen hundreds sold his soda water there. The first moulded-embossed Hamilton bottles were used from the 1830s onwards (Hannon and Hannon 1976) and embossing on all bottle types reached its peak in the late 19th century (Hedges 1996, p23). By the beginning of the 20th century, the fashion for embossing was declining as bottle manufacturing became more automated and preprinted labels became a more common way of marking the brand and contents of a vessel (Wadsworth Wines date unknown).	Early to mid 19th century	3
360		Window glass	0.011	Two shards of pale near colourless, rounded and iridescent window glass. There is no evidence of grozing on the shards.	19th century or later	3
360		Bottle	0.130	Partial base from a pale olive-green, cylindrical glass bottle, lightly iridescent and some surface clouding.	Mid 19th century or later	3
360		Bottle	0.009	Small shard from a clear, slightly green tinted press-moulded glass bottle with numerous faults and bubbles and with embossed lettering surviving on the fragment. The surviving letters are THET and the thickness of the glass suggests it was most likely a mineral water bottle. However it is unclear where the bottle originates and whether THET relates to the contents or water supplier.	19th century or later	3
360		Bottle	0.014	Partial neck and rim and part of shoulder from a press-moulded clear, slightly blue tinted/aqua lightly iridised glass from a bottle of the type containing milk of magnesia and sold by chemists. Dated to the late 19th century	Late-end 19th century	3

Ctxt	Cut	Form	Wt (kg)	Description	Date	Pr
360		Bottle	0.019	Body shard from a clear, slightly blue, green tinted cylindrical moulded bottle from a two or three part mould.	19th-20th century	3
360		Bottle	0.013	Partial neck and shoulder from a clear, slightly blue tinted/aqua lightly iridised glass bottle.	Mid-late 19th century	3
360		Bottle	0.173	Partial base from a relatively thick-walled natural black glass cylindrical or near cylindrical bottle. The slight misshapen list of the base suggest it is at least in part hand-blown and there are traces of a pontil mark on the base. The glass is slightly dull and partially iridised and was most likely a wine bottle.	19th century	3
360		Bottle/Jar	0.227	Large base shard from a clear, pale blue-green (aqua) glass jar or wide based bottle, has a shallow domed kick and there are traces of what appears to be a pontil mark. The glass has several moderately sized bubbles and one exceptionally large bubble within the base. No mould seams can be seen and the glass is somewhat clouded and slightly iridescent.	19th century or later	3
371	372	Window glass	0.004	Pale olive-green roughly triangular shard of window glass with slight surface clouding. The edges are mainly ungrozed although a short edge shows what might be grozing however it is unclear and this may just be post-dispositional damage. There are possible lines paralleling two straight edges of the glass, which may mark the position of the original lead into which the glass was almost certainly set	?18th-19th century	3
373	374	Bottle	0.078	Partial base and body from a thick natural black glass, flat based octagonal bodied (two or three part) mould blown bottle. The seam line can clearly be seen running diagonally across the base, which also bears traces of a pontil mark, possibly from holding the bottle while the lip finishes were applied. The surface of the glass is heavily iridised.	19th century	3
385	384	Bottle	0.086	Three large shards from a pale green oval (?torpedo shaped) moulded and embossed mineral water bottle. A mould line can clearly be seen along one side of the bottle, which is broken at the neck and close to the mid point. Much of the surface of the bottle is embossed. The surviving text is in five relatively equally spaced lines around the body of the vessel running along its length, and is as follows J. SCH(WEPPE & Co) 51 BERNER (ST.) OXFOR(D ST) GENUI(INE SUPERIOR) AER(AETED WATERS) Jacob Schweppe was one of the earliest manufacturers of mineral water. In the late 1790s Schweppe began using glass containers and he is the first person known to use the egg shaped or torpedo bottle which was designed to lie on its side rather than stand upright. The patents for the egg shaped or torpedo bottle was registered as the Hamilton bottle by William Hamilton, inventor in 1809. Schweppe having never patented the idea. The Hamilton bottle was not prominent until the 1840s, when virtually every manufacturer was using it. Jacob Schweppe had a chemist shop in Oxford Street, London, and in the 1790s and early eighteen hundreds sold his soda water there. The first moulded-embossed Hamilton bottles were used from the 1830s onwards (Hannon and Hannon 1976) and embossing on all bottle types reached its peak in the late 19th century (Hedges 1996, p23). By the beginning of the 20th century, the fashion for embossing was declining as bottle manufacturing became more automated and preprinted labels became more common way of marking the brand and contents of a vessel (Wadsworth Wines date unknown).	Early to mid 19th century	3
389	388	Drinking glass	0.076	Clear, colourless, although heavily iridised, relatively thick base from a drinking glass-tapered tumbler, no mould marks are visible suggesting the vessel is free blown. The base is marked by a rough pontil mark, which may have been roughly ground.	?18th century	3
398		Window glass	0.012	Three shards of clear, slightly blue-green window glass. All the shards are covered with a light layer of iridescent patination that is flaking, and the fragments include a rounded edge shard. All contain small faults, suggesting that the shards may be hand blown cylinder glass.	18th-19th century	3
400	399	Bottle	0.007	Body shard from a pale green relatively heavily iridised bottle.	Not closely datable	2
400	399	Bottle	0.024	Neck and body shard from a heavily patinated bottle(s). The condition of the glass suggests it is relatively early and the partial	Late-end 17th century	2

Ctxt	Cut	Form	Wt (kg)	Description	Date	Pr
				neck retains part of the cracked off lip and rounded flattened top and bottom string rim, indicating the bottle is possibly late 17th century.		
402	401	Bottle	0.051	Near complete (having lost most of neck and rim) circular based, conical press-moulded bottle with clear mould lines across base and sides of the bottle and an unfinished pontil mark on base. The bottle is almost completely opaque, having become heavily patinated, except when held to the light or where the patination has flaked off. Below this, the glass is clear, with a slight blue-green tint. It is heavily embossed along one side of the bottle DALBYs, along the opposite side CARMINATIVE. Marketed as a medicinal product by James Dalby, of London, England from the late 1770s, its ingredients included opium (Wikipedia 2014). It was amongst the most widely used patented medicine given to infants and children in England and the United States during the latter years of the 18th and early part of the 19th century to treat a wide variety of symptoms. (Lindsey 2013)	Early- mid 19th century	3
403	401	Bottle	0.004	Small shard of heavily patinated/iridised ?natural black glass bottle.	18th-19th century	3
403	401	Bottle	0.002	Small shard of lightly iridised mid olive green glass bottle.	19th-century	3
403	401	Bottle	0.008	Clear near colourless, slightly iridescent base from a small glass vial with rounded base, upright sides and clear pontil mark.	18th-19th century	3
438	437	Bottle	0.004	Two shards from a dark olive-green bottle(s).	19th century	3
438	437	Window glass	0.005	Shards of thin clear, slightly blue-green window glass, the shards are all lightly patinated and iridescent.	?19th century	3
458	457	Bottle	0.019	Two shards of semi-translucent glass in pale green which is slightly pitted and patinated.	18th-19th century	3
458	457	Bottle	0.026	Two shards are heavily iridised, one is relatively thick and most likely comes from a base. The other is a relatively thin body shard. Two other shards are somewhat more translucent in pale green glass which is slightly pitted and patinated, suggesting possibly two or more bottles of slightly differing dates.	18th century	3

Table 12: *Catalogue of glass*

B.5 Post-Roman Pottery

By Carole Fletcher

Introduction

B.5.1 Archaeological works produced a pottery assemblage of 2360 sherds weighing 56.107kg, including material collected during cleaning of areas and not assigned to a particular feature or layer. A number of sherds were recovered from samples, however these were mainly small abraded sherds, many being undiagnostic, and have not been included in this assessment except where no other dating material was available.

B.5.2 The bulk of the assemblage is broadly 18th and 19th century (33.127kg) alongside a moderate medieval assemblage (weighing 14.525kg) with material from the post-medieval period also moderately represented (weighing 8.035kg), while the Late Saxon-early medieval period is poorly represented. The condition of the overall assemblage is unabraded to moderately abraded.

Methodology

B.5.3 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.

B.5.4 Rapid recording was carried out, the contexts have been spot dated and fabrics within them noted using using Cambridgeshire fabric types where possible (Spoerry, forthcoming) and using the Museum of London's fabric list for post-medieval types

(*http://www.mola.org.uk)*. The summary catalogue at the end of this report lists the context, spot date and the period assigned by the excavator. The pottery and archive are curated by Oxford Archaeology East until formal deposition.

Sampling Bias

B.5.5 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.

The Assemblage

B.5.6 The broad ceramic fabric abbreviations used are given in Table 13. It should be noted that for the purpose of this post-excavation analysis all the various types of decoration present for Creamware, Pearlware, Yellow ware and Refined White Earthenware have been grouped together under the fabric description of CREA, PEARL, YELL and RFWE for simplification. The decoration type can help dating of an individual context and this will be recorded, although for the purpose of the broad ceramic abbreviations these differences are not included. The list indicates the range of fabrics present in the assemblage.

Fabric Code	*Full Name*	*% of total assemblage by weight (kg)*
AGRI	Agricultural ceramics-plant pot	3.2
BABEL/PMBL	Ely Babylon ware/Post-medieval Black-Glazed	0.1
BBAS	Black Basalt	0.8
BCHIN	Bone China	0.4
BCHIN-LUST	Bone China with Lustreware decoration	0.7
BICR	Bichrome	0.3
BOND	Bourne 'D' ware	0.1
BOUD	Border ware	0.1
BRILL	Brill/Boarstall ware	0.2
CREA	Creamware	3.4
CREA/RFWE	Creamware/Refined White Earthen ware	<0.1
CSTN	Cistercian ware	0.5
DNEOT	Developed St Neots	<0.1
DRYST	Dry-bodied stoneware	0.2
DYE	Dyed-bodied Refined Earthenware	0.5
EAR	East Anglian Redware	9.5
EAR/PMR	East Anglian Redware/Post-medieval Redware	0.1
EMEMS	Early Medieval Essex Micaceous Sandy Ware	0.1
ENGS	English Stoneware	7.5
ENPO SP/BCHIN	English Soft Paste Porcelain/Bone China	1.3
EPMR	Early Post-medieval Redware	2
FREC	Frechen Stoneware	1.2
GRIM	Grimston-type ware	0.1
HEDI	Hedingham Fineware	0.4
HERTG	Late Medieval Hertfordshire glazed ware	<0.1
HUNFSW	Huntingdonshire Fen Sandy ware	0.1
HUNTHET	Huntingdon Thetford	0.1
IRONST	Ironstone	0.7

Fabric Code	*Full Name*	*% of total assemblage by weight (kg)*
LEAR	Late East Anglian Redware	0.7
LEAR/LMR	Late East Anglian Redware/Late Medieval Reduced ware	0.3
LMEL	Late Medieval Ely ware	0.1
LMO	Late Medieval Oxidised ware	0.1
LMR	Late Medieval Reduced ware	6.6
LMT	Late Medieval-Transitional ware	<0.1
LONS	London Stoneware	<0.1
MCW	Medieval Coarse ware	5.0
MEL	Medieval Ely ware	0.3
MEMS	Medieval Essex-type Micaceous Grey Sandy wares	0.4
METS	Metropolitan Slipware	0.4
MGF	Mill Green Fineware	<0.1
MODR	Modern Redware -Late glazed kitchen wares	2.5
MODR (S)	Modern Redware -Late slipped kitchen wares	2.3
MP	Midland Purple	1.7
NEOT/DNEOT	St Neots/Developed St Neots	<0.1
NOTTS	Nottinghamshire/Derbyshire-type Stoneware	2.2
OSW	Orange Sandy ware	<0.1
PEARL	Pearlware (includes all decoration variants at this time)	21.0
PEARL/RFWE	Pearlware/Refined White Earthenware	2.9
PMBL	Post-Medieval Black-Glazed ware	0.2
PMR	Post-Medieval Redware	5.6
PMR/AGRI	Post-Medieval Redware/Agricultural Ceramics	1.8
PORC	Porcelain	<0.1
POTT	Potterspury	<0.1
RAER	Raeren stoneware	1.1
REFR	Refined Red Earthenware	0.2
RFWE	Refined White Earthenware (includes all decoration variants at this time)	1.8
SCAGS	South Cambridgeshire Grog-Tempered Sandy ware	<0.1
SEFEN	South-east Fenland Medieval Calcareous Buff ware	<0.1
SHW	Shelly ware	0.1
STMO	Staffordshire-type Mottled Brown Glazed/Manganese Mottled ware	<0.1
STSL	Staffordshire-type Slipware	0.3
STWD	Staffordshire White-Dipped ware	<0.1
SWSG	Staffordshire White Salt-Glazed ware	0.1
TGW	Tin-Glazed Earthenware	0.6
THET	Thetford Type ware	<0.1
TRAN	Transitional Redware	1.4
TUDG	Tudor Green	<0.1
UPG	Unprovenanced Glazed ware	0.2
WERR	Werra slipware	0.1
WEST	Westerwald	<0.1
YELL	Yellow ware (includes all decoration variants at this time)	6.1

Table 13: *Pottery fabrics present in the assemblage*

Pottery By Ceramic Period

B.5.7 A small amount of Late Saxon-early medieval pottery, undiagnostic Thetford ware, a sherd tentatively identified as Huntingdon-Thetford ware and St Neots-Developed St Neots ware sherds, was recovered during the excavation. It is unusual that no Stamford ware was recovered as this fabric is a normal part of the triumvirate of Thetford ware, St Neots and Stamford ware that are found across much of Cambridgeshire in the 10th-12th centuries. Similar low levels of Late Saxon-early medieval pottery were recovered from the Eastern Gate Hotel site (Cessford, Hall and Hall 2013), Intercell House (Fletcher 2012; 2015a) and Harvest Way (Fletcher 2013; 2015b)

B.5.8 Early medieval pottery (AD 1050-1200) including Developed St Neots ware, Early Medieval Essex Micaceous Sandy ware, some Cambridgeshire early medieval sandy ware are also present, including a sherd tentatively identified as South Cambridgeshire Grog-Tempered Sandy Ware.

B.5.9 The presence of early medieval fabrics indicates some level of pre-12th century occupation, although no early medieval features were identified. The low levels of pottery recovered suggests either middening scatters or rubbish deposition within features that were destroyed by 13th century activity, thus the majority of the sherds were recovered as a residual element within later features.

B.5.10 Medieval fabrics (AD 1200-1500) form *c*.24% of the total assemblage (by weight), suggesting moderate levels of medieval activity, with much of this material related to the serving of liquids and the medieval kitchen. Some of these vessels were recovered directly from medieval pits and other features, however only two sherds were recovered from the Medieval buildings recorded in Period 1. Building 1, post hole **174**, produced a single sherd of transitional redware while from building 2 a single fragment of Medieval Coarseware was recovered from the hearth **235**. The majority of Medieval pottery came from features in Period 2, the remainder from disturbed and reworked features in Period 3.

B.5.11 Coarsewares were recovered, although not in large numbers, and are similar to those from Intercell House (Fletcher, 2012, 2015a), the Grand Arcade (Cessford 2007) and The Eastern Gate Hotel site assemblages (Hall, Cessford and Newman 2013). The Grand Arcade coarseware assemblage was initially subdivided by colour with Ely ware being easily recognised and therefore separated (Cessford and Hall 2007, 301-302). It would appear that The Eastern Gate Hotel site assemblage was similarly divided with Ely ware again easily recognised (Hall, Cessford and Newman 2013, 69). Within the Brunswick (Fletcher 2011), Intercell House (Fletcher 2015a) and Harvest Way (Fletcher 2015b) assemblages some of these medieval coarsewares have been identified as Southeast Fenland Calcareous Buff ware, 'A mainly light-firing quartz-tempered fabric. The surfaces are usually buff, and even off-white, in colouration, but are sometimes light brown, and the core is usually light grey and reduced. The fabric is sandy to the touch […] its origins possibly in the parishes of Soham or Wicken' (Spoerry, forthcoming). Coarsewares that could not initially be assigned a group have for the purpose of this report been recorded as medieval coarsewares rather than grouped by colour, with the possibility of some of these being as yet unidentified local fabrics.

B.5.12 Glazed wares are relatively common in the medieval assemblage and are mainly redware sherds, including Mill Green fineware and Hedingham fineware. The largest group of medieval sherds are the redwares, many of which are glazed. These sherds, unless a specific fabric identification can be made, have been grouped together as East Anglian Redwares. These redwares form part of a medieval tradition across East Anglia that continues into the late medieval and post-medieval periods and includes the

various redwares produced over much of Essex. Also present in the assemblage is Medieval Ely ware (glazed and unglazed), Grimston Glazed ware and some Brill/Boarstall ware vessels.

B.5.13 Some fabrics such as Lyveden-Stanion ware, commonly found on medieval Cambridgeshire sites, were notable by their near absence at both Cambridge Regional College site (Fletcher 2011) and Intercell House, Coldhams Lane (Fletcher 2012; 2015a) and although more common in the Harvest Way assemblage, it is completely absent from this assemblage. It is possible that Lyveden-Stanion ware was not in favour within the Brunswick lay settlement in the medieval period, the population of Barnwell appearing to have preferred Essex and Ely ware jugs to those of the Lyveden-Stanion potters (Fletcher 2015b).

B.5.14 Definitively late medieval ceramics (AD 1350-1500) are present in only moderate numbers, *c*.8% of the assemblage by weight (included within the *c*.24% medieval assemblage), slightly higher than that at Intercell House, Coldhams Lane (Fletcher 2015a). Many of the identified medieval fabrics remain in production for the whole of the medieval period and undiagnostic body sherds can be only broadly dated; full analysis may increase the number of identified later medieval sherds within the assemblage. Those present include Late East Anglian Redwares, Late Medieval Ely ware, Late Medieval Reduced ware and sherds of Late Hertfordshire Glazed ware. In addition a number of transitional medieval-post medieval sherds were recorded, including a number of Cistercian ware sherds and possibly Babylon ware sherds.

B.5.15 Observation of this assemblage in relation to the Intercell House and Harvest Way assemblage suggests that, like Intercell House and Harvest Way, the late medieval period is not well represented.

B.5.16 Post-medieval fabrics are moderately represented, forming *c.*14% of the total assemblage by weight, including transitional fabrics with their origins in the late medieval period still in production in the 17th century, but comprising mainly mid 16th-18th century Post-medieval Redwares and also early Post-medieval Redwares. It is probable that some of the redwares identified as Post-medieval redwares are the 15th-16th century products of the kilns in Ely, described by Cessford and Hall as Broad Street Glazed Red earthenware (Cessford, Alexander and Dickens 2006, 51-58).

B.5.17 Also present in relatively low numbers are the early material from the Staffordshire industries, Staffordshire-type Slipwares, Staffordshire White Salt-Glazed wares and Staffordshire-type Mottled Brown Glazed/Manganese Mottled ware

B.5.18 Imported wares appear at this point and include Raeren stoneware, Frechen Stoneware and the later Westerwald Stoneware. A significant import was recovered from pit **265**, which produced 11 sherds from a semi-complete Anglo-Netherlandish or Netherlandish late 16th-17th century Tin-Glazed Earthenware pear-shaped jug or vase, similar to a ring-handled vase recovered from the Harvest Way assemblage (Fletcher 2015b).

B.5.19 The late 18th-19th century or early modern material forms the bulk of the pottery recovered from the archaeological works, 33.127kg, approximately 59% of the total assemblage by weight, comprising most commonly sherds of Creamware, Pearlware, Yellow ware and Refined White Earthenware from the industrial Midlands and other pottery producing areas. Also present were a number of large heavy Modern Redware or Late Slipped Kitchen wares as described by Cotter (Cotter 2000, 254-6), and plant pots. Excavations at Harvest Way produced a larger assemblage of late 18th-19th century or early modern material (180.506kg), however it forms a slightly smaller percentage of the whole assemblage by weight at 46% (Fletcher 2015b). Both

assemblages have a similar range of fabrics, although Pearlwares are more common than Creamwares, suggesting that the assemblage may be slightly later than that of Harvest way, where Creamwares are the dominant fabric of this period within the assemblage. However, Creamware (*c.*1740-1830) and Pearlware did exist side by side (*c.*1770-1840) for much of the 18th and 19th century and this difference may represent variations other than date.

Provenance

B.5.20 There is a moderate 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.

B.5.21 The medieval assemblage originates from the Cambridgeshire region, and East Anglia in general, including the Essex fabrics, while from Lincolnshire sherds the pottery is almost entirely Bourne 'D' ware. Also present is material from Bedfordshire, Buckinghamshire, Hertfordshire, Norfolk and Northamptonshire, among others.

B.5.22 Imported vessels within the assemblage form a small but significant group with material from Raeren, Frechen and Westerwald, and the Tin-Glazed Earthenware pear-shaped jug or vase, discussed earlier, which is most likely from the Netherlands.

B.5.23 The majority of the assemblage originated in that area now commonly known as the Staffordshire potteries. A number of the Creamwares, Pearlwares and later fabrics may have been produced elsewhere, however a number of sherds were marked, either with an impressed stamp and/or a transfer-printed mark, which indicates the manufacturer, and those that have been identified are all from the Staffordshire potteries. Manufacturers currently identified are Copeland & Garrett (1833-47) Davenport (Godden 1991, 189-191), J Dimmock & Co (1862-78) (Godden 1991, 208), Thomas Dimmock (Junr) & Co. (1828-59) (Godden 1991, 208) and Wedgwood.

B.5.24 The Copeland & Garrett vessel and the Thomas Dimmock vessel both have the same transfer-printed pattern, the Copeland and Garrett plate has on its upper surface the Trinity College crest, the Thomas Dimmock vessel, although not bearing the Trinity College crest does appear to have the same border pattern as the crested plate, both appear to have formed part of a service for Trinity College, Cambridge. The service, coming as it does from two different manufacturers was possibly not all purchased at the same time. The Thomas Dimmock plate is also painted on the reverse with the name Leach, this painted mark was applied over the impressed mark identified as being of Thomas Dimmock (Godden 1991 208).

B.5.25 A large number of Pearlware plates are decorated, however the identification of the patterns is problematic, with few being found in either of Coysh and Henrywood's two volumes of *The Dictionary of Blue and White Printed Pottery 1780-1880* (Volume 1 1982, Volume 2 1989).The most common transfer-printed pattern was that of a willow pattern-type design.

Form

B.5.26 The vessels present in the full assemblage are, across all periods, primarily domestic in nature. They comprise bowls and dishes (including plates), which form the bulk of the assemblage, followed by jugs and jars which, due to the predominant age of the assemblage (late 18th-19th century), are relatively poorly represented in all but the Medieval period.

B.5.27 The post-medieval assemblage includes drinking vessels, jugs and bowls or dishes and the first appearance of chamber pots, a Staffordshire Slipware vessel. Chamber pots

are also present in the early modern assemblage and although not as prevalent as from the Harvest Way excavation, examples of this vessel type were found in Creamware Pearlware and Yellow ware. Numerous drinking vessels were recovered, both tea cups and possibly earlier teas bowls, alongside saucers, teapots, plates, bowls, serving dishes, lids, plant pots, bottles. Some later sherds are from named plates, these wares having been marked, either by hand in a fine copper plate before the final firing of the vessel, or by transfer-printing, with the name of a college, or a college cook (names or initials are found on both the upper surfaces, often on the rim and/or on the base). Similar vessels were recovered from the Harvest Way assemblage (Fletcher 2015b) and the Eastern Gate Hotel site (Cessford, Hall and Hall 2013).

Pottery By Period

B.5.28 At the point of writing the assemblage has been broadly phased, and the breakdown of the assemblage by stratigraphic phase makes Period 3 particularly dominant in terms of pottery by weight as part of the total assemblage. This does however related in part to the degree of residuality often found in later phases; in most cases the broad date range used by the excavator has lessened the incidences of intrusiveness. For example the start date of Creamware is is *c.*1740, which falls within the excavators Period 2, however it would sit more comfortably within Period 3. Where a single piece of Creamware is found amongst an otherwise more obviously post-medieval assemblage, this material has been marked as intrusive. The phase dates given are those of the excavator.

B.5.29 Period 1 (Medieval *c.*1200-1538) forms *c.*2.7% of the total assemblage (by weight), although some of the pottery recovered from the Period 1 features can be sub-divided into high medieval or late medieval, the excavator's phasing does not make this distinction. The bulk of the Period 1 material was recovered from pits, with a small amount recovered from ditches. Only two sherds were recovered from features associated with the buildings from this phase. In total 23 contexts, a total of 18 features have been assigned to Period 1.

B.5.30 Period 2 (Post-medieval *c.*1538-1800) comprises *c.*25% by weight of the total assemblage, recovered from 36 contexts, twelve features and from the cultivation layer or layers, with the bulk of the assemblage recovered from pits, the cultivation layer and the detached latrine complex **450**. Much of this material is residual within the later features, *c.*66% by weight (for the phase assemblage), indicating reworking of earlier deposits, and yet only *c.*1% by weight for the phase assemblage is intrusive. The largest intrusive groups were recovered from probable quarry pit **265**, detached latrine complex **450** and the cultivation layers. These features produce the bulk of the pottery recovered from Period 2.

B.5.31 Period 3 (*c.*1800 to present) comprises *c.*72% of the total assemblage. Residuality for this phase is *c.20*% by weight (for the phase assemblage). The bulk of the pottery was recovered from eight features including cellar, context 360 (15.826kg) and cellar context 311. Cellar context 360 produced a large assemblage of pearlwares including vessels relating to Cambridge Colleges both Trinity and St Johns.

B.5.32 Pits **240** and **225**, which lie within the courtyard of what was the Jolly Butchers pub, and pits **374** and **372**, which lie to the south of the pub, may relate to it as they contained a number of clay pipes. Pit **401** produced a complete profile of a Pearlware bowl with the name Claydon written in script on the upper surface of the rim of an otherwise undecorated vessel. It is unclear at this point if Claydon was a cook at one of the Cambridge colleges, although named vessels recovered from both the Harvest Way

and the Eastern Gate Hotel assemblages have related to college cooks (Fletcher 2015b, Cessford, Hall and Hall 2013). A number of near complete vessels were recovered from this pit, many of which had undergone differential abrasion post deposition. Refitting sherds that were clean and unabraded with sherds that were completely discoloured and encrusted suggests that the material had on the whole entered the pits already in a broken state or that the deposit was reworked and disturbed soon after deposition. The 19th century material represents serving of food and dining alongside the drinking of tea and the occasional chamber pot.

B.5.33 A number of features on the plot relating to the building owned by Mendicity produced pottery, pit **158** described by the excavator as 19th century produced only a single sherd of 19th century pottery the remaining sherds being residual medieval fabrics. The material recovered from well **185** is a mix of 18th-19th century pottery with some earlier material, however the bulk of the pottery recovered most likely relates to infilling of the well in the 19th century.

Discussion

B.5.34 Domestic in nature, the assemblage indicates occupation within the area of excavation, involving both the preparation and serving of food and drink in the medieval period. The site lies within the former lay settlement of the medieval Barnwell Priory and the features excavated would appear to relate to this settlement, the wells and pits most likely located at the back of properties within the lay settlement. The area may mostly represent back plots. The remains of the two Period 1 buildings produced almost no pottery, which does not aid identifying their usage. Building 1 produced a single sherd of Transitional Redware jug (0.004kg) from post hole **174**, while building 2 produced a single base shard from a Medieval Coarseware vessel from hearth **235**. Neither of the sherds can be closely dated and both are small and abraded or moderately-abraded and cannot categorically date the buildings in any but the broadest terms.

B.5.35 Food preparation, consumption and disposal, in the form of chamber pots, is represented in the pottery assemblage in the post-medieval period (Period 2). The amount of pottery recovered suggests relatively dense occupation of the area, however the bulk of the assemblage was recovered from the probable quarry pit **265**, detached latrine complex **450** and the cultivation layers. Much of the material consists of residual medieval ceramics.

B.5.36 Perhaps one of the most interesting finds in Period 2 is from plot 30, the Tin-Glazed Earthenware, decorated, pear-shaped jug or vase, which is most likely imported and is similar to the ring-handled vase recovered from the Harvest Way excavation; that particular vessel was decorated with the Christogram IHS (Fletcher 2015b). The pear-shaped jug or vase has no direct religious overtones, but is similar to a vase illustrated by Jennings (Jennings 1981, 201-202, fig 90 no. 1429) and, like the ring-handled vase, may relate to collegiate use. The same context 266, pit **265**, also produced a sherd from an imported ?Werra bowl and sherds from several Raeren drinking jugs, early Post-medieval Redware drinking vessels and East Anglian Redware jugs, alongside late Medieval reduced ware jugs. The material appears to relate strongly to the consumption of liquids, most likely beer rather than wine, and a gaming counter was also recovered from this feature so perhaps this assemblage represents rubbish from a pub or inn or collegiate dining. The area of land where this pit was dug belonged to Bennett College and on the 1807/11 map forms part of the Bird and Bolt public house and premises (Table 1). The Bird and Bolt pub/inn dates back to at least 1603.

B.5.37 Late 18th-19th century material may indicate varying levels of social status within the area of excavation. There appears to be continuation of the connection between the colleges and the site with material recovered that is marked with the names of college cooks and colleges themselves. This includes HUDSON in a 'cloud' shaped border on rim and surviving H on the outside of a Pearlware/refined white earthenware shallow oval bowl or dish from the cellar context 360, which also produced a base sherd from a Pearlware serving vessel with a complete Trinity college crest transfer-printed onto the interior surface. Sherds from vessels marked with Hudson's name and relating to Trinity College were also recovered from the Harvest Way excavations (Fletcher 2015b) and from the Eastern Gate hotel site, where a blue transfer-printed floral pattern plate of Henry Hudson, cook at Trinity College *circa* 1813-38 (one sherd, 11g) was recovered (Cessford 2013, 73).

B.5.38 Material from a second college was also present. On a base sherd from a transfer-printed plate or serving vessel part of the bird appear in the and the second bird and part of the word (COL)LEGE, the reverse is marked O.J the remaining letters having been lost. This would appear to be part of the service for St John's College, and the design appears to be that used by Masons. An early version of this pattern can be seen in Godden's Guide to Ironstone Stone and Granite wares (Godden 1999, 20 colour plate 4) described as printed in underglaze blue with blue pheasants or birds and flowers pattern. The example is not an exact match, the plate more closely matches an online example where the tray from a chestnut basket clearly shows the Blue Pheasant. (clivepayne.com n.d.). Two further fragments of this pattern were recovered from the same context.

Potential

B.5.39 The assemblage can contribute to understanding pottery consumption and usage within Barnwell and has the potential to aid local, regional and national research priorities, specifically, where individual plots in any period can be identified, ceramics, usage and perhaps status can be compared and the longevity of the plot looked at through the pottery usage and comparisons made between plots.

B.5.40 Closer examination of the pottery may indicate if the period of 'abandonment' from *c*.1550/1600 to *c*.1650 before re-occupation, noted in the Intercell House, Coldhams Lane excavation (Atkins 2012b; 2013) is paralleled here.

B.5.41 The 18th-19th century material offers various areas of research, including into the links with the Collegiate system. Documentary research would be required on the names found on the various vessels to help date the vessel and to tie it to, if possible, the particular college. The relatively large size of the assemblage should allow for better classification of the vessel types, decoration and more fully identify functional categories. The study of 18th and 19th/20th century ceramics has become more significant in British pottery studies in recent years and this assemblage expands knowledge of supply and use.

B.5.42 Comparison of this assemblage with that of the Intercell House, Eastern Gate Hotel and Harvest Way assemblages would provide a broader understanding of the usage of pottery across the Barnwell settlement in the medieval and later periods and especially the 18th and 19th century occupation. Documentary research can help establish the use of buildings and the occupations of residents and relate these to the material recovered from cellars and pits on the properties.

Further Work

B.5.43 Full recording of the excavation assemblage, excluding the cleaning of assemblages and any unstratified material, except where sherds are new forms or new fabrics. Identification to type of the Medieval Coarsewares sherds where possible. A number of undecorated Pearlware body and base sherds for which no refit can be established will be fully recorded but not retained.

B.5.44 Fully record and identify where possible, the transfer-printed decoration and any maker's marks to determine where possible the manufacturer of the ceramics.

B.5.45 If possible the assemblage should be compared with that of the Intercell House, Eastern Gate Hotel and Harvest Way assemblages.

B.5.46 Documentary research on the various names and initials recorded on the early modern pottery to establish connections with cooks or servants and colleges. (to be undertaken by specialist?)

B.5.47 Analysis of the assemblage on various field criteria, based on major stratigraphic units. Tabular statistics of fabric and vessel data.

B.5.48 Macroscopic inspection (based on x20 magnification) and description of all new fabric types.

B.5.49 Identification, description and illustration of new forms and traits, especially relating to local fabric types that are otherwise unpublished to date.

B.5.50 c. 9 vessels to be illustrated.

B.5.51 c. 31 vessels to be photographed to record decoration, form or maker's marks.

B.5.52 A report on the results of the above.

B.5.53 Pottery for illustration

Context	Fabric	Form	Decoration or details	Period
241	Medieval Coarse ware	Flared bowl/dish		3
266	Tin-Glazed Earthenware	Pear-shaped Jug	Painted decoration	2
281	Late Medieval Reduced ware	Handled jar	Rim and handle	2
282	South-east Fenland Medieval Calcareous Buff ware	Jar	Rim	2
297	Medieval Coarse ware	Jar	Rim	1
342	East Anglian East Anglian	Miniature bunghole pitcher	Bunghole and base	2
387	East Anglian Redware	Pipkin	Handle	2
387	East Anglian Redware	Pipkin	Handle	2
387	East Anglian Redware	Baluster jug	Base	2

Table 14: *Pottery illustration list*

B.5.54 Pottery for photography

Ctxt	Fabric	Form	Decoration or details	Pr
184	English Stoneware	Blacking bottle	Impressed mark	3
220	Creamware	Plate/serving vessel	Hudfon (Hudson) cook at Trinity in a copperplate hand in brown on base. Under glaze painted	

Ctxt	Fabric	Form	Decoration or details	Pr
221	Pearlware transfer-printed	Flared bowl, complete profile	Rustic landscape with figure in foreground and church in the distance by a river with willows. Printed marked on back Davenport with impressed anchor and Davenport marks	3
221	Pearlware transfer-printed		Trinity college crest on plate. Marked on back, stamped and transfer-printed Copeland & Garrett Late Spode	3
266	Early Post-medieval Redware	Drinking vessel	Kiln debris on base	2
266	Tin-Glazed Earthenware	Pear-shaped Jug	Painted decoration	2
311	Refined White Earthenware	Handle	Lion with gilded eyes and mane	
360	English Stoneware	Bottle	Impressed mark	3
360	English Stoneware	Bottle	Impressed mark	3
360	Pearlware transfer-printed	Bowl/plate	Transfer-printed pattern on a plate from St John's College	3
360	Pearlware transfer-printed	Bowl/plate	Transfer-printed pattern on a plate from St John's College	3
360	Pearlware transfer-printed	Bowl/plate	Transfer-printed pattern on a plate from St John's College	3
360	Pearlware transfer-printed	Bowl/plate	Same transfer-printed pattern as the Trinity College plate in context 221, painted on reverse with name LEACH over an impressed mark	3
360	Pearlware transfer-printed	Bowl/plate	Transfer-printed pattern on a plate from Trinity College	3
360	Pearlware transfer-printed	Bowl/plate/serving vessel	Transfer-printed pattern on a plate from Trinity College	3
360	Pearlware transfer-printed	Saucer	Design with Indian scenes	3
360	Pearlware transfer-printed	Saucer	Maker's mark	3
360	Pearlware transfer-printed	Drinking vessel/bowl	Crest/coat of arms from St John's or Christ's College	3
360	Pearlware transfer-printed/Refined White Earthenware	Bowl	HUDSON on rim and surviving H on outside of vessel	3
360	Pearlware transfer-printed/Refined White Earthenware transfer-printed	Drinking vessel/cup	Transfer-printed pheasant design	3
360	Refined White Earthenware	Bowl/plate	Wedgwood Green Glazed Majolica Vine Leaf Plate	3
360	Refined White Earthenware	Bowl/plate/serving vessel	Registration mark	3
402	Black Basalt	Jug/teapot		3
402	Creamware	Bowl/plate	Marked Claydon	3
402	Creamware	Drinking vessel/tankard	Mark?	3
402	Pearlware transfer-	Bowl/plate	JxC mark	3

Ctxt	Fabric	Form	Decoration or details	Pr
	printed			
402	Pearlware transfer-printed	Bowl/plate	Marked Claydon?	3
402	Pearlware transfer-printed	Drinking vessel/tea bowl?	American scene?	3
402	Yellow ware	Drinking vessel/mug		3
403	Creamware	Bowl/plate	Letter R on rim	3
435	Pearlware transfer-printed	Drinking vessel/mug	Impressed mark Imperial standard	3

Table 15: *Pottery photographic list*

Recommendations

B.5.55 After all the material has been recorded and reported upon, a selection and retention policy should be established and it is recommended that certain categories of material should be looked at for selection and retention.

- Due to the relatively small size of the medieval assemblage this material should be retained, except where the material is abraded and undiagnostic or is residual within an early modern context, the exception being for those sherds that constitute a new vessel form or fabric.
- All illustrated vessels should be retained.
- All photographed vessels should be retained.
- New vessel forms or fabrics from any period should be retained.
- Vessels linked to Cambridge Colleges should be retained.
- Complete or near-complete vessel should be retained.
- Vessels which retain decipherable maker's marks, pattern names or other marks, including registration marks, date marks and measurement marks should be retained.
- Vessels with unidentified transfer-printed scenes should be retained (where the section of the picture is large enough for the design to be described in sufficient detail that at a later date an identification could be made)
- Non-domestic vessels including early examples of plant pots may be retained.
- Any other vessels deemed of intrinsic interest identified during the full recording may be retained.

B.5.56 Spot Dating

Context	*Cut*	*Sherd Count*	*Weight (kg)*	*Date Range*	*Period*
1		4	0.123	1740-1830	3
7		10	0.136	1770-1840/1805-1900	3
11	**12**	4	0.017	1770-1840	3
14		3	0.025	1550-1800	2
16		2	0.012	1740-1830/1805-1900	3
23		2	0.01	1200-1400	2
26	**25**	10	0.117	1805-1840	3

Context	Cut	Sherd Count	Weight (kg)	Date Range	Period
31		4	0.032	1200-1300	2
38		1	0.002	1740-1830/1805-1900	3
50		2	0.002	1350-1500	2
59		30	0.063	1794-1840	3
63	**62**	13	0.048	1805-1840	3
68		1	0.026	1550-1800	3
78		5	0.046	1805-1900	3
99	**98**	1	0.004	1770-1840	3
101		8	0.063	1800-1900 (*c*.1800)	2
103		2	0.01	1740-1830	3
107	**98**	1	0.036	1770-1840	3
122	**122**	2	0.051	1550-1800	3
123		2	0.01	1770-1840	2
128		9	0.028	1770-1840	3
134		6	0.183	1820-1900	3
136	**135**	2	0.181	1550-1800	2
139		5	0.088	1580-1650	2
140	**141**	1	0.017	1350-1500	2
145		4	0.054	1480-1610	2
149	**148**	4	0.007	1800-1840	3
153	**154**	4	0.013	1200-1400/1350-1550	3
155	**158**	3	0.028	1200-1400	3
156	**158**	2	0.006	1820-1900	3
157	**158**	3	0.011	1200-1400	3
160	**142**	1	0.041	1550-1800	2
161	**142**	2	0.091	1580-1846	2
162	**142**	3	0.076	1660-1800 (1680-1700)	2
164	**142**	2	0.213	1630-1700	2
165	**142**	3	0.044	1660-1800	2
166	**142**	16	0.288	1350-1500/1450-1550	2
167	**168**	4	0.017	1350-1450	1
173	**174**	1	0.004	1400-1600	1
177	**178**	1	0.009	1800-1900	3
180	**179**	7	0.068	1800-1900 (*c*.1800-1840)	3
183	**185**	30	0.782	1820-1900 (*c*.1820-1840)	3
184	**185**	58	3.017	1820-1900 (*c*.1820-1840)	3
191	**192**	13	0.188	1820-1900 (*c*.1820-1840)	3
195		196	1.985	1740-1830/1775-1840	2
197	**196**	9	0.154	1830-1900 (*c*.1830-1840)	3
209	**210**	1	0.041	850-1200/1175-1300	1
220	**225**	22	0.981	1820-1900 (*c*.1820-1840)	3
221	**225**	42	0.626	1820-1900 (*c*.1820-1840)	3
223	**225**	5	0.259	1813-1930 (*c*.1813-1840)	3

Context	Cut	Sherd Count	Weight (kg)	Date Range	Period
234	**235**	1	0.002	1150-1400	1
241	**240**	16	2.693	1810-1900 (*c.*1810-1840)	3
244	**240**	11	0.337	1810-1900 (*c.*1810-1840)	3
251	**252**	15	0.172	1175-1350	1
258	**260**	1	0.004	1200-1400	1
264	**263**	3	0.019	1350-1500	1
266	**265**	140	3.001	1660-1800	2
267		8	0.099	1770-1840	3
269	**271**	3	0.05	1200-1400	1
270	**271**	1	0.018	1200-1400	1
275	**274**	24	0.152	1805-1840	3
281	**265**	86	1.723	1500-1600	2
282	**265**	33	0.709	1480-1600/1580-1700	2
283	**291**	1	0.042	1200-1400	1
285	**291**	1	0.053	1200-1500	1
292	**293**	19	0.151	1805-1840	3
297	**252**	19	0.235	1350-1500	1
304	**302**	1	0.002	1775-1840	3
307		6	0.051	1800-1840	3
311		28	1.452	1805-1840	3
322	**323**	8	0.07	1805-1840	3
325		2	0.007	1805-1840	3
333	**265**	26	0.87	1480-1610/1580-1700	2
338	**337**	1	0.042	1350-1500	1
341	**288**	5	0.058	1480-1600	3
342	**265**	27	0.775	1480-1610	2
343	**265**	7	0.131	1200-1400	2
344	**335**	4	0.226	1350-1500	1
345	**336**	2	0.029	1570-1846	2
353	**352**	2	0.011	1550-1800	2
355	**357**	2	0.097	1810-1900	3
358	**359**	1	0.005	1200-1400/1350-1500	2
360		321	16.175	1805-1840	3
362	**361**	7	0.08	1350-1500/1550-1800	1
363	**361**	1	0.012	1200-1400	1
371	**372**	103	1.412	1820-1900 (*c.*1820-1840)	3
373	**374**	159	2.636	1820-1900 (*c.*1820-1840+/-)	3
376	**375**	1	0.009	1150-1400	1
378	**375**	12	0.063	1350-1500/1550-1800	1
381	**379**	4	0.018	11501400/1350-1500	1
383	**382**	2	0.116	1550-1800	2
385	**384**	24	0.91	1805-1840	3
387	**450**	60	2.112	1660-1800/1745-1900	2
389	**388**	6	0.068	1794-1900 (1794-1840)	3
392		5	0.125	1550-1700	2
393	**452**	2	0.309	1350-1500	3

Context	Cut	Sherd Count	Weight (kg)	Date Range	Period
394	**453**	3	0.071	1200-1400/1350-1500	2
395		6	0.149	1700-1900	2
396	**543**	2	0.005	1500-1600	2
398		52	0.952	1825-1900 (1825-1840)	3
400	**399**	11	0.183	1550-1800 (1550-1700)	2
402	**401**	191	4.064	1820-1900 (*c.*1820-1840)	3
403	**401**	155	0.871	1805-1840	3
435	**452**	15	0.325	1805-1840	3
436	**436**	2	0.033	1200-1500	1
438	**437**	17	0.434	1805-1840	3
442	**441**	28	0.163	1350-1500	1
444	**443**	10	0.146	1430-1650	1
447	**445**	7	0.091	1350-1500	1
449	**450**	48	0.744	1550-1700	2
451	**450**	3	0.02	1200-1400	2
456	**450**	30	0.177	1480-1600/1580-1700	2
458	**457**	2	0.004	1200-1400/1770-1840	3

Table 16: *Pottery spot dating*

B.6 CBM, fired clay and limestone roof tile

By Rob Atkins

Introduction

B.6.1 A moderate assemblage of CBM, fired clay and limestone roof tile comprised 4032 fragments weighing 362.031kg was analysed and these dated from the medieval to modern (Table 17). These figures do not include those brick recorded on site, or CBM not retained from some of the post 1800 features.

CBM	Nos.	Wt (g)	No. Contexts	No. Features/layers
Brick	91	19745	16	12
Floor brick	2	874	2	2
Limestone roof	6	618	4	3
Peg tile	3916	338246	39	26
Ridge tile	6	879	3	3
Pantile	6	1544	3	3
Drain	3	94	2	2
Fired clay	2	31	1	1
	4032	**362031**		

Table 17: *CBM, fired clay and limestone roof tile by numbers and weight*

Methodology

B.6.2 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.6.3 The bricks, tile and fired clay/daub were recorded by colour. Difference in colour is affected by how much lime there is 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).

B.6.4 Brick walls and drains on site only dated to Period 3. The brick sizes from these features were recorded on site by the individual excavators (see below).

Results

B.6.5 The artefacts are listed below by type, number and period (Table 18).

Material	No. of contexts	No. fragments	Weight of artefacts (kg)	Period
Brick	3	5	828	1
Limestone tile	1	1	58	1
Peg tile	7	118	11004	1
Ridge tile	1	1	57	1
Brick	8	74	17774	2
Limestone tile	3	5	58	2
Peg tile	22	3771	325827	2
Ridge tile	2	5	822	2
Fired clay/daub	1	2	31	2
Brick	6	12	862	3
Floor brick	2	2	874	3
Peg tile	10	27	1415	3
Pantile	3	6	1544	3
Drain	2	3	94	3

Table 18: *CBM, fired clay and limestone roof tile by number and period*

The Brick Assemblage

Introduction

B.6.6 A small collection of bricks were recovered from the excavation (91 fragments weighing 19.74kg; Table 17). Form was identified utilising the Norwich type series (Drury 1993, 163-5) as well as my 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 has yet taken place. The Drury system is based on both measurements and fabric type. A catalogue of the brick from the excavation is included (Table 19).

B.6.7 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 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 Flemism bricks.

B.6.8 '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*, 164-165). 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 9×4¼ x 2¼ inches.

Results

Period 1 (medieval)

B.6.9 Just five medieval brick fragments (0.828kg) were found in medieval features. None of the bricks survived well enough to be classified by type and they could only be broadly dated as 14th to early 16th century. Only one brick had a measurable thickness 1¾" and this came from latrine **291**.

Period 2 (post-medieval)

B.6.10 Seventy-four brick fragments (17.774kg) were found in eight contexts. The vast majority were residual medieval brick found in two features (quarry pit **265** and latrine **450**). Both features were probably backfilled, with moderate or large quantities of artefacts in *c*.AD 1600, presumably in part from nearby buildings. Both features had several brick examples which could have been reused. All of the fragments varied in colour throughout from orange, red, pink to purple.

B.6.11 In quarry pit **265** from four deposits there were 56 medieval brick fragments (14.148kg). Eight fragments had widths surviving (two at 4", one at 4¼" and five at 4½") and 16 had measurable thicknesses (possible one at? 1¼, three at 1¾", 11 at 2" and one irregular one at 2¼). Where discernible most of the bricks were of sanded form, although one was vegetative. Latrine **450** contained 12 medieval brick fragments (3.17kg), and where discernible all were sanded. Three had measurable widths (one at 4" and two at 4½") and three thicknesses (two at 1½" and one at *c*.2"). It is likely that medieval brick was found in two of the other Period 2 contexts.

B.6.12 Only one Period 2 context had post-medieval brick fragments (ditch 135) and these date to the late 17th-early 19th century date.

Period 3 (*c*.AD 1800+)

B.6.13 Only six Period 3 contexts contained 12 brick fragments (0.862kg). All these fragments, where discernible, dated from the 18th century at the earliest and all could have been made in the 19th century. A perforated example from layer 16 was at least mid 19th century in date. It should be noted that brick had often not been kept from these late contexts especially those dating to the 20th century, but their presence was recorded in their context sheets (7, 53, 134, 162, 311 (perforated brick) and 371).

B.6.14 There were a few brick walls and drains found within site, and these all dated to Period 3. Many of the brick walls were recorded on 19th and 20th century maps. The bricks of these features were recorded on site:

Bakers and grocers (60 Newmarket Rd), 'L' shaped building to the south and associated courtyard (Fig. 5)

B.6.15 Culvert (121) within the courtyard, aligned north to south, may have been the earliest brick structure in this part of the site. It seems to run into Newmarket Road and comprised a mixture of yellow and orange unfrogged bricks (215mm x 105mm x 70mm).

B.6.16 The buildings in this area seem to relate to a single period of construction two co-joined buildings which respected/were associated with Judd's Passage and were only first recorded on the 1830 Baker map. Along the entire eastern boundary of Judd's passage was wall 39 (yellow/orange brick unfrogged 240mm x 100mm x 60mm), which was the western wall of the two co-joined buildings. Various rooms survive in both buildings, with some floors paved with brick. Walls 76/119 comprised a mixture of yellow and red unfrogged bricks 215mm x 105mm x 60mm. Wall 34 only consisted of yellow brick (220mm x 105mm x 65mm). Walls 22 and 100 comprised some orange and yellow unfrogged bricks measuring 220mm x100mm x 60mm. Walls 2 and 3 included orange and yellow bricks of different thicknesses, but significantly wall 2 also contained yellow perforated bricks.

B.6.17 Wall 97 comprised some orange and yellow unfrogged brick 220mm x100mm x 60mm. Walls 46 and 95 also contained yellow perforated brick (240mm x 100mm x 70mm). Wall 55 may have been the external east-west wall running to the neighbouring malthouse. This wall had yellow perforated brick (240mm x 100mm x 70mm). Internal brick drain (130) used unfrogged bricks (220mm x 100mm x 60mm).

B.6.18 Three brick internal floors (96, 196 and unnumbered) comprised a mixture of orange and yellow unfrogged bricks. The orange bricks measured 220mm x 100mm x 65mm with the yellow 220mm x 100mm x 60mm in size.

B.6.19 The courtyard had at one point in its existence been at least partly paved in brick (57). This consisted of grey engineered brick 240mm long x 100mm x 80mm. Beneath the courtyard a fragment of a ?Victorian brick drain culvert (54/294) survived and it had been constructed with red brick 220mm x 100mm x 70mm in size. Within the north-western corner of the courtyard was part of brick structure(s) (walls 21 and 19/118). Bricks in wall 21 were mainly yellow brick and the occasional orange brick 215mm x 105mm x 70mm whilst wall 19/118 had yellow and orange unfrogged bricks 220mm x 110mm x 75mm in size.

B.6.20 In the late 20th century a cellar was built into the courtyard in its eastern side and comprised walls 42 and 52 using fletton bricks (225mm x 105mm x 75mm) with frogs within whuich was stamped the name *Hicks and Gardener/Fletton/Peterborough*.

Jolly Butchers (Butchers and pub; 59 Newmarket Rd)

B.6.21 The Jolly Butchers was a butchers/pub building recorded at corner to Abbey Road and Newmarket Road and is first shown on the 1820's parish map. The southern wall (87) of this building only survived within the excavation area and consisted of yellow unfrogged brick 220mm x 105mm x 65mm in size. An internal small cellar (88) comprised yellow/orange bricks 210mm (8¼") x 102mm (4") x 60mm (2½"). These bricks have some cracks on faces and their arrisses are reasonably well made and date from sometime between the late 17th and early 19th centuries. At a later date in the 20th century, an internal wall (90), comprising fletton bricks, was inserted and it butted up to

wall 87. Well (182) directly to the south of the pub had similar yellow unfrogged bricks. Two 20th century soakaways (71 and 74) were located within the pub courtyard had fletton type bricks (225mm x 110mm x 65mm) with a very slight frog and were stamped '*Central Whittlesea*'.

Other buildings and drains to the south of the pub courtyard

B.6.22 Mendicity owned building first shown fronting on Abbey Street on 1820's Parish map wall 108 consisted of yellow unfrogged bricks 220mm (8½") x 104mm (4") x 65mm (2½") in size. To the east a fragment of a floor (332) comprising frogged brick would date from after 1775 and was probably early 19th century in date. An outbuilding (8) which fronted onto Judd's Passage had yellow unfrogged bricks 220mm x 102mm x 65mm. A large brick culvert (137) ran into this manhole and its brick were 200mm x 100mm x 80mm in size.

B.6.23 Two terrace houses fronting Abbey Rd (wall 326) consisted of a brick/stone wall with the brick recorded on the context sheets as measuring 200mm x 100mm. Cellar (walls 312, 313 and 333) used a mixture of bricks (yellow, orange and red), all unfrogged except those perforated. The yellow unfrogged bricks 220mm (8¾") x 106mm (4¼") x 60mm (2½"). This building was cut by an east to west aligned fletton brick wall 331.

Discussion

Medieval

B.6.24 It is presently uncertain when medieval brick was first being used within the Newmarket Road as Period 1 was deliberately broad for this PXA to encompass the whole medieval. It is probably significant that the earliest contexts in which bricks were found at Coldhams Lane dated to *c*.AD 1350-1400 (Atkins 2015). 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 were from Period 2.4 contexts and probably date to around the mid 14th century (Atkins forthcomingb). 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.6.25 A mid 14th century date (1334/5) is recorded for brick-making in Ely (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). Elsewhere in Cambridgeshire archaeological and documentary evidence suggests there may have been an increase in very late medieval bricks making; 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).

B.6.26 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 brick making area in Cambridge; St John's College organised the production of its own bricks by an indenture of 1511 and a brick-maker 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 close to the east of the Coldhams Lane site.

B.6.27 All of the medieval brick fragments at Newmarket Road varied in colour from orange, red, pink to purple. This is very similar to Lucas's description of bricks from Ely (see above) and Drury's analysis of medieval brick from Norwich. This type brick was by far the most common medieval brick type found within this Barnwell Priory lay settlement (Atkins 2013; Atkins forthcoming). It is interesting to note that this fabric does not appear in comparative assemblages at Ramsey Abbey (Ryan 2009), Wisbech Castle (Atkins 2010), Bury St Edmunds (Atkins 2014) and different from the bricks used at St John's College. This may suggest that the bricks possibly had been made in Ely, but not presumably made at Ramsey, Wisbech or the St John's, Cambridge brickworks.

B.6.28 Medieval brick would have been relatively expensive with only the relatively well-off being able to afford it. There is no evidence that medieval brick was used within contemporary buildings or features on this Newmarket site, but this may be due to the poor survival of medieval remains of these buildings. Building 1 only consisted of a few post holes and Building 2 comprised a largely robbed wall and a possible latrine but these were made in clunch stone. At Coldhams Lane medieval brick was used within a Period 3 cess-pit (**229**; Atkins 2013), and this shows that some lay areas of this medieval settlement were able to afford (or were 'given' bricks presumably from the priory).

B.6.29 In two Period 2 features (quarry pit **265** and latrine **450**), both may have been backfilled *c*.AD 1600 or slightly later, there were moderate quantities of quite unabraded brick. It is uncertain if these derived from buildings within our Newmarket Road site, from robbed priory buildings or even the Harvest Way site – it is noticeable that a high status medieval 16th century building (as seen by a brick and stone cess-pit **1424**; Atkins forthcoming) went out of use in this period..

Post-medieval

B.6.30 There were no mid 16th to mid 17th century brick found within the site. Indeed there were only a handful of bricks dating to the late 17th or 18th century. The lack of early post-medieval brick is therefore in contrast to the medieval brick from the site. In other parts of the Barnwell lay settlement there were only two probable 17th century buildings made with contemporary brick: a cellar of a probable inn (**2062**) at Harvest Way and the Bolt Bolt inn which was recorded by photographs before its demolishment in 1959 (Atkins forthcoming). The lack of 18th century brick built features at Newmarket Road is mirrored at Coldhams Lane (Atkins 2015), but not at Harvest Way where there was a possible stable block, buildings fronting Newmarket Road built with clunch and in a couple of cases also brick, and some boundary walls (Atkins forthcoming). All these structures were built with with orange to red sandy brick.

B.6.31 At Newmarket Road brick buildings were constructed within the site between *c*.AD 1813 (parish map) and 1830 (Baker map). Nearly all brick were made from a gault clay which produced a yellow or very light orange fabric and these bricks were unfrogged. All or most of these bricks are extremely likely to have come from brickworks located from at least *c*.1800, just to the south-east of the site (recorded on the 1807-12 Enclosure Map). Perforated brick was used within buildings shown for the first time on the 1830 Baker map. These bricks are extremely early examples of this brick type. Perforated bricks are recorded being patented by the nearby brickmaker Robert Beart of Godmanchester Mill from at least 1834 and continued into the 1850s (for example Beart 1852; Trinder 2003).

B.6.32 Two or three separate brickworks were recorded on the 1830's and 1840's maps around this Barnwell area to the north-east and east of the site. It was not a coincidence that there was a concentration of brick kilns located here – there was good clay beds for brick making, next to the river and a major road for transportation and significantly it

was very close within a large area where there was (to be) a very large growth in population/housing. These economic factors probably was a major reason for expansion in this part of Cambridge. It has been long recognised by economic and social historians than an active building trade 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.6.33 This concentration of brickmaking is well-known from elsewhere *e.g*. at Northampton where there are significant similarities to Barnwell. Four adjacent brick kilns were recorded in the far northern segment of Northampton and these accounted over half of its brickmakers. This location was an area of good clay beds, next to the turnpike road 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	Pr
16	1	39		Yellow. Perforated brick. Later type	Mid 19th+	Layer	3
23	1	1		Pink to slightly purple	?	Layer	2
26	5	153		Mixed fragments varies from orange/pink, to red to purple	?	Wall 25	3
136	4	436		Yellow. Marks showing excess clay scrapped off. A few small internal holes	Late 17th-early 19th	Ditch **135**	2
156	1	268		yellow	late 18th-mid 19th	Pit **158**	3
197	1	282		Orange	18th-early 19th	Pit **196**	3
264	1	313		Orange. Poorly made	?14th-early 16th	Ditch **263**	1
266	24	6448	1) 115mm (4½") 50mm (2") 2) 115mm (4½") 50-52mm (2") 3) 110mm (4¼") 53mm (2") 4)? 35mm (1¼") 5) 50mm (2")	1) One part orange-pink to red (1.467kg). Sanded but has many vegetative impressions on base. Mould impression. Some cracks on faces. Reasonably well made. 2) Orange to red (1.235kg). Sanded. Not well made. Uneven faces. Some cracks. Arrises v.poor 3) Orange (1.368kg). Sanded. Not well made 4) Purple (0.527kg). Sanded. Complete thickness? 5) Red-purple. Sanded. Burnt black on base only. After firing – has it been used in oven 19 fragments (1.546kg) Orange to orange to red to purple	14th-early 16th	Quarry **265**	2
281	13	3165	1) 50mm (2") 2) 42mm (1¾") 3) 51mm (2") 4) 49mm (2") 5) 48mm (2") 6) 52mm (2")	13 brick fragments. Orange; orange/red to purple. All poorly made. 1 mould mark. 1 burnt. No. 6 has frequent vegetative impressions (0.469kg). it is poorly made. Cracks. Poor arrises	14th – early 16th	Quarry **265**	2
284	1	356	43mm (1¾")	Red to purple	14th – early 16th	?latrine **291**	1
333	14	4287	1) 104mm (4") 52mm (2") 2) 104mm (4") 44mm (1¾") 3) 115mm (4½") 56mm (2¼") 4)114mm (4½") 53mm (2") 5) 117mm (4½")	1) Orange/red sandy (0.676kg). Sanded. Ok arrises 2) Orange/red sandy (0.462kg). Ok arrises 3) Red to purple (0.701kg).Sanded, but has some vegetative impressions. Poorly made. Irregular. Mould mark. Poor arrises. 4) Red to purple (0.698kg). Sanded. Poorly made. Some internal voids 5) Red to purple (0.452kg). Poorly made	14th-early 16th	Quarry **265**	2

			43mm (1¾")	Nine fragments (1.298kg)			
342	5	248		Five small fragments. Orange + red to purple	?14th – early 16th	Quarry **265**	2
385	1	120		Orange	?	Sewer **384**	3
387	12	3170	1) 41mm (1½") 2) 105mm (4") 40-44mm (1½") 3) 115mm (4½) 4) 115mm (4½") 52-55mm (2"-2¼")	1) One part pink to purple (0.328kg). Sanded Poorly made. Creased face. 2) Pink to purple (0.788kg). Sanded. Poorly made. Uneven. Cracked faces. 3) Pink to purple (0.752kg). Sanded. Poorly made. Cracked faces. Mould impression 4) Deep orange to red to slightly purple (0.746kg). Surface has wafer thin yellow lense. Sanded. Very poorly made. Excess clay scraped off mould. Cracked faces. Arrises very poor. Uneven Eight fragments orange to red/pink to purple (0.556kg)	14th-early 16th	?latrine **450**	2
393	3	281	2) 65mm (2½")	In two fabrics: 1) One red (0.064kg) 2) Two yellow (0.217kg)	Late 18th-mid 19th	Pit **452**	3
394	1	19		Pink to purple	?14th – early 16th	?Quarry **441**	2
442	3	159		Red to purple	?14th – early 16th	?Quarry **441**	1
	91	**19745**					

Table 19: *Catalogue of brick*

The Floor bricks

B.6.34 There were just two floor brick fragments (0.874kg) were recorded in features (not including those *in situ* brick floors recorded above on site). Both fragments were from post 1800 contexts (Table 20)

Ctxt	No	Wt (g)	Dimensions	Comments	Brick date	Feature and period
244	1	732	40mm (1¾")	?floor brick		Quarry **240** /3
385	1	142	28mm (1")	Orange	18th/19th	Sewer **384** /3
	2	874				

Table 20: *Catalogue of floor brick*

Limestone roof tile

B.6.35 Six limestone roof tile fragments (0.618kg) were found. one fragment came from a medieval ditch (263) and five from within two post-medieval features (pit **265** and **450**; Table 21).

Ctxt	No	Wt (g)	Comments	Feature	Period
264	1	58		Ditch **263**	1
333	2	278	One is 148mm+ long and up to 14mm thick	Quarry pit **265**	2
342	1	33		Quarry pit **265**	2
387	2	249		latrine **450**	2
	6	618			

Table 21: *Catalogue of limestone roof tile*

Ceramic peg roof tile

B.6.36 A large assemblage of peg tile comprising 3916 fragments (338.246kg) from 39 contexts was recovered (Table 22). Tile from medieval and post-medieval features were kept, but from Period 3 features they were largely discarded, although their presence was noted on context sheets.

B.6.37 In Period 1,118 fragments (11.004kg) were recovered from six features. Half the tile by weight came from two deposits in latrine **291**, with 30 fragments (5.589kg). The collection from this deposit was relatively unabraded with three with complete widths and an average weight of 186.3g per fragment. The tile were either in a fully oxidised orange or yellow sandy fabric. A moderate quantity of peg tile was also found in quarry pit **441** with 60 fragments (3.813kg), but these were relatively abraded sherds in four different fabrics. The other six features had only small quantities of peg tile.

B.6.38 There was a large quantity of peg tile (3771 fragments (325.827kg)) from 11 post-medieval features and layers. Two different features (quarry pit **265** and latrine **450**) had the notable primary assemblages of peg tile. The former had 3387 fragments (298. 684kg) from six deposits. These tile were principally in four different fabrics suggesting they derived from different buildings or building(s) which had been repaired over time. The peg tile from latrine 450 comprised 329 fragments (24.146kg) from two deposits. They were mostly either in a fully oxidised orange or an orange with grey core. Only one other feature (well **142**) had over 1kg of peg tile from it, with 18 fragments (1.184kg) from five deposits.

B.6.39 In Period 3 only 27 fragments of tile (1.415kg) were retained from 10 different features and layers. There were small fragments of peg tile in all these deposits.

Ctxt	No	Wt (g)	Comments	Feature	Period
14	2	37	In two fabrics: A) Orange oxidised (0.014kg) B) Yellow/orange (0.023kg)	Layer	2
16	1	19	Fully oxidised orange	Layer	3
23	1	3	Orange with grey core (0.003kg)	Layer	2
24	2	46	In two fabrics: A) Yellow/orange mixed (0.023kg) B) One fully oxidised (0.023kg)	Layer	3
26	2	96	In two fabrics: A) Orange oxidised (0.042kg) B) Yellow/orange (0.054kg)	Wall **25**	3
134	2	136	Orange with grey core. 1 sub-rounded peg hole? peg type	Layer	3
139	3	56	In two fabrics: A) Two orange with grey core (0.035kg) B) One fully oxidised orange (0.021kg)	Layer	2
140	2	199	In two fabrics: A) One fully oxidised orange (0.180kg). 1 sub-rounded peg hole 2 peg type B) One orange with grey core (0.019kg)	Pit **141**	2
161	1	29	Orange with grey core	Well **142**	2
162	2	350	In two fabrics: A) One Yellow/red mixed (0.322kg). 1 sub-rounded peg hole 2 peg type B) One fully oxidised orange (0.028kg)	Well **142**	2
164	2	104	In two fabrics: A) Yellow/red mixed (0.054kg). 1 sub-rounded peg hole 2 peg type B) Orange oxidised (0.05kg)	Well **142**	2

165	10	652	In three fabrics: A) Four yellow oxidised (0.366kg) 1 sub-rounded peg hole? peg type B) Three orange oxidised (0.135kg) C) Three orange with grey core (0.151kg)	Well **142**	2
166	3	49	In two fabrics: A) Two fully oxidised yellow (0.036kg) B) One fully oxidised orange (0.013kg)	Well **142**	2
184	4	210	In two fabrics: A) Three orange fully oxidised (0.185kg) B) One orange with grey core (0.025kg)	Well **185**	3
195	3	45	In three fabrics: A) One orange with grey core (0.012kg) B) One fully oxidised orange (0.02kg) C) One yellow/red mixed with some reduced grey (0.013kg)	Layer	2
220	1	32	Orange with grey core	Pit **225**	3
264	10	541	In four fabrics: A) Four orange fully oxidised (0.208kg) B) Four orange with grey core (0.230kg) C) One yellow fully oxidised (0.02kg) D) One yellow/red with grey (0.083kg)	Ditch **263**	1
266	207	13239	In four fabrics: A) 61 fully oxidised yellow (4.589kg) 2 sub-rounded of 2 peg type. One sub-rounded of 1 peg type. Three sub-rounded of? peg type B) 22 poorly mixed yellow/red some with grey core (1.617kg). 1 is 5½" wide C) 25 orange with grey core (1.775kg) D) 99 fully oxidised orange (5.257kg). Seven sub-rounded 2 peg type. Two of? peg type	Quarry **265**	2
281	130	8134	In four fabrics: A) 4 yellow/red with some reduced grey (408g). Poorly made. One sub-rounded peg hole 1 peg hole type. B) 42 yellow fully oxidised (2.658kg). Two sub-rounded peg holes 2 peg hole type. 1 sub-rounded peg hole of? peg type C) 16 orange with grey core (1.088kg) D) 71 orange fully oxidised (3.981kg) One sub-rounded peg holes 2 peg hole type; Two sub-rounded peg holes of? peg hole type	Quarry **265**	2
282	188	9065	In three fabrics: A) 50 Orange with a grey core (2.678kg). One sub-rounded peg hole of 1 peg type. One sub-rounded peg hole of? peg type. B) 104 orange fully oxidised (4.121kg). Two sub-rounded peg hole of 2 peg type. Three sub-rounded peg holes of? peg type. C) 34 yellow fully oxidised (2.266kg). One has a 6" width. One sub-rounded peg hole of 1 peg type. One sub-rounded peg hole of 2 peg type. Three sub-rounded peg hole of? peg type.	Quarry **265**	2
283	19	3525	In two fabrics: A) 11 yellow fully oxidised (2.409kg). Two have couple widths. One 6" wide has one sub-rounded peg hole of 1 peg type. The other 6¼" wide has one sub-rounded peg hole of 1peg type. One further fragment has one sub-rounded peg hole of 1 peg type. B) 8 orange with reduced grey core (1.116kg)	latrine **291**	1
284	11	2064	In two fabrics: A) 8 Yellow fully oxidised (1.828kg). 1×6¼" wide. 1x 6" width. One sub-rounded peg hole of 2 peg type B) 3 fully oxidised orange (0.236kg)	latrine **291**	1
325	2	57	In two fabrics: A) Fully oxidised yellow (0.03kg) B) Fully oxidised orange (0.027kg) One sub-rounded peg hole? peg hole type.	Layer	3
333	2708	253678	In four fabrics: A) 244 Fully oxidised yellow (33.131kg). Nine have widths (two at 6½" and seven at 6").Four have one sub-rounded peg hole 1 peg type. Nine have one sub-rounded peg holes of 2 peg type. Six have one sub-rounded peg holes of? peg type. B) 552 Orange with grey core (51.630kg). One has 7" width (is of 1 peg hole type). Others: Fifteen one sub-rounded peg hole of 1 peg type;	Quarry **265**	2

			seven have one sub-rounded peg hole of 2 peg type and eighteen have one sub-rounded peg holes of? peg type. C) 1855 Orange fully oxidised (163.355kg). One complete length (10"). One 7" width. 15 at 6½" width. 89 peg holes- all sub-rounded except one sub-square. 80 had peg holes of 2 peg type. Eight had peg holes of? type. D) 57 yellow/orange sometimes with reduced grey core (4.562kg). Poorly mixed. Two have widths at 5½" (one has sub-rounded peg hole of 1 peg type. Two have widths at 5¾" and one is 6" wide.		
338	15	930	In three fabrics: A) 10 orange oxidised (0.645kg) B) Two orange with grey core (0.123kg) C) Three yellow (0.162kg)	Pit **337**	1
342	71	5545	In five fabrics: A) 17 yellow fully oxidised (1.682kg). One sub-rounded peg hole 1 peg hole type B) 34 Orange fully oxidised (2.864kg). Three sub-rounded peg hole 2peg hole type C) 11 orange with grey core (0.482kg). One? peg hole type D) Four yellow/red mixed (0.311kg) E) Five yellow/red mixed with grey (0.206kg). Poorly mixed.	Quarry **265**	2
343	83	9023	In four fabrics: A) 19 Orange with grey core (1.686kg). One sub-rounded peg hole 2 peg type B) 42 orange fully oxidised (4.946kg). Four sub-rounded of 2 peg hole type. Two sub-rounded peg holes of? peg type C) 19 Yellow fully oxidised (2.235kg). One width 6¼". Four sub-rounded of 1 peg hole type. One sub-rounded of? peg hole type D) 3 Yellow/orange and red mixed (0.156kg)	Quarry **265**	2
351	2	66	Orange with grey core	Post hole **350**	1
353	14	1016	In two fabrics: A) 12 orange oxidised (0.908kg) B) 2 yellow oxidised(0.108kg)	Quarry **352**	2
355	1	45	Fully oxidised orange	Pit **357**	3
363	1	65	Fully oxidised orange	Pit **361**	1
383	1	69	One fully oxidised orange. One sub-rounded peg hole 2peg hole type	Quarry **382**	2
385	2	195	In two fabrics: A) One yellow with grey core (0.034kg) B) One orange oxidised (0.161kg)	Sewer **384**	3
387	324	23830	In five fabrics: A) 19 fully oxidised yellow (1.556kg) B) 152 Fully oxidised orange (11.987kg). 2 widths 161 and 163mm. One sub-rectangular peg hole 2 peg type. 13 sub-rounded peg holes 2 peg types. 6 sub-rounded of? peg type C) 140 Orange with grey core (9.428kg) 4 sub-rounded 1 peg type. 1 sub-rounded of ?peg type D) 7 Yellow/red mixed with grey core (0.454kg) E) 6 orange with white chalk inclusions (0.405kg)	latrine **450**	2
393	10	579	In two fabrics: A) Five fully oxidised orange (0.371kg). One sub-rounded peg hole 2 peg type B) Five orange with grey core (0.208kg). One sub-rounded peg hole? peg type	Pit **452**	3
394	1	14	Fully oxidized orange	Pit **453**	2
395	5	316	In three fabrics: A) Three fully oxidized orange (0.268kg) B) One orange with grey core (0.022kg) C) One yellow (0.026kg)	latrine **450**	2
396	10	374	In three fabrics: A) Two yellow oxidized (0.112kg) one sub-rounded peg hole? peg type B) Five orange (0.149kg) C) Three orange with grey core (0.113kg)	Pit **453**	2

442	60	3813	In four fabrics: A) 41 fully oxidized yellow (2.409kg). Two sub-rounded peg hole 2 peg type. One sub-rounded peg hole? peg type B) Eight fully oxidized orange (0.591kg) C) Two orange with grey core (0.265kg) D) Nine yellow/red poorly mixed (0.548kg)	Quarry **441**	1
	3916	338246			

Table 22: Catalogue *of peg tile*

Ceramic ridge tile

B.6.40 Six ridge tile (0.879kg) was found in three features (Table 23). Period 1 pit **441** had a single small ridge tile fragment, and two Period 2 features (quarry pit **265** and latrine **450**) had five fragments.

B.6.41 Six ridge tiles comprise less than 1% 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 tile (Atkins 2015), Harvest Way with 22 out of 4909 medieval to modern tiles (Atkins forthcoming) and Brunswick a single fragment out of 735 (Atkins 2012a). Elsewhere in Cambridgeshire the percentages were similar to Barnwell 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	Period
342	1	179	Orange fully oxidized	Quarry **265**	2
387	4	643	In three fabrics: A) One orange oxidized (0.12kg) B) Two orange with grey core (0.404kg) C) One yellow fully oxidized (0.119kg)	latrine **450**	2
442	1	57	Yellow fully oxidized	?Quarry **441**	1
	6	879			

Table 23: *Catalogue of ridge tile*

Pantile

B.6.42 Six pantile fragments were found in three Period 3 two features and a layer (Table 24).

Ctxt	No	Wt (g)	Comments	Feature and Period
59	2	577	A) Orange (0.231kg). Has nibb B) Yellow (0.346kg)	Layer, Period 3
184	2	52	Orange	Well **185**, Period 3
244	2	915	A) Orange (0.652kg). Has nibb B) Yellow (0.263kg)	Quarry **240**, Period 3
	6	1544		

Table 24: *Catalogue of pantile*

Ceramic drain

B.6.43 Three ceramic sewer drain fragments were recovered from two Period 3 features.

Ctxt	No	Wt (g)	Comments	Feature and Period
26	2	13	Ceramic sewer pipe (Late 19th-20th century)	Wall **25**, Period 3
197	1	81	Ceramic sewer pipe (Late 19th-20th century)	Late 19th-20th: Pit **196**, Period 3
	3	94		

Table 25: *Catalogue of ceramic drain*

Fired clay

B.6.44 Only two very small undiagnostic fired clay fragments (31g) came from Period 2 quarry pit **265**.

Ctxt	No	Wt (g)	Comments	Feature and Period
281	2	31	Creme sandy	Quarry **265**, Period 2
	2	31		

Table 26: *Catalogue of fired clay*

B.7 Clay pipe

By Craig Cessford

Summary

B.7.1 The excavation produced 1296 fragments of clay tobacco pipe weighing 3361g, representing a minimum of 109 clay tobacco pipes. The material spans the period *c.* 1700/40–1850 and is a regionally significant assemblage. Six Cambridge pipemakers can be identified from the presence of initials or names on over 40 pipes. There are also over twenty decorated pipes with no pipemakers marks. The assemblage is dominated by material from three pits, one of which contains an exceptional number of pipes. All three assemblages probably relate to a single property and likely to have been deposited within a short period in the 1820's. This represents the most significant assemblage of this period recovered from Cambridge. These assemblages appear to relate to an inn or similar institution; this lends them particular significance as other groups linked to similar establishments have been recovered during previous archaeological investigations in the vicinity. Significant discoveries include pipes with masonic decoration produced by William Balls and evidence that at some stage this decoration was deliberately 'removed' from the pipemaking mould, the largest archaeologically recovered group of pipes with the initials T/M which were probably produced by Thomas Moule, the first identification of a stem mark of the pipemaker Robert Nutter and evidence relating to the pipemaker Anne Pawson.

Introduction

B.7.2 The archaeological excavations produced a moderately sized assemblage of clay tobacco pipe; totalling 1296 pieces, weighing 3361g and with a total stem length of 51.297m (Table 27). The excavation material equates to a minimum of 109 clay tobacco pipes (MNI: Minimum Number of Items). In addition a further 87 pieces weighing 180g and including some bowls were recovered during the evaluation phase, unfortunately there is no specialist report concerning these and the bowls are not described (Barlow and Thompson 2014, appendix 1). This gives an overall total of 1383 fragments weighing 3541g for the evaluation and excavation combined. This represents the second largest assemblage (by count) and the third largest (by weight) recovered from an archaeological investigation in Cambridge, exceeded only by that from Grand Arcade and in the case of weight the nearby site of Harvest Way. The assemblage from 132–36 Newmarket Road is of broadly the same size as that recovered from the nearby Harvest Way site and substantially larger than that from the slightly more distant Eastern Gate

Hotel site, although in some respects the three sites can effectively be considered a single assemblage as the divisions between them are essentially arbitrary (Table 27). All other clay tobacco pipe assemblages recovered from the general vicinity appear to be relatively negligible, for example investigations at Intercell House produced only 20 stem fragments weighing 46g (Atkins in Atkins 2013, 87). The material from 132–36 Newmarket Road consists of bowls and bowl fragments (121, 515g), heels/spurs (55, 207g) and stems/mouthpiece fragments (1120, 2639g). For quantification purposes re-fitting fragments that appear to represent recent breakages have been counted as one.

B.7.3 The bowls were classified according to Oswald's simplified general typology (1975, 37–41), modified slightly based upon the author's unpublished research on clay tobacco pipes from Cambridgeshire (Table 28). Stem bore dating has not been undertaken as the assemblage does not warrant this form of analysis. As far as can be determined the pipes are exclusively 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. 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 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), London and Glasgow 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, following the Eastern or Barnwell Fields Inclosure Act of 1807 Cambridge expanded rapidly eastwards. Pipemaking came to be almost exclusively concentrated in this area – where the 132–36 Newmarket Road site is located – by the 1820's, with the exception of one kiln. At this time Newmarket Road was known as Sun Street (west of the junction with East Road) and George Street (east of the junction with East Road), documentary evidence indicates that the clay tobacco pipe industry was located solely in the George Street area Based upon bowl typology and other characteristics there is no definitely 17th century material present in this assemblage. It appears that the earliest material in the assemblage dates to *c.* 1700–40, although the quantity of definitely 18th century material is relatively low (see below). The latest material in the assemblage appears to date to the early/mid-19th century, in particular the absence of marked material associated with the Cleaver family suggests that the assemblage probably contains no material of the 1850's or later. Clay tobacco pipe production finally ended in Cambridge in the 1890's.

Site	Location	Count	Weight (g)	MNI	Reference
132–36 Newmarket Road	Barnwell suburb	1296	3361	109	This report
Harvest Way	Barnwell suburb	878	3578	126	Cessford in Atkins in prep
Eastern Gate Hotel	Barnwell suburb	384	1072	39	Cessford in Newman 2013, 85–87
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 in Cessford 2007, 352–56 Cessford in Newman

					2007, 84–85
Cornfield Court plus Old Divinity School	Town centre street block	422 (212+210)	2361 (1522+839)	105 (75+30)	Cessford in Newman 2008, 224–29 Cessford in Cessford 2012, 95, 106
Merton Hall	Private residence	165	Unk.	22	Meckseper 2014

Table 27: *Clay tobacco pipe from 132–36 Newmarket Road (excluding material from the evaluation phase) and selected other Cambridge assemblages*

Temporal Profile

B.7.4 In total 48 bowls could be typologically dated (Table 28), this can also be expressed as a decadal frequency (Table 29). The earliest material recovered dates to *c.* 1700–40, this is considerably later than the nearby Harvest Way and Eastern Gate sites where the earliest material dated to *c.* 1640–60 (Cessford in Atkins in prep; Cessford in Newman 2013). Based upon bowl typology and makers' marks the latest pipes present need be no later than the 1840's. This is an extremely atypical temporal profile for a clay tobacco pipe assemblage in Cambridge, whilst it is in large part due to the recovery of three substantial early/mid-19th century assemblages this does not provide a complete explanation. It appears, based upon the clay tobacco pipe assemblage, which the investigated area was relatively little utilised in the 17th and 18th centuries, but that activity increased markedly in the early 19th century. This would fit with the evidence that the plot within which the site was located is shown as empty on the Inclosure map of 1808, but by 1820 it had been built upon. The lack of post 1850 material is also remarkable given that the site continued to be occupied. One possibility is that at some stage the area was sealed by either a solid surface, such as paving slabs or cobbles, or that it was heavily built over with structures, as either of these scenarios would significantly curtail deposition of material.

Type	Dates	MNI
12	*c.* 1730–80	1
13	*c.* 1780–1820	13
14	*c.* 1820–40	1
21	*c.* 1700–40	1
23	*c.* 1760–1800	1
24	*c.* 1810–40	4
Early/mid-19th	*c.* 1820–50	27
Total	***c. 1700–1850***	***51***

Table 28: *Clay tobacco pipes dated based upon bowl typology, examples dated based upon pipemakers marks are not included as this would distort results*

Decade	Adjusted decadal bowl count
1700's	0.25
1710's	0.25
1720's	0.25
1730's	0.45
1740's	0.2
1750's	0.2

Decade	Adjusted decadal bowl count
1760's	0.45
1770's	0.45
1780's	3.5
1790's	3.5
1800's	3.25
1810's	4.38
1820's	10.83
1830's	10.83
1840's	10.33

Table 29: *Quantities of clay tobacco pipes deposited per decade, based upon bowl typology*

Pipemakers Marks

B.7.5 The names or initials of six local Cambridge makers are represented on 41 or 42 pipes of the 109 pipes. This represents a relatively high proportion of pipemakers names/initials (37.6 or 38.5%) from Cambridge and indeed Cambridgeshire more generally, where such marks generally constitute less than 25%. A number of the names and initials represented are particularly significant; this includes evidence for the pipemaker William Balls, which compliments evidence from the nearby Harvest Way site, the first recognition of the stem mark of the pipemaker Robert Nutter, the largest known group of pipes marked with the initials T/M and evidence for Anne Pawson.

B.7.6 **Balls and W/B**: twelve stems with the mark BALLS/CAMB within a faint rectangle were recovered from fill 402 of pit (**401**) additionally two heels with the initials W/B were recovered, one from pit (**372**) and a second with masonic symbols on the bowl from pit (**374**). An additional two bowl fragments with identical masonic symbols were recovered from (**374**), indicating that at least three such pipes produced by this maker are present. In additional some similar pipes with extremely faint traces of masonic decoration were recovered in pit (**372**) (one example) and pit (**401**) (five examples) (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 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 until 1841. Two sons of William and Mary Anne Balls of George Street were baptised in April 1841, however by the time of the 1841 census, taken in June, William Balls was not living at George Street, or indeed elsewhere in Cambridge. None of the Balls family of pipemakers appear to be have been active in Cambridge at the time of the 1841 census, although it is possible that this only represented a short term absence. Later in the 1851 census James Balls a pipemaker was living at the Man in the Moon at Staffordshire Place. Also resident there were Mary A Balls a pipe trimmer and George E Vigo an apprentice pipe maker. 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. There are a few examples known, including three from the nearby Harvest Way site and one example from the Grand Arcade site in a feature dated to *c.* 1813–23. 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). Pipes with masonic decoration appear to be rare locally and the only examples previously recovered at archaeological investigations in Cambridge are those from the nearby Harvest Way site.

B.7.7 **?/H**: One heel with an unidentifiable first initial and a surname beginning with the letter H was recovered from **pit** (**374**), although only partially surviving the associated bowl was decorated with stylised oak leaves on its front and rear. There are two known early/mid-19th century Cambridge pipemakers with surnames beginning with H: Robert Handley and James Hoyle, although Handley is the more likely candidate. Robert Handley was born *c*. 1807 and was living on George Street in 1839 when he married and subsequently had children during the 1840's. He appears to be absent from the 1841 census, however it is possible that the pipemaker George Handley aged 30 and living on George Street is in fact an erroneous entry for Robert Handley. Robert was apparently working in Cambridge until 1850, but by the time of the 1851 census he had moved to Lincolnshire. James Hoyle was the father of Emanuel Hoyle of Fitzroy Place, who married Caroline Carman at Saint Andrew the Less in 1847. As there is no evidence to indicate that James Hoyle actually worked in Cambridge it is more likely that Robert Handley produced this pipe.

B.7.8 **T/M**: Eighteen examples of the initials T/M on the heels of pipes were recovered from six contexts fill 371 of pit **372** three examples, fill 373 of pit **374** eleven examples, fill 389 of pit **388** one example, layer **398** one example, fill 402 of pit **401** two examples). In three instances these were associated with bowls of *c*.1780–1820, there were also three distinctively shaped bowls (all from pit (**374**) that are of early/mid-19th century form. There is a further bowl from pit **374** which probably bears the initials T/M, although the detail is unclear. This occurs on a bowl that is significantly larger than the rest of this assemblage, there are three such bowls that are probably identical although the other two lack the heel portion. Whilst the form of these bowls appears superficially to be 18th century (*c*.1730–80) they do not appear to be residual and it is more likely that they are a relatively unusual early/mid-19th century form. Thomas Moule is listed in trade directories as working on George Street in 1830–39, but was not present in Cambridge at the time of the 1841 census. Two examples of the initials T/M were recovered at the nearby Harvest Way site and one example was discovered at Grand Arcade (a bowl of *c*.1810–40 in a feature dated to *c.*1830–50).

B.7.9 **Robert Nutter and R/N**: A stem with the mark ROBERT NUTTER/CAMBRIDGE within an oval and a heel with the initials R/N were both recovered from pit **240**, these both probably relate to a single pipe but do not refit. This represents the first recognition of this stem mark from Cambridge, although pipes with the initials R/N have been recovered at several sites, including an example from Grand Arcade in a feature dated *c.* 1830–50. Robert Nutter was living on George Street at the time of the 1841 census. Living with him, and presumably working for him, were the pipemakers Richard Webb (aged 15) and George Disbury (aged 16). Robert Nutter is not listed in a trade directory of 1841, suggesting that he may have started working for himself relatively recently. The census gives his age as 35, suggesting that he was the son of Thomas and Catherine Nutter baptised at St. Peter's parish in Cambridge in 1802. This suggests that he is unlikely to have produced marked pipes prior to *c*. 1823.

B.7.10 **Pawson and A/P**: Three stems with the mark PAWSON/CAMB within an oval were recovered (two in pit **374** and one in pit **401**) and three heels with the initials A/P were recovered from pit **401**, one with a bowl of *c*. 1780–1820. Six pipes with a starburst design on the heels were recovered fro, m layer 038 one example with an early/mid-

19th century bowl, pit **293** one example, pit **359** one example with a bowl of *c*.1780–1820, pit **372** one example and fills 402 and 403 of pit **401** one example each. There is evidence from a number of sites, particularly a large group from Merton Hall which has unfortunately been published in insufficient detail (Meckseper 2014), that this heel motif was employed by the Pawson's and there is currently no evidence that any other Cambridge pipemakers employed it. At Merton Hall there were 22 marked stems stamped PAWSON CAMB plus five bowls with spurs with 'small stars (Meckseper 2014, 63–65, fig. 3). This high concentration appears to be associated with a fireplace. Whilst it cannot be regarded as conclusive, it is likely that most if not all pipes with starbursts on the heel were produced by the Pawson's. James Pawson worked at 11 Sidney Street between 1786 and 1813 (Cessford 2001b), an advert in the Cambridge Chronicle on the 6th of October 1813 stated that 'ANN PAWSON, widow of James Pawson, … pipemaker …intends to carry on the business which her late husband has conducted for so many years, at the premises in Sidney Street'. In his will James left Anne his stock in trade, implements and utensils used in his business as pipemaker. Ann Pawson of Sidney Street was buried on the 8th of August 1823, aged 59 years. Pawson stem marks are common in Cambridge, however almost all the known examples appear to have been produced by James Pawson and examples that can be unambiguously attributed to Ann Pawson are rare.

B.7.11 **J/S**: Two heels with the initials T/S or more probably J/S were recovered from pits **372** and **374**. There are no known Cambridge makers of the appropriate early/mid-19th date with the initials T/S so these were probably produced by John William Saul, whowas married at Holy Trinity in 1818, was the nephew of Anne Pawson and worked at the same Sidney Street premises as her. Saul was presumably was working there by 1818, although in what capacity is unclear, and he ran the kiln after Anne's death in 1823 until *c*. 1830. Pipes with these initials on the heel are known from Cambridge (Flood 1976, 41) and Chesterton.

Decorated Pipes

B.7.12 Excluding milled rims and simple elements confined to spurs/heels there are 23 pipes with four types of decoration on the bowl or heel, no decorated stems were identified. The heel decoration consists of six examples with starbursts, which are probably associated with the Pawson family (see above), and a single instance with circles on the heel from pit **401** with a bowl of early/mid-19th century form. The bowl decoration consists of:

B.7.13 1) Fourteen small early/mid-19th century bowls that have stylised oak leaves on front and rear of bowl but are otherwise plain (one from pit **225**, five from pit **372** including examples on bowls of *c*.1780–1820 and *c*.1820–1840, eight from pit **374** including examples on early/mid-19th century bowls and one pipe probably produced by Robert Handley). This represents the most common form of 19th century decoration on pipes found in Cambridge.

B.7.14 2) Two small fluted bowls with stylised oak leaves on front and rear of bowl from pits **374** and **401**. This form of decoration is the second most common on 19th century pipes found in Cambridge.

B.7.15 3) Four small bowls with cross keys designs on the side of the bowl and lines or highly stylised oak leaves on front and rear (one from pit **372**, three from pit **374**). Bowls with cross keys designs were manufactured by a number of Cambridge pipemakers, particularly members of the Cleaver family from the 1850's onwards (Flood 1976, 24, figs. 9.c–e), but these examples represent a rather earlier development of this form of

decoration. A similar example was found at the Harvest Way site. Although it is often assumed that cross keys pipes were produced for inns of the same name (eg. Flood 1976, 24) there is no evidence in most instances to support this. The crossed keys can also be viewed as a Roman Catholic symbol, as they are closely linked with the papacy and the Holy See. More locally the symbols association with St. Peter means that it is used in various contexts by Peterhouse College. There is, however, no evidence that any of these associations played any role with regard to the clay tobacco pipes in Cambridge.

B.7.16 4) Three largish bowls with masonic symbols on the sides of the bowl and stylised oak leaves on front and rear, one of which has the initials WB on the heel, all from pit **374**. Several similar examples were recovered from the nearby Harvest Way site. In addition there are six pipes that appear to have probably been produced from the same mould that have only extremely faint traces of masonic decoration presents (one from pit **372**, five from pit **401**). Whilst pipemaking moulds can become somewhat worn through prolonged usage this appears to represent a different phenomenon. It seems that the mould (almost certainly made from iron at this date) was deliberately altered to remove the masonic elements and create a mould for plain pipes. If this is the case then the features with these pipes should post-date those with pipes bearing the masonic decoration proper. No examples of bowls with the masonic decoration largely removed were recorded at the Harvest Way site, although it is possible that they were not recognised at that time.

Noteworthy Context Assemblages

B.7.17 The overall assemblage is dominated by the material from three pits. Only one other context produced more than five pipes (MNI); this was cultivation layer 195, with an MNI of seven. This assemblage is rather atypical as it consisted almost entirely of stem and heel/spur fragments, with no complete bowls and only a single bowl fragment. This suggests that the deposit has been heavily disturbed by cultivation, largely destroying the more fragile bowls.

B.7.18 The plot within which pits were located is shown as empty on the Inclosure map of 1808, by 1820 it had been built upon and the three pits with significant assemblages were probably located in the courtyard of a building (Atkins pers.comm.). By the time of the 1885 1st edition Ordnance Survey map this was a public house and it may well have been one at considerably earlier date. These groups appear to represent rapidly deposited 'clearance' type groups of material (Cessford 2009; Cessford in prep). One method for considering this is to consider the mean stem length in contexts, as longer fragments typically represent more rapid deposition (Table 30). The mean stem lengths vary markedly for the three groups, indicating that they may represent somewhat depositional processes. Based upon excavations elsewhere in Cambridge most assemblages with ten or more pipes (excluding residual items) typically have a non-domestic origin and are usually associated with inns or other similar establishments.

	MNI	No. of fragments	Total stem length (mm)	Mean stem length per fragment (mm)	Mean stem length per pipe (mm)
Overall assemblage	109	1296	51297	39.6	470.6
Overall assemblage less selected contexts	26	343	11615	33.9	446.7
371	16	274	9087	33.2	567.9
373	52	486	22517	46.3	433
402	15	193	8078	41.9	538.5

Table 30: Clay pipe m*ean stem lengths*

B.7.19 [371] (pit fill, cut [372], *c*. 80% excavated): MNI 16 pipes, suggesting the presence of *c*. 20 in the original overall assemblage. This is a coherent early/mid-19th century group with no identifiably residual material present. Typologically there are six bowls of *c.*1780–1820, one of *c.*1820–40 and three that are early/mid-19th century. Pipemakers present in the assemblage include T/M (probably Thomas Moule, active 1830–39 and potentially earlier), ?J/S (probably John William Saul, active *c*. 1823–30) and W/B (William Balls, active *c*. 1813–41). Additionally the presence of starbursts on a heel may be linked to the Pawson family. There are six decorated bowls; five with stylised oak leaves on the front and rear of the bowl and one with a cross keys designs on the side of the bowl and lines or highly stylised oak leaves on front and rear. There is also one bowl with 'removed' masonic decoration.

B.7.20 Context 373 (pit **374**, *c.* 60% excavated): MNI 52 pipes, suggesting the presence of *c.* 87 in the original overall assemblage. This is an exceptionally large group, even if only the number of pipes actually recovered is considered. This is a coherent early/mid-19th century group, although a small number of residual earlier stem fragments are present. Typolocially there is a single bowl of *c.* 1780–1820, three of *c.* 1810–40 and fifteen that are early/mid-19th century. Pipemakers represented in the assemblage include W/B (William Balls, active *c*. 1813–41),?/H (probably Robert Hadley active *c.* 1839–50/51 and potentially earlier), T/M (probably Thomas Moule, active 1830–39 and potentially earlier) and ?J/S (probably John William Saul, active *c*. 1823–30). There are sixteen decorated bowls; eight with stylised oak leaves on the front and rear of the bowl, two fluted bowls with stylised oak leaves on the front and rear of the bowl, three with a cross keys designs on the side of the bowl and lines or highly stylised oak leaves on front and rear and three with masonic symbols.

B.7.21 Context 402 (pit **401**, *c.* 90% recovered): MNI 15 pipes, suggesting the presence of *c*. 17 in the original overall assemblage. This is a coherent early/mid-19th century group with no identifiably residual material present. Typologically there are two bowls of *c.* 1780–1820 and eight that are early/mid-19th century. Pipemakers present in the assemblage include Balls (William Balls, active *c*. 1813–41), A/P and Pawson (Anne Pawson, active 1813–23) and T/M (probably Thomas Moule active 1830–39 and probably earlier). The only decorated bowl is fluted with stylised oak leaves on front and rear; there are also five bowls with 'removed' masonic decoration. There are a number of fragments that indicate the presence of red painted mouthpieces. In addition there was a small quantity of material in context 403, the lower fill of pit **401**.

Ctxt	MNI	Date	Balls	Moule	Pawson (starburst heels in brackets)	Saul	Oak leaves	Fluted with oak leaves	Cross keys	Masonic, 'removed' in brackets
371	16	*c*. 1823–30	1	3	(1)	1	5		1	-1
373	52	*c*. 1823–25	1	11	2	1	8	2	3	3
402	15	*c*. 1823–25	12	2	3 (1)		1			-5
1994	12	*c*. 1823–30	3		(1)					3

Table 31: Selected elements of four clay pipe assemblages from 132–36 Newmarket Road and Harvest Way

B.7.22 There was no stratigraphic evidence to indicate the sequence of the three pits (Atkins pers.comm.) and at the time this report was written no other artefactual dating evidence was available to the author. Based upon the clay tobacco pipe evidence it is possible to propose a sequence, which also includes another group from the nearby Harvest Way site fill 1994 of pit **1995**. These four assemblages were probably deposited within a relatively short period in the mid-1820's. Whilst it is possible that the three pits from 132–36 Newmarket Road are all contemporary and relate to a single phase of activity in the property this is unlikely given the variations between the three assemblages. Assemblages pits **372** and **1995** were probably deposited before pits **374** and **401**, the earlier assemblages most probably date is *c*.1823–25 and the later to *c*.1823–25 (pit **401**) and *c*.1823–30 (pit **372**). As well as providing dating for these assemblages and indicating their relative sequence this has several other implications. It provides dating evidence for the decorated bowls that cannot be linked to particular pipemakers and also indicates that Thomas Moule who is known to have been active *c*.1830–39 had begun working in Cambridge by *c*.1825.

Discussion

B.7.23 The clay tobacco pipe assemblage from 132–36 Newmarket Road represents one of the largest groups recovered from archaeological investigations in Cambridge to date and is of regional significance. The assemblage should be incorporated into the overall publication of the site, preferably in conjunction with the material from the Harvest Way and Eastern Gate Hotel sites. There are several aspects of the assemblage that are of particular significance. The groups that date to the 1820s are particularly significant as they provide a large closely dated sample that is unparalleled within Cambridge. These assemblages are unlikely to be of domestic origin given their size and if they can be linked by documentary research to a particular inn or other establishment this would increase their significance. Other inn related groups have been recovered nearby from Harvest Way and a rather later group from Eastern Gate (F.83, MNI 63 deposited *c*. 1886–90; Cessford in Newman 2013). Taken in conjunction these assemblages possess considerable analytical potential for studying clay pipe usage at inns in this suburb of Cambridge over time. Ideally any consideration of this would occur in conjunction with other types of material culture from the assemblages. Such analysis could also compare the material to a number of inn related assemblages recovered from sites in central Cambridge.

B.7.24 Issues that can be considered with regard to inn related pipe assemblages include the relative proportions of decorated and undecorated bowls and the presence of bowls with markedly different capacities. At some establishments the proprietor was probably buying batches of pipes from a single local manufacturer (indicated by the presence of only a single type of pipe or the presence of a restricted range of forms), whilst at others the customers appear to have brought their own pipes (characterised by a wide range of types of pipe). It is possible to try and distinguish the two types of pipe supply and quantify this based upon assemblage homogenity.

B.7.25 The Barnwell suburb expanded markedly in the 19th century, at a greater rate than the rest of Cambridge. The temporal profile of this assemblage, plus those from the Eastern Gate Hotel and Harvest Way sites, could be compared to other assemblages in Cambridge to determine is this difference is identifiable. From the 1820s onwards clay tobacco pipe production was largely located in the Barnwell suburb where the Harvest Way site is located, with the exception of a single kiln located at 11 Sidney Street (Cessford 2001b). It is noteworthy that whilst products from the Barnwell suburb are regularly discovered at town centre sites, those from the town centre kiln are largely

absent from Barnwell suburb assemblages. The 1820s assemblages from 132–36 Newmarket Road did include some products from the 11 Sidney Street kiln, suggesting that the 1820's was in some respects a 'transitional' period.

B.7.26 Other aspects of significance include the recovery of several more pipe bowls with masonic decoration, adding to the similar material recovered from Harvest Way. The identification of bowls where masonic decoration has been 'removed' from the pipemaking mould adds significantly to this. This 'removal' combined with the fact that pipes with masonic symbols have not been found at any sites other that 132–36 Newmarket Road and Harvest Way may indicate that such pipes did not prove popular. Also significant in terms of understanding the local clay tobacco pipe industry are the significant number of pipes marked T/M, several pipes that can be specifically associated with Anne Pawson and the recovery of the pipe produced by Robert Nutter.

B.7.27 Pipes that warrants illustration include those marked T/M, the pipes produced by Anne Pawson and the pipe produced by Robert Nutter. The pipes with 'removed' masonic decoration also warrant illustration. Given the closely dated nature of the large assemblages it would also be appropriate to illustrate a range of the decorated and undecorated bowls.

APPENDIX C. ENVIRONMENTAL REPORTS

C.1 Faunal remains

By Chris Faine

Introduction

C.1.1 Thirty Kilograms of faunal material was recovered from the Newmarket Road excavations consisting of 811 fragments, of which 456 were identifiable to species (56.2% of the sample). All bones were collected by hand apart from those recovered from environmental samples; hence a bias towards smaller fragments is to be expected. Faunal material was recovered from a variety of features dating from the following periods (**1**: 1200-1538 AD, **2**: 1538-1800 AD and **3**: 1800+)

Methodology

C.1.2 All data was initially recorded using a specially written MS Access database. Bones were recorded using a version of the criteria described in Davis (1992) and Albarella and Davis (1994). In brief, all teeth (lower and upper) and a restricted suite of parts of the skeleton was recorded and used in counts. These are: horncores with a complete transverse section, skull (zygomaticus), atlas, axis, scapula (glenoid articulation), distal humerus, distal radius, proximal ulna, radial carpal, carpal 2+3, distal metacarpal, pelvis (ischial part of acetabulum), distal femur, distal tibia, calcaneum (sustenaculum), astragalus (lateral side), centrotarsale, distal metatarsal, proximal parts of the 1st, 2nd and 3rd phalanges. At least 25% of a given part had to be present for it to be counted. The presence of large (cattle/horse size) and medium (sheep/pig size) vertebrae and ribs was recorded for each context but not used in counts. Where practicable, these elements have been attributed to taxon and numbers present estimated on the basis of vertebra centra and the heads of ribs. This information is retained on the animal bone database. Each element was identified to species where possible using comparative collections and reference manuals. Siding was noted for the purposes of calculating MNI's. Where applicable the number of diagnostic zones was noted for each element (after Serjeantson 1986). Epiphyseal fusion data was also noted (after Silver 1969). Tooth wear data for domestic mammal loose molars and mandibles (after Grant 1982) was recorded to provide further ageing data. In addition to adult molars the presence of any other teeth i.e. deciduous was also noted. Where possible sexing was carried out via morphological criteria (e.g. Hatting 1995, Armitage and Clutton-Brock 1976, or metrical analysis (e.g. Grigson 1982, Ruscillo 2006 and Greenfield 2002. Metrical analysis followed Von Den Driesch 1976, Von Den Driesch & Boessneck 1974, Grigson 1982 & Payne and Bull 1988. This information was used to aid in species differentiation e.g. between sheep and goat (after Boessneck 1969, Halstead *et al* 2002 & Payne 1969). Identification of horse vs other equids was carried via morphological criteria after Baxter 1998, Davis 1980 and Eisenmann 1981.

Species Distribution

C.1.3 Tables 32 & 33 show the range of species present in the assemblage by period. The vast majority of identifiable fragments were recovered from Period 2 contexts, with negligible amounts from Periods 1 and 3. Aside from small numbers of cattle and sheep the majority of Period 1 material consists of fish (eel), and anuran amphibian remains from environmental samples. Period 3 contexts again consisted of small numbers of

domestic mammals along with a single rabbit fragment. As one would expect the Period 2 assemblage is dominated by domestic taxa. In terms of numbers of fragments (NISP) and number of individuals (MNI) of sheep/goat are the dominant taxon, with smaller numbers of cattle. The MNI method is less affected by recovery bias and other factors such as differing body mass between species, and can be seen as more reliable method of assessing the importance of domestic taxa. Pig is a minor taxon with extremely limited numbers of horse (NISP 3) being recovered. Commensal and wild mammals are rare, consisting of two cat and one rabbit fragment. Bird remains were recovered entirely from Period 2 contexts, consisting of goose, duck and fowl remains. Only 2 wild birds elements were recovered (both corvids). Environmental samples yielded more eel remains, along with cod and anuran amphibians.

C.1.4 The vast majority of faunal material from Period 2 was recovered from pits, wells and latrine contexts. Significantly 73.5 % of all identifiable fragments from Period 2 were recovered from fills of pit **265**. Figure 7 shows the distribution of the main domesticates compared to other contemporary assemblages. Just under half of Post-Medieval urban assemblages surveyed by Higbee (Forthcoming), display roughly equal numbers of cattle and sheep remains, with most Medieval assemblages from Cambridge and the surrounding area showing greater numbers of sheep. Other sites in East Anglia that show similar distributions include St Peter's St, Northampton (Williams, 1979) and St Johns St., Bedford (*Baker et al*, 1979) and Lincoln Castle, Dobney *et al* 1996). Another group show higher instances of cattle (notably in Norwich). These include Kings Lynn (Noddle 1977) and Alm's Lane (Atkin *et al* 1985). The higher instances of sheep seen on many sites in the Late Medieval period continues into the Post-Medieval, and is indicative of the importance of the wool trade, for which East Anglia was an important centre.

Cattle

C.1.5 As mentioned above a single fragment of cattle was recovered from Period 1, in the form of an adult 2nd phalanx from pit fill **378**.

C.1.6 All Period 2 cattle remains were recovered from fills of pit 265. Figure 8 shows the body part distribution. All skeletal elements are present, with more robust elements such as distal tibia and radii being over-represented. Along with the large number of crania this suggests the processing of whole carcasses or live animals. The more expensive cuts of meat (fore-quarter etc) are absent. The large numbers of phalanges could also suggest some initial industrial processes (I.e. tanning) could be taking place at the same time. A relatively large number (53.8%) of cattle fragments show evidence of butchery. The majority of butchery marks observed suggest disarticulation of whole carcasses with heavy knives or cleavers. Long bones were chopped either midshaft or distally, with astragali and calcanii split in two. Preparation of cuts of meat is demonstrated by a series of cut marks on the necks of scapulae from contexts **333** & **281**. A single inominate from context **281** was sawn through at the acetabulum. A juvenile cranium from context **266** displayed cut marks at the occipital condyles around the foramen magnum, possibly from the removal of the hide for calfskin/vellum. Heavy butchery of the type seen here is related to the size of cattle carcasses, with similar techniques being observed at the Grand Arcade (Higbee forthcoming) and Sawston (Cessford & Mortimer 2004). The suggestion that industry such as horn working may have been taking place is suggested by the use of saws, a tool almost entirely associated with industry at both the Grand Arcade and Castle Mall, Norwich (Albarella *et al* 2009; Higbee forthcoming).

C.1.7 Unfortunately due to the fragmented nature of much of the assemblage there is an insufficient number of ageable epiphyses to provide a meaningful sample. All calcanii and metatarsals from the assemblage, along with earlier fusing elements, are fused, indicting the presence of adult animals (3.5 years of age onwards). There is evidence for cattle breeding on site, with neonatal elements being recovered from contexts **165**, **266**, **333**, **387** & **394**. Although an extremely small sample this mortality pattern is similar to that seen at the Grand Arcade (Higbee Forthcoming) and Lincoln (Dobney et al 1996, 1996) and may represent an increase in the importance of dairying noted in many sites nationally, with a greater number of veal calves being available as a by-product. This intensified in the 16 & 17th Centuries (Trow-Smith 1957).

C.1.8 Cattle remains from Period 3 contexts are limited to a fragmentary humerus from pit fill **156** and two 1st phalanges from layer **138** and pit fill **220**.

Sheep/Goat

C.1.9 As with cattle, a large proportion (79%), of Period 2 sheep remains were recovered from pit fills (**265**, **450** & **453**). Figure 9 shows the body part distribution for the assemblage. Tibiae are the most prevalent element, along with radii and crania/mandibles. Meat bearing elements (femora/humerii), are present in roughly equal numbers. Metapodia are under-represented in the assemblage and it may be that they were disposed of elsewhere as raw materiel for bone working or left attached to hides. Like the cattle remains the assemblage represents evidence of both primary butchery and light industrial processes. This is similar to that seen at the CAU Eastern Gate site (Newman, 2013).

C.1.10 Figure 10 shows the age profile in terms of mandibular wear stages. No mandibles younger than 2 years old are present, with the majority of animals being killed from the ages of 2.5 to 6 years of age. This is also borne out by epiphyseal fusion data (Figure 11). There is some evidence of breeding in the form of neonatal bone from pit fills **266** & **282**, along with partial skeleton from pit fill **394**. As mentioned above the importance of wool production in Britain increased in the Late Medieval period, and as a result the majority of Post-Medieval sheep were slaughtered later to maximise both wool yield along with meat. In some cases this could be for several seasons after prime carcass weight had been reached (Trow-Smith, 1957). Forty one percent of elements showed evidence of butchery. The majority of these were chops with a heavy knife to long bones, with vertebrae split longitudinally to produce sides of mutton. Smaller cut marks are limited to distal tibia, humeri and femora, and are indicative of finer disarticulation of carcasses. As with the cattle assemblage, heavier butchery is feature of sites Cambridge not generally seen elsewhere in the country. Evidence of bone working was observed in the form of a sawn femur from pit fill **281** and a femur from pit fill **342** with a series of cut marks concentric round the shaft.

C.1.11 Withers heights were available for 16 animals from Period 2 contexts, with an average withers height of 55.8cm. This is far smaller than equivalent animals from the Grand Arcade and is in fact closer to the Saxo-Norman mean (Higbee Forthcoming). Whilst Medieval sheep are described as being homogeneous in size (Trow-Smith, 1957), the phenomenon of improved breeds in the later Medieval and Post-Medieval (as a response to the growing importance of meat as well as wool) is well attested to both in literary and archaeological sources. However, the introduction of such breeds was by was means a uniform process nationally, with larger breeds being identified at some sites earlier than others (Dobney and Reilly 1988). It is clear that the animals from Newmarket Road are not improved breeds. However, the sample size is too small and the phasing of the assemblage too broad to properly consider the question here.

Pig

C.1.12 Twenty two pig elements were recovered from Period 2 contexts, consisting primarily of lower limb elements with few upper limbs and single instance of scapula. Neonatal elements were recovered from pit fill **281**. Ageable epiphyses were scarce, however all metatarsals (NISP:10) were unfused distally suggesting animals 2 year of age at death or younger. Butchery is confined to 4 instances of long-bones chopped midshaft. It appears pigs were raised nearby and slaughtered on seasonal basis primarily for meat (being limited in the secondary products they can provide). A similar pattern can seen in the Grand Arcade assemblage (Higbee Forthcoming). Other sites such as Lincoln (Dobney *et al*1996), suggest slaughter of even younger pigs. This being associated with improved faster growing breeds. However, the sample is too small with which to draw any further conclusions from.

Horse

C.1.13 As mentioned above horse remains are extremely rare, consisting of 2 scapulae from pit fills **343** & **400** and an astragalus from layer **195**. All were from adult animals. The specimen from **343** displays an elongated supragleonoid tubercle, extending round in a hook shape toward the inner face of the glenoid. This may have affected movement of the shoulder joint. No sign of trauma or infection was observed and the exact cause of this trait remains unclear.

Wild/Commensal Species

C.1.14 No wild mammal remains were recovered from any phase, suggesting such resources played little part in the economy of the site. An adult cat femur was recovered from pit fill **281** along with a juvenile humerus from the same context. Fish remains were recovered from both Period 1 & 2 contexts, with the assemblage from Period 1 consisting entirely of eel remains. Eels are common food fish widely available from nearby waterways and further afield in the fens. Some eel remains were recovered from Period 2 along with larger numbers of cod. Whilst it is likely that cod would have reached Cambridge in a preserved state (smoked or salted), the presence of both vertebra and cranial elements suggest both whole fish and fillets were consumed.

C.1.15 Bird remains were recovered entirely from Period 2. Goose is the dominant taxon along with smaller numbers of domestic fowl, duck and 2 examples of wild corvid (rook and jackdaw). Twenty seven goose fragments were recovered, consisting mainly of distal leg and wing bones, along with smaller numbers of humeri and femora. Aside from 2 elements all goose bones were recovered from pit **265**. A single cut mark was observed on a distal tibiotarsus from pit fill **282**. No sub adult elements were recovered. Geese were most likely kept for meat, eggs and feathers. It has been suggested that the Late Medieval/Post Medieval period saw an increase in the exploitation of geese for meat rather than feathers, which would result in more juvenile elements in the assemblage (Albarella et al 2009). However, his type of change is difficult to observe archaeologically due the fast maturation rate of geese, with all bones being fused by 12 weeks (Serjeantson 2002). Medieval geese tended to be eaten either in May or June (“green geese”) or in September/October (stubble geese”), which would coincide with Stourbridge Fair (Kear, 1990). Serjeantson (2002), used metrical analysis of long bones to differentiate between older and younger geese past the 12 week maturation period from Medieval Winchester and Eynsham. Abbey. Though few such bones were available from the Newmarket Road sample, those that were are of similar sizes to older birds found at both sites (16 weeks old onwards). Only two instances of medullary bone were recovered indicating females in lay. This is to be expected as,

unlike fowl, geese do not breed year round and it would not be economical to kill breeding birds. Geese were widely available to all strata of society in both the Medieval and Post Medieval periods, with flocks often being quite large. In 16th century Lincoln 60 geese was considered a suitable flock for a commoner (Thirsk 1957).

C.1.16 Fewer numbers of duck remains were recovered, consisting of a wide variety of elements, including a cranium from pit fill **266**. A partial skeleton was recovered from pit fill **282**. Duck remains are almost always outnumbered by goose remains in Medieval and Post-Medieval assemblages. Documentary sources suggest that exploitation of domestic ducks did not become widespread until the Late Medieval period (Albarella and Thomas 2002), with no domestic ducks being listed in London poultry trade documents until the late 14th Century (Kear 1990). It was commonly believed that eating duck meat was unhealthy (Albarella, 1997).A higher number of duck remains were recorded in the Post Medieval layers from the Grand Arcade in contrast to earlier phases, although all remains were from the same context (Higbee Forthcoming). No butchery was observed on any element in the assemblage, nor were any juvenile elements that would show evidence of breeding. It is likely that ducks played a limited role in the local economy and were probably occasionally hunted wild birds.

C.1.17 Eighteen fowl bones were recovered from Period 2 contexts, with 3 being identifiable as bantam sized birds. Material was recovered from pit **265** and layer **195**, consisting of a number of lower limb elements and coracoids. Juvenile remains were recovered from layer **195** and pit fill **261**. Single male and female elements were recovered from **266** and **195** respectively. The importance of fowl varies in Post-Medieval urban assemblages, making up 42-85% of domestic bird NISP (Higbee Forthcoming). Although small in comparison to nearby assemblages, it appears that fowl were kept and bred on site from variety of products including meat and eggs. Evidence from other site suggests an increase in the importance of birds for meat in this period, demonstrated by the increase of younger birds. This has been not yet seen to be the case in sites within Cambridge (Ibid).

Conclusions/Summary

C.1.18 The medieval assemblage is too small for any conclusions or comparisons. In contrast for the post-medieval there was a moderate assemblage which is typical of post-medieval urban assemblages. It represents general processing waste, largely from initial butchery of whole carcasses, with some carcass by products being used in light industries such as tanning and horn working. The types of animals represented in the assemblage and the husbandry techniques employed are generally similar to other sites both close by and in East Anglia as a whole. Sheep, which are the dominant species in all periods, were primarily managed for their wool with meat production also important but still secondary. The cattle husbandry regime focused on beef, veal and dairying. Pigs were slaughtered at a young age to provide pork. Geese and fowl were exploited for meat, eggs and feathers. Along with further work on the other Barnwell assemblages, this sample will help to answer further questions about the environs of post-medieval Cambridge, particularly with respect to the presence of improved livestock and the “agricultural revolution".

	1 (1200-1538)		2 (1639-1800)		3 (1800+)		
	NISP	**NISP %**	**NISP**	**NISP %**	**NISP**	**NISP %**	**Total**
Cattle (*Bos*)	1	4.8	108	25.4	3	42.9	**111**
Sheep/Goat (*Ovis/Capra*)	5	23.8	217*	50.8	2	28.7	**225**
Pig (*Sus scrofa*)	0	0	22	5.2	1	14.2	**23**
Horse (*Equus*)	0	0	3	0.7	0	0	**3**
Cat (*Felis sylvestris*)	0	0	2	0.4	0	0	**2**
Rabbit (*Oryctolagus cuniculus*)	0	0	1	0.2	1	14.2	**2**
Domestic Goose (*Anser sp.*)	0	0	27	6.3	0	0	**27**
Domestic Fowl (*Gallus sp.*)	0	0	18	4.2	0	0	**18**
cf Bantam	0	0	3	0.7	0	0	**3**
Duck (*Anas sp.*)	0	0	11	2.5	0	0	**11**
Jackdaw (*Corvus monedula*)	0	0	1	0.2	0	0	**1**
Rook (*Corvus frugelius*)	0	0	1	0.2	0	0	**1**
European Eel (*Anguilla Anguilla*)	10	47.6	4	0.9	0	0	**14**
Cod (*Gadus morhua*)	0	0	8	1.9	0	0	**8**
Anuran amphibian (*Rana/Bufo*)	5	23.8	2	0.4	0	0	**7**
Total	**21**	**100**	**428**	**100**	**7**	**100**	**456**

Table 32: *Species distribution for the assemblage (NISP)*

	1 (1200-1538)		2 (1639-1800)		3 (1800+)		
	MNI	**MNI %**	**MNI**	**MNI %**	**MNI**	**MNI %**	**Total**
Cattle (*Bos*)	1	7.9	25	20.3	3	50.2	**29**
Sheep/Goat (*Ovis/Capra*)	4	30.7	41	33	1	16.6	**46**
Pig (*Sus scrofa*)	0	0	12	9.8	1	16.6	**13**
Horse (*Equus*)	0	0	3	2.4	0	0	**3**
Cat (*Felis sylvestris*)	0	0	1	0.8	0	0	**1**
Rabbit (*Oryctolagus cuniculus*)	0	0	1	0.8	1	16.6	**2**
Domestic Goose (*Anser sp.*)	0	0	13	10.5	0	0	**13**
Domestic Fowl (*Gallus sp.*)	0	0	7	5.6	0	0	**7**
cf Bantam	0	0	2	1.6	0	0	**2**
Duck (*Anas sp.*)	0	0	6	4.8	0	0	**6**
Jackdaw (*Corvus monedula*)	0	0	1	0.8	0	0	**1**
Rook (*Corvus frugelius*)	0	0	1	0.8	0	0	**1**
European Eel (*Anguilla Anguilla*)	4	30.7	2	1.6	0	0	**6**
Cod (*Gadus morhua*)	0	0	7	5.6	0	0	**7**
Anuran amphibian (*Rana/Bufo*)	4	30.7	2	1.6	0	0	**6**
Total	**13**	**100**	**124**	**100**	**6**	**100**	**143**

Table 33: *Species distribution for the assemblage (MNI)*

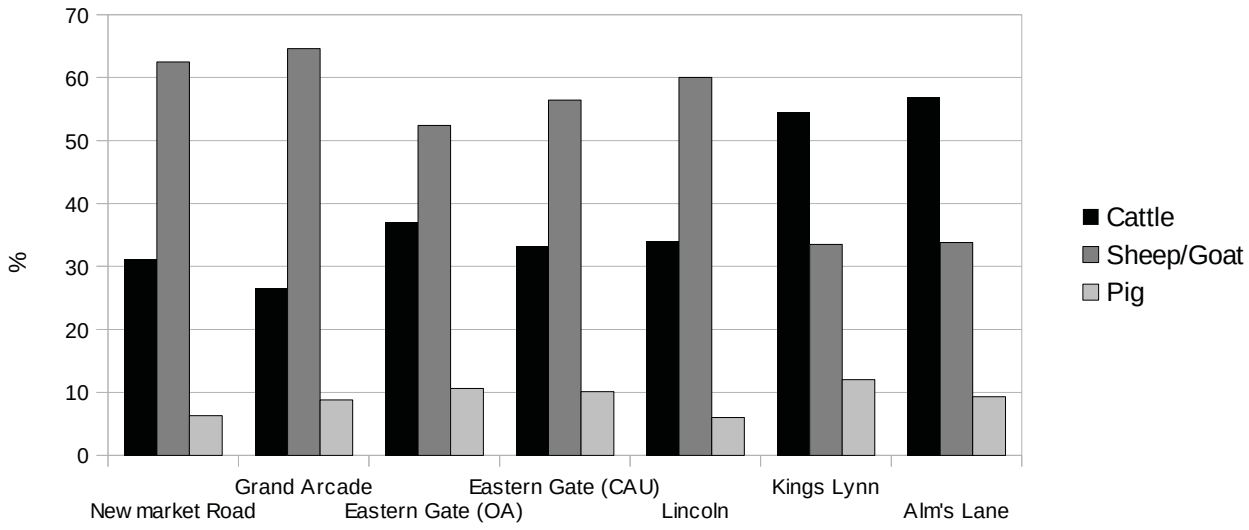

Fig. 7: Distribution of the main domesticates compared with contemporary sites

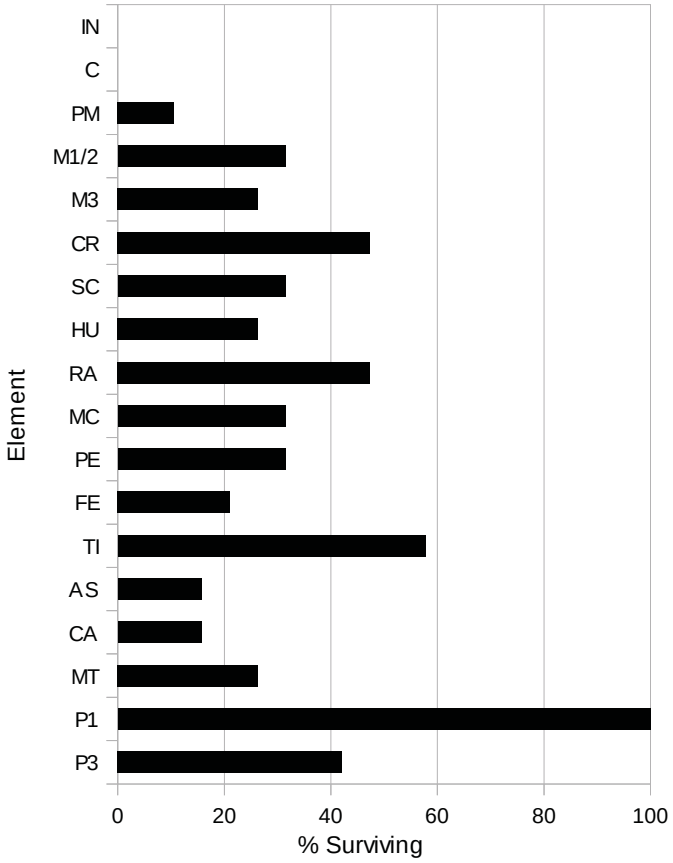

Fig. 8 : *Body part distribution for Period 2 cattle*

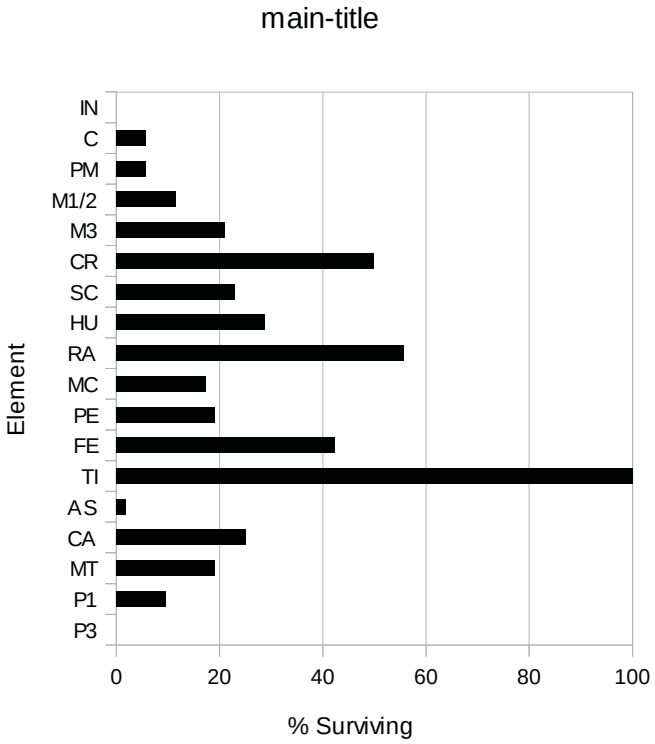

Fig. 9: *Body part distribution for Period 2 sheep*

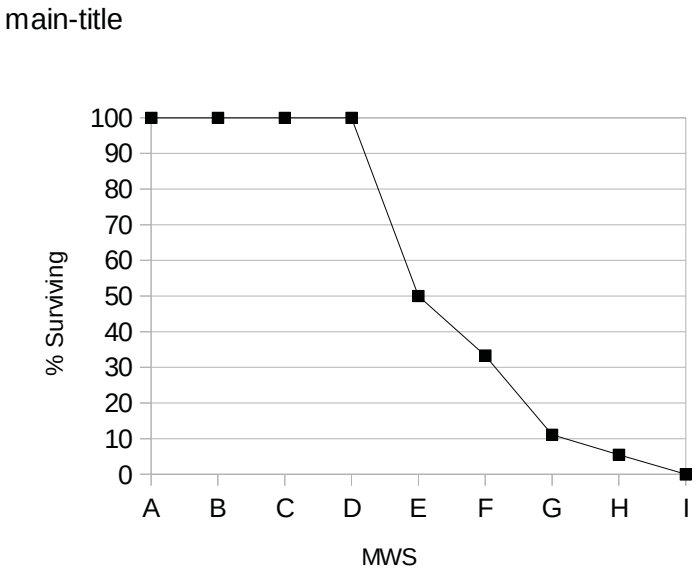

Fig. 10: *MWS for Period 2 sheep*

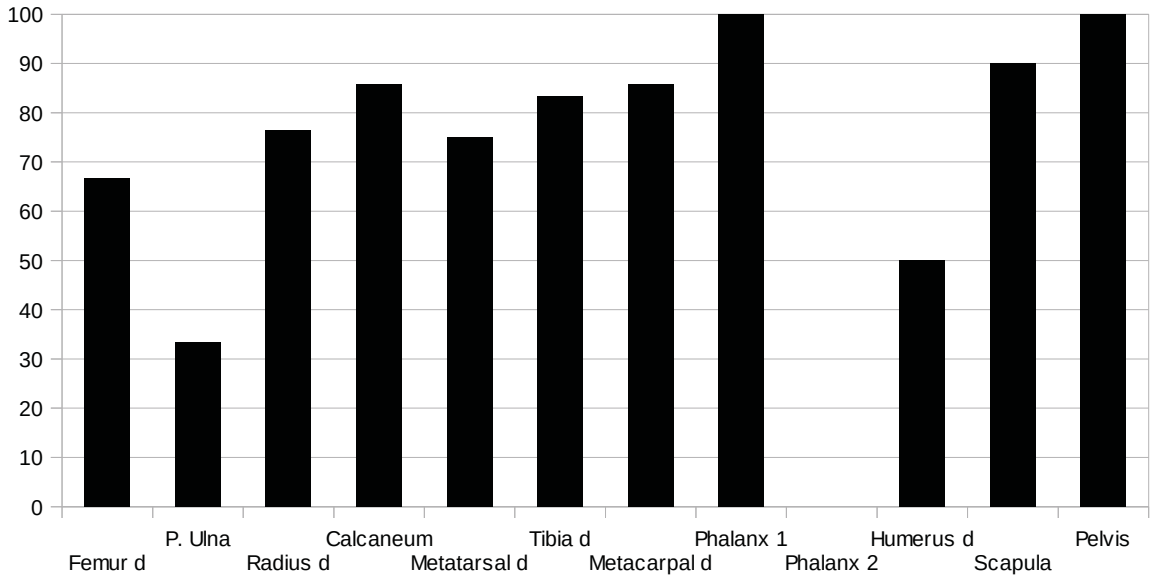

Fig. 11: *Fusion data for Period 2 sheep*

C.2 Environmental samples

By Rachel Fosberry

Introduction

C.2.1 Fifteen bulk samples were taken from features within the excavated areas at Newmarket Road, Cambridge in order to assess the quality of preservation of plant remains and their potential to provide useful data as part of further archaeological investigations.

C.2.2 Features sampled include ditches and pits dating from the medieval period through to c.AD 1800.

Methodology

C.2.3 For this initial assessment one bucket (approximately 10 litres) of each bulk sample was processed by water flotation (using a modified Siraff 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 the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. Both flot and residues were allowed to air dry. A magnet was dragged through each residue fraction prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and a list of the recorded remains are presented in Tables 34-36. Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* and the authors' own reference collection.

Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (1997) for other plants. Carbonized 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.2.4 For the purpose of this initial assessment, items such as seeds, cereal grains and legumes have been scanned and recorded qualitatively according to the following categories

= 1-10, ## = 11-50, ### = 51+ specimens #### = 100+ specimens

C.2.5 Items that cannot be easily quantified such as charcoal have been scored for abundance

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

Results

C.2.6 Plant remains are predominantly preserved by carbonisation with occasional seeds having been preserved by mineralisation. Much of the charred material is very fragile suggesting either repeated burning or burning at high temperatures. The results are discussed by period:

Period 1 c.AD 1200- c.AD1538

C.2.7 The ten samples taken from medieval deposits all contain charred cereal grains other than Sample 7, fill 290 of Latrine **291**. This cessy deposit contains abundant insects in the form of fly puparia and arthropods. Egg shell, fish bones and amphibian bones are also present. The charred cereal grains in the pit fills and also hearth **235** and ditch **263** are all mixed grain that includes barley (*Hordeum vulgare*) and free-threshing wheat (*Triticum aestivum* sensu-lato). Most of the grain is abraded and fragmented suggesting decomposition/degradation of the grain prior to burial and possibly high temperature/repeated burning. Legumes occur occasionally in the form of peas and beans (Fabaceae) that are also extremely burnt. Weed seeds are rare and are often present as single specimens of crop weeds such as corn gromwell (*Lithospermum arvense*), docks (*Rumex* sp.), small nettle (*Urtica urens*) in addition to occasional seeds of wetland plants such as sedges (*Carex* sp.) and Great Fen sedge (*Cladium mariscus*). Single mineralised seeds are found in Sample 3, fill 234 of hearth **235** (dock) and Sample 12, fill 446 of quarry pit **445** (fumitory (*Fumaria officinalis*)). Sample 9, fill 362 of pit **361** is rich in silicates and is likely to be sweepings of ash from a hearth/oven fire.

Sample No.	Ctxt No.	Cut No.	Feature Type	Sample Size (L)	Vol processed (L)	Flot Vol (ml)	Cereals	Legumes	Charred weed Seeds	mineralised weed seeds	mineralised insects	Snails from flot	Small Bones	Charcoal	Flot comments
2	209	**210**	pit	30	10	20	#	0	0	0	0	#b	#	+	Occasional cereals
3	234	**235**	hearth	20	8	30	#	#	#	#	#	0	#	+	Occasional cereals, bean fragment, mineralised dock seed
4	251	**252**	pit	30	8	15	#	#	0	0	0	0	0	++	Occasional cereals
5	264	**263**	ditch	30	8	10	##	#	#	0	0	0	0	++	Occasional cereals
6	230		surface	30	8	5	#	0	0	0	0	0	0	+	Occasional cereals

7	290	**291**	latrine	30	8	125	0	0	0	0	### #	0	##	0	cessy. Mainly mineralised insects with fish bone and egg shell
9	362	**361**	pit	30	8	30	#	0	#	0	0	#b	0	++	occasional mixed cereals. Rich in silicates with occasional Cladium leaf
10	381	**379**	pit	30	10	5	##	#	0	0	0	0	0	++	wheat and barley
13	444	**443**	pit	30	8	20	##	0	#	0	#	0	0	++	Occasional cereals
12	446	**445**	pit	30	8	30	##	#	#	#	0	0	0	+++	mixed cereals, mineralised fumitory seed

Table 34: *Environmental samples from Period 1 deposits*

Period 2 c.AD 1538-c.AD 1800

C.2.8 Four samples were taken from three deposits dating to Period 2. Samples 8 (fill 281 of pit **265**) and 11 (fill 394 of pit **453**) produced similar assemblages that are rich in charred cereals, predominantly wheat. There is evidence of corn-cockles which are the charred remains of wheat grains that have been infected with the nematode *Anguina Tritici.* Sample 8 also contains barley, and occasion oats (*Avena* sp.) and rye (*Secale cereale*). Sample 11 contains abundant rye grains along with a few rye chaff (stem) fragments.

C.2.9 Samples were taken from two of the six fills of feature **450**; interpreted on site as a latrine, this feature was 3.6m in length, 1.5m breadth and 0.9m deep. Sample 14, fill 387and Sample 15, fill 449 both contain charcoal-rich assemblages that also contain abundant grain. Sample 15 produced a 500ml flot and the charred grain component is mainly barley (no evidence of germination). Sample 14 contains mixed grains of wheat, barley, oats and rye). Clinker is present in both samples, more so in Sample 15, and is evidence of the use of coal as fuel.

Sample No.	**Ctxt No.**	**Cut No.**	**Feature Type**	**Sample Size (L)**	**Vol processed (L)**	**Flot Vol (ml)**	**Cereals**	**Chaff**	**Legumes**	**Charred weed Seeds**	**mineralised insects**	**Charcoal <2mm**	**Flot comments**
8	281	**265**	pit	30	8	60	###	0	#	0	#	++	Mixed cereals, mainly wheat with Anguina infestation
11	394	**453**	pit	20	8	60	###	#	#	#	0	+++	Abundant rye and wheat. Anguina infestation
14	387	**450**	latrine	30	10	180	###	0	0	0	0	+++	wheat and barley. Charcoal rich, very burnt
15	449	**450**	latrine	30	10	500	####	0	#	0	0	+++	abundant barley grains, charcoal rich.

Table 35: Environmental samples from Period 2 deposits

Period 3 C. AD 1800 to present

C.2.10 Sample 1 was taken from the basal fill of a pit and contains charred wheat and barley grains in addition to charred leaf fragments and nutlets of Great Fen sedge.

Sample No.	Ctxt No.	Cut No.	Feature Type	Sample Size (L)	Volume processed (L)	Flot Volume (ml)	Cereals	Legumes	Charred weed Seeds	Charcoal <2mm	Flot comments
1	157	**158**	pit	30	8	40	##	#	#	+++	wheat with occasional barley. Cladium leaf and nut

Table 36: *Environmental samples from Period 3 deposit*

Discussion

C.2.11 The samples from Newmarket Road site contain mixed refuse in the form of charred cereal grains with occasional weed seeds mixed with domestic refuse such as animal bone, pottery and oyster shell. The digging of pits in a confined space over a long time-period is going to inevitably result in the redeposition of earlier deposits into later features and most of the assemblages contain material that appears to have been mixed.

C.2.12 The Period 1 medieval deposits are less productive than those from the later medieval period. This includes the deposit from 'latrine' **291** in which mineralised seeds of typical latrine deposits such as fruit pips and stones are absent suggesting that either the deposit does not contain human waste. Two of the Period 2 samples contain evidence of nematode infestation of crops. There is further evidence of this in samples taken from contemporary deposits at the nearby sites of Harvest Way and Coldhams Lane and further investigation of these 'corn-cockles' is required.

C.2.13 Clinker, as evidence of the use of coal, has not been noted at the other sites and may suggest a more industrial function. It is found in grain-rich deposits within 'latrine' **450** and may possibly relate to the fuel used for cereal processing activities such as bread ovens or brewing. There was not an obvious germination of barley grain in the portion of the flot assessed but it may be worth looking at Sample 15 more closely. It was taken from the basal fill of the sequence of deposits within the feature. If the feature was a latrine or cess-pit then it is likely to have been regularly cleaned out although it would have been unlikely to have been emptied prior to its final use, especially if it was subsequently to have been used for rubbish disposal. There is no evidence of any latrine waste in the fills sampled. Sample 11 was taken from a small pit located close to 'latrine' **450** and may be associated with the feature. If so, it would also be worth analysing to see if it is possible to re-interpret the function of **450**.

C.2.14 It is not considered that the other samples are worthy of further archaeobotanical analysis due to the mixed nature of the deposits. The insect remains preserved by mineralisation in latrine **291** (Sample 7) could be submitted for assessment by an insect specialist.

C.3 Shell

By Lexi Scard

Introduction and Methods

C.3.1 A total of 5.824kg of marine shell was recovered from 36 contexts during excavations at Newmarket Road, Cambridgeshire. 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.

Species	Common name	Habitat	Total weight (Kg)	Total number of contexts
Ostrea edulis	Oyster	Estuarine and shallow coastal water	5.769	35
Mytilus edulis	Mussel	Intertidal, salt water	0.036	5
Cerastoderma edule	Cockle	Intertidal, salt water,	0.012	3
Buccinum undatum	Common Whelk	Salt water, sublittoral	0.007	2

Table 37: *Overview of identified, quantified shell*

C.3.2 The shells were quantified in order to assess the diversity and quantity if these ecofacts and their potential to provide useful data as part of the archaeological investigations. Shells were recovered both in the field and from environmental samples. Only shell apices were counted in order to obtain the Minimum Number of Individuals (MNI) for each species, bearing in mind that each individual originally had two apices. The MNI was arrived at by different means, depending on the species.

Oysters have a defined left and right valve. The left is more concave in shape and displays radiating ribs on the outer surface. The right is generally 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 cockles and mussels, 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. The MNI of whelks was represented through the quantity of apices.

Results

C.3.3 Oyster shells predominate in the assemblage from this site. The size of the oyster shells ranged from 3.5cm to 9cm, with an average size of 5cm. The measurement describes the length from the apex to the outer edge of the shell. Several of the oyster shells had evidence of investation of polychaete worms in addition to evidence of damage caused when the shells were prised apart (known as shucking). Occasional shells of mussels, whelk and cockles were also recovered.

Ctxt	Cut	Category	Feature Type	Period	Oyster Weight (Kg)	Apices/ MNI	Oyster left valve	Oyster right valve
147	146	fill	pit	0	0.012	3	2	3
264	263	fill	ditch	1	0.028	2	1	2
363	361	fill	pit	1	0.002	1		

376	375	fill	pit	1	0.021	1	1	1
378	375	fill	pit	1	0.033	3	3	2
381	379	fill	pit	1	0.004	1	1	
442	441	fill	pit	1	0.035	3	3	2
444	443	fill	pit	1	0.009	2	2	
447	445	fill	pit	1	0.020	2	2	1
23	0	layer	cultivation	2	0.002	1		1
101	0	layer	cultivation	2	0.037	5	3	5
123	0	layer	cultivation	2	0.029	2	1	2
195	0	layer	cultivation	2	0.466	49	43	49
266	265	fill	pit	2	1.250	120	120	103
281	265	fill	pit	2	1.876	145	145	106
282	265	fill	pit	2	0.484	45	45	40
333	265	fill	pit	2	0.413	37	31	37
342	265	fill	pit	2	0.181	17	17	16
343	265	fill	pit	2	0.031	3	3	2
353	352	fill	pit	2	0.004	1	1	
383	382	fill	pit	2	0.090	5	4	5
400	399	fill	pit	2	0.023	1	1	1
387	450	fill	latrine	2	0.037	3	3	1
451	450	fill construction	latrine	2	0.023	1	1	1
394	453	fill	pit	2	0.006	1	1	
129	0	layer	levelling	3	0.007	1		1
267	0	layer	levelling	3	0.008	1		1
156	158	fill	pit	3	0.012	1	1	
183	185	fill	well	3	0.022	2	2	
184	185	fill	well	3	0.510	17	17	7
220	225	fill	pit	3	0.018	2	2	
221	225	fill	pit	3	0.025	3		3
223	225	fill	pit	3	0.012	1	1	
241	240	fill	pit	3	0.031	1	1	
389	388	fill	pit	3	0.008	1	1	

Table 38: *Oyster shell quantification*

Ctxt	Cut	Category	Feature Type	Function	Period	Whelk weight (Kg)	Mussel weight (Kg)	Cockle (weight (Kg)
362	361	fill	pit		1		0.004	
378	375	fill	pit		1		0.010	
195	0	layer	cultivation		2	0.004		
266	265	fill	pit	quarry	2	0.003	0.006	0.007
281	265	fill	pit	quarry	2		0.013	0.003

282	265	fill	pit	quarry	2		0.003	
267	0	layer	levelling		3			0.002

Table 39: *Other shell*

Discussion

C.3.4 Oyster shells clearly predominate in this assemblage, along with a minor component of cockles, mussels and whelks suggesting that oysters were the favoured choice. The oyster shells occur in all phases of occupation, with the greatest quantity being recovered from Period two deposits, most commonly from pits.

C.3.5 During the preparation of oysters, prior to eating the right valve is often prised off and possibly discarded separately, with the meat being left in the left valve. There are roughly equal numbers of left and right valves in this assemblage, suggesting that the oysters were being prepared, eaten and both shells disposed of together.

C.3.6 The majority of the shells were moderately preserved and did not appear to have been deliberately broken or crushed. There was evidence in some cases of damage likely to have been caused during the opening (shucking) process. This was in the form of small 'v' or 'u' shaped holes at the centre of the outer edge, usually on the left hand valve.

C.3.7 Cockles, mussels and whelks comprise a minor component of the assemblage. These shellfish were commonly consumed in the Medieval and Post-Medieval period but there is little evidence for this on this site. The presence of these species could possibly be explained as contaminants of the oyster harvest.

Further Work and Methods Statement

C.3.8 The marine shell recovered from this site provides evidence of the popularity of oysters in the Medieval diet. Other sites recently excavated along the same road as this site (Eastern Gate, Coldhams Lane, Harvest Way) have also produced large quantities of oyster shell. These sites are on what was a major trade route between Cambridge and Newmarket and is also contemporary with Stourbridge Fair. The assemblage has been fully quantified and no further work is required.

Appendix D. Bibliography

Albarella U., Beech M., Locker A., Moreno-García M., Mulville J. & Curl J., 2009 *Norwich Castle : Excavations and Historical Surveys 1987-98. Part III: a Zooarchaeological Study.* E. Anglian Archaeol. Occ. Pap. 22 (Norwich)

Albarella, U. & Davis, S. J. M., 1994 *The Saxon & Medieval animal bones excavated 1985-1989 from West Cotton, Northamptonshire*. AML Rep. Ser. 17/1994

Albarella, U. and Thomas, R., 2002 They dined on crane: bird consumption, wild fowling and status in medieval England *Acta Zoologica Cracoviensia* 45, 23-38

Armitage, P.L. and Clutton-Brock, J., 1976 A System for Classification and Description of the Horn Cores of Cattle from Archaeological Sites. *J. of Archaeol. Sci* 3, 329-348

Atkin, M. & Margeson, S., 1985 *Life On A Medieval Street: Excavations On Alms Lane, Norwich 1976*

Atkins, R., 2002 'Brickmaking in the Holy Sepulchre parish, Northampton', *Northamptonshire Archaeol.* 30, 83-100

Atkins, R., 2010 'Bricks, floor and roof tile', in Fletcher, T., Archaeological investigations at Wisbech Castle – a community archaeological project. Oxford Archaeology East Report 1137, 64-78 (unpublished)

Atkins, R., 2012 Between river, priory and town: excavations at the former Cambridge Regional College Site, Brunswick, Cambridge *Proc. of the Cambridge Antiq. Soc*. CI, 7-22

Atkins, R., 2012b *Medieval and post-medieval remains at Intercell House, Coldhams Lane*, *Cambridge,* OA East report 1424 (unpublished)

Atkins, R., 2013 *A Mid/Late Iron Age ditch and medieval to modern settlement at Coldhams Lane, Cambridge. Post-excavation assessment report.* OA East report 1440 (unpublished)

Atkins, R., 2014 *Written Scheme of Investigation Archaeological Excavation 132-136 Newmarket Rd, Cambridge* OA East report (unpublished)

Atkins, R., 2014b 'Brick, Floor, Roof Tile and Fired Clay/Daub' in Clarke, R., *Medieval and post-medieval occupation and garden features, Thingoe House, Bury St Edmunds, Suffolk: Post-excavation Assessment and updated Project Design* OA East report 1436 (unpublished)

Atkins, R., 2015 *A Mid/Late Iron Age ditch and medieval to modern settlement at Coldhams Lane, Cambridge. Full archive report.* OA East report 1711 (unpublished)

Atkins, R., forthcoming Early Iron Age *and medieval to modern remains at 9-15 Harvest Way, Cambridge* OA East report 1632 (unpublished)

Atkins, R., forthcoming B "Brick, floor and roof tile and fired clay from Walden House, Huntingdon", in Clarke, R **XXXXX**(**OA East report) XXXXnumber etc.**

Atkins, R. and Fletcher, C., 2009 'Brick and tile' in Clarke, R., Late Saxon to post-medieval occupation to the rear of Gazeley House and Laurence Court (Huntingdon Town Centre), Huntingdon, Cambridgeshire. Oxford Archaeology East report 1056 (unpublished)

Baker, D., Baker, E., Hassall, J. and Simco A., 1979 , 'Excavations in Bedford 1967-77', Bedfordshire Archaeological Journal, 13, 7-307

Barlow, G. and Thompson, P., 2014 *132-136 Newmarket Road, Cambridge CB4 8HE* Archaeological Evaluation AS report 4645 (unpublished)

Baxter, I.L., 1998 Species identification of equids from Western European archaeological deposits: methodologies, techniques and problems. In Anderson, S. (ed.) *Current and* Recent Research in Osteoarchaeology, pp. 3-17. Proceedings of the third meeting of the *Osteoarchaeological Research Group. (*Oxford: Oxbow)

Beart, R., 1852 'For the improvement in the manufacturer of bricks and other articles through moulded orifices', *Patent Law Amendment Act 1852, No. 34*

Boessneck, J., 1969 'Osteological Differences between Sheep (*Ovis Aries Linné*) and Goat (*Capra Hircus Linné*)'. In Brothwell, D.R. and Higgs, E.S. (eds.), Science in Archaeology: A Comprehensive Survey of Progress and Research (London), 331−58

Bowsher, D., Dyson, T., Holder, N. and Howell, I., 2007 *The London Guildhall. An archaeological history of a neighbourhood from early medieval to modern times* Museum of London Archaeological Services monograph 36. London: Museum of London Archaeological Services

British Geological Survey (BGS) 1981 *Cambridge Solid and Drift Edition* 1:50, 000 English and Wales Sheet 188

Brown, N. and Glazebrook, J., 2000 *Research and: a Framework for the Eastern Counties, 2. Research Agenda and Strategy*. E. Anglian Archaeol. Occ pap no. 8

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

Cessford, C., 2001a The Clay Tobacco Pipe Industry in Cambridgeshire and Huntingdonshire, *Cambridgeshire Local History Society Review* 10, 3–19

Cessford, C., 2001b Pipemaking at No.11 Sidney Street, Cambridge, *Society for Clay Pipe Research Newsletter* 57, 13–22

Cessford, C., 2007 Grand Arcade: and archaeological excavation CAU Report 800 (unpublished)

Cessford, C., 2009 Post-1550 Urban Archaeology in a Developer-funded Context: An Example from Grand Arcade, Cambridge, in Horning, A. and Palmer, M. (ed's). *Crossing Paths or Sharing Tracks? Future directions in the archaeological study of post-1550 Britain and Ireland*. Woodbridge: Boydell and Brewer, 301–21

Cessford, C., 2012 T*he Old Divinity School, Cambridge: an archaeological excavation*. Cambridge Archaeological Unit Report 1094 (unpublished)

Cessford, C., 2014a An assemblage of Collegiate ceramics: mid-nineteenthcentury dining at Trinity Hall, *Cambridge Archaeol. J.* 171, 340-380

Cessford, C., 2014b *North west Cambridge archaeology University of Cambridge 2013-14 Excavations - site IX*- CAU report 1248 (unpublished)

Cessford, C., in prep Routine or ritual assemblages? Depositional practices and the Post-Medieval household, invited paper for *Post-Medieval Archaeology*

Cessford, C. & Mortimer, R., 2004 *Sawston Police Station, Sawston: An Archaeological Evaluation and Watching Brief*. CAU Report No. 596 (unpublished)

Cessford, C. and Dickens, A., In preparation From *King's Ditch to Department Store: investigations of an 11-20th-century Suburb and the Town Ditch of Cambridge* (Cambridge Archaeological Unit report

Cessford, C. and Slater, A., forthcoming Beyond the manor of Hintona. Further thoughts on the development of Cherry End, Cherry Hinton: The Neath Farm site *Proc. Cambridge Antiq. Soc.*

Cessford, C., Alexander, M. and Dickens, A., 2006 *Between Broad Street and the Great Ouse: waterfront archaeology in Ely*: East Anglian Archaeology Report 114

Cessford, C, Hall, D. and Hall, A., 2007'Pottery assessment' in Cessford, C., *Grand Arcade* CAU Report 800 (unpublished)

Cessford, C, Hall, D. and Newman, R., 2013 'Pottery' in Newman, R., *The Eastern Gate Hotel Site, Cambridge: An Archaeological Excavation*, CAU Report 1176 (unpublished)

Checkland, S., 1979 *The rise of industrial society in England 1815-85* (Longman). Seventh edition

Connor, A., 2014 *Health and safety method statement, 132-136 Newmarket Rd, Cambridge* OA East report (unpublished)

Conzen, M.R.G.,1960 Alnwick, Northumberland: a study in town plan analysis (London: Institute of British Geographers Publication 27)

Cotter, J., 2000 *Post-Roman pottery from excavations in Colchester, 1971-85.* Colchester Archaeological Trust

Coysh, A.W. and Henrywood, R.K., 1982, 1989 *The Dictionary of Blue and White Printed Pottery 1780-1880* Volumes 1 and 2, Antiques Collectors Club Woodbridge, Suffolk

Crummy, N., 1988 *The post-Roman small finds from excavations in Colchester 1971-85*, Colchester Archaeological Report 5 (Colchester)

Crummy, N., 2007 'The small finds from Whitefriars, Norwich', report for Cambridgeshire County Council Archaeological Field Unit (now Oxford Archaeology East)

Dallal, D., 2000 Five Points of Fellowship: Masonic Pipes from Block 160, An Interpretive Approach to Understanding Working-Class Life, in Yamin, R. (ed). *Tales of Five Points: Working-Class Life in Nineteenth-Century New York, vol. II.* New York, General Services Administration, Region 2, 111–29

Danckwerts, P. V., 1980 The inheritors of Barnwell Priory *Proc. of the Cambridge Antiq. Soc.* LXX, 211-228

Davis. S.,1980 Late Pleistocene and Holocene equid remains from Israel. *Zoological J. of the Linnean Soc.* 70 (3), 289-312

Davis, S., 1992 *A rapid method for recording information about mammal bones from archaeological sites*. AML rep. 81/91 London

DeWindt, A. R., and DeWindt, E. B., 2006 *Ramsey: The Lives of an English Fenland Town, 1200-1600* (Washington D.C.: Catholic University of America Press)

Dobney, K., Jaques, D. and Irving, *B.,* 1996 *Of butchers and breeds.* Lincoln Archaeological Studies 5. (Lincoln)

Dobney, K & Reilly, K., 1988 A method for recording archaeological animal bones: the use of diagnostic zones. Circaea 5(2), 79-96

Durham, E. and Fulford, M., 2014 *A late Roman town house and its environs*, Britannia Monograph 26 (London)

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

Egan, G., 1998 *The medieval household*, Medieval Finds from Excavations in London 6 (London)

Eisenmann. V., 1981 Etude des dents jugales inferieure des equus (Mammalia, Perissodactyla) actuels et fossiles. *Palaeovertebrata* 10, 127-226

English Heritage 1991 *Management of Archaeological Projects*

English Heritage, 2006 *Management of Research Projects,The MoRPHE Managers' Guide*

English Heritage, 2008 Management of Research Projects, PPN3: Archaeological Excavation

Fletcher, C., 2011 'Pottery' in Atkins, R., *Early Neolithic pits, Late Iron Age, Roman and medieval layers and late 17th century quarrying at the former Cambridge Regional College site, Brunswick, Cambridge: Post-excavation Assessment and Updated Project Design* Oxford Archaeology East report 1221 (unpublished)

Fletcher, C., 2012b 'Pottery' in Atkins, R., *Medieval and post-medieval remains at Intercell House, Coldhams Lane*, *Cambridge,* OA East report 1424 (unpublished)

Fletcher, C., 2015 'Pottery' in Atkins, R., *Medieval and post-medieval remains at Intercell House, Coldhams Lane*, *Cambridge,* OA East report 1771 (unpublished)

Fletcher, C., forthcoming 'Post-Roman Pottery' in Atkins, R., *Early Iron Age and medieval to modern settlement remains at Harvest Way, Barnwell, Cambridge Post-excavation Assessment and Updated Project Design* OA East report 1632 (unpublished)

Flood, R.J. 1976 *Clay tobacco pipes in Cambridgeshire*. Cambridge, Oleander Press

Fox, C., 1923 *The archaeology of the Cambridge region* (Cambridge: Cambridge University Press)

Gaimster, D., 1997 *German stoneware, 1200-1900* (London)

Godden, G.A., 1991 *Encyclopaedia of British Pottery and Porcelain Marks*, Barrie & Jenkins, London

Godden, G.A., 1999 *Godden's Guide to Ironstone & Granite Wares*, Antique Collectors Club, Woodbridge, Suffolk

Gransden, A., 2007. *A history of the Abbey of Bury St Edmunds 1182-1256* (Woodbridge)

Grant, A., 1982 The use of tooth wear as a guide to the age of domestic ungulates. In B. Wilson, C. Grigson & S. Payne (eds.) *Ageing and sexing animal bones from archaeological sites*. Oxford: BAR British Series 199

Greenfield, H. J., 2002 Sexing fragmentary ungulate acetabulae. In Ruscillo.D. (eds.), *Recent Advances in Ageing and Sexing Animal Bones, (Proceedings of the 9th ICAZ Conference, Durham 2002)* (Oxford: Oxbow Press)

Grigson, C., 1982 Sex and age determination of some bones and teeth of domestic cattle: a review of the literature. In Wilson,B., Grigson, C. & Payne, S. (eds.), *Ageing and sexing animal bones from archaeological sites*. BAR British Series 199 (Oxford)

Hall, D, Cessford, C. and Newman, R., 2013 'Medieval [pottery]' in Newman, R., *The Eastern Gate Hotel Site, Cambridge: An Archaeological Excavation*, CAU Report 1176 (unpublished)

Hall, R. A. and Hunter-Mann, K., 2002 *Medieval urbanisation in Coppergate: refining a townscape Archaeology of York 10/6* York: Council for British Archaeology

Halstead, P., Collins, P. & Isaakidou, V., 2002 Sorting the Sheep from the Goats: Morphological Distinctions between the Mandibles and Mandibular Teeth of Adult *Ovis* and *Capra*. *J. of Archaeol. Sc. 29,* 545-553

Hannon, T. and Hannon, A., 1976 Bottles Found in St. Thomas, Virgin Islands Waters *J.* of the Virgin Islands Archaeol. Soc. 3, 29-45. http://www.stcroixarchaeology.org/VIAS.html (Accessed 08 June 2015)

Hatting, T., 1995 Sex-related characters in the pelvic bone of domestic sheep (Ovis aries L.) *Archaeofauna* 4, 71-76

Hedges, A. A. C., 1996 *Bottles and bottle collecting*, Princes Risborough: Shire Publications Ltd

Higbee, L., forthcoming 'Faunal remains'. In Cessford, C. and Dickens. A., *Grand Arcade, Cambridge: the Excavation of a Medieval Suburb*. E. Anglian Archaeol. Monograph

Hopkins, E., 1989 *Birmingham the first manufacturing town in the world 1760-1840* Weidenfield and Nicolson (London)

House, J., 2013 *Medieval remains at 30-31 Occupation Road, Cambridge* OA East report 1496 (unpublished)

Hurst, J. G., Neal, D. S. and van Beuningen, H. J. E., 1986 *Pottery produced and traded in north-west Europe 1350-1650*, Rotterdam Papers 6 (Rotterdam)

Jacomet, S., 2006 Identification of cereal remains from archaeological sites. (2nd edition, 2006) IPNA, Universität Basel / Published by the IPAS, Basel University

Kear J., 1990 *Man and Wildfowl.* (London)

Keynes, F., 1947. By-Ways of Cambridge History (Cambridge: Cambridge University Press)

Lee, J. S., 2005 *Cambridge and its economic region, 1450-1560* studies in regional and local history volume 3 (University of Hertfordshire Press)

Lindsey, B. *Pediatrics Journal website – What were Godfrey's Cordial and Dalby's Carminative?* Online. 2013. American Academy of Pediatrics. Available: http://http://www.sha.org/bottle/body.htm#Free-blown%20bottle%20bodies (Accessed 08 June 2015)

Lucas, R., 1993 'Ely bricks and roof-tiles and their distribution in Norfolk and elsewhere in the 16th to 18th centuries', PCAS LXXXII, 157-62

Meckseper, C., 2014 Roman burials and post-medieval clay tobacco pipes at Merton Hall, Cambridge *Proc. of the Cambridge Antiq. Soc.* 103, 61–68

Medlycott, M. (ed.), 2011 *Research and archaeology revisited: a revised framework for the East of England* E. Anglian Archaeol. Occ pap no. 24 (ALGAO)

MPRG, 1998 *A Guide to the Classification of Medieval Ceramic Forms.* Medieval Pottery Research Group Occasional Paper I

MPRG, 2001 *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics.* Medieval Pottery Research Group Occasional Paper 2

Munby, L.M., 1977 *The Hertfordshire Landscape* (London: Hodder and Stoughton)

Newman, R., 2007 *The Christ's Lane development at Bradwell's Court, Cambridge: an archaeological excavation*. Cambridge Archaeological Unit Report 775 (unpublished)

Newman, R., 2008 *St. John's Triangle, Cambridge: an archaeological excavation and watching brief*. Cambridge Archaeological Unit Report 851 (unpublished)

Newman, R., 2013 *The Eastern Gate hotel site, Cambridge: an archaeological excavation* CAU report 1176 (unpublished)

Newman R., 2014 169-173 *High Street, Chesterton, Cambridge: an archaeological excavation* CAU report 1226 (unpublished)

Noddle, B., 1977 *Animal and plant remains. In:Clarke, H. and Carter, A. (eds.), Excavations in King's Lynn 1963-1970*. Soc. for Medieval Archaeol. (London), 378-410

Oswald, A., 1975 *Clay pipes for the archaeologist* Brit. Archaeol. Rep. Brit. Ser. 14

Payne, S., 1969 A metrical distinction between sheep and goat metacarpals, in Ucko, P.J. & Dimbelby, G.W. (eds.), *The domestication and exploitation of plants and animals.* (London), 295-305

Payne, S. & Bull, G., 1988 Components of variation in measurements of pig bones and teeth, and the use of measurements to distinguish wild from domestic pig remains. *Archaezoologica*, 2, 27-65

Reaney, P.H., 1973 *The place-names of Cambridgeshire and the Isle of Ely* (Cambridge: Cambridge University Press) reprint of its 1943 edition

Rees, H., Crummy, N., Ottaway, P. and Dunn, G., 2008 *Artefact and society in Roman and medieval Winchester. Small finds from the suburbs and defences, 1971-86* (Winchester)

Ridout, H., 2011 *Cambridge and Stourbridge Fair* (Cambridge: Blue Ocean)

Royal Commission on the Historical Monuments of England (RCHME) 1988 *City of Cambridge part I and II* (Her Majesty's Stationary Office) Reprint of 1959 edition

Ruscillo, D. (ed.), 2006 *Recent advances in ageing and sexing animal bones. Proceedings of the 9th ICAZ Conference, Durham 2002* (Oxford, Oxbow Books)

Ryan, R., 2009, "Bricks" in Macaulay, S., Atkins, R., and Shepherd Popescu, E. 2009 Medieval Archaeology within the Outer Precinct of Ramsey Abbey: Excavations at Ramsey Abbey School, Cambridgeshire 1998-2005, OA East report 1229 (unpublished)

Ryan, P. and Andrews, D.D., 1993 'A brick and tile typology for Cressing Temple', in Andrews. D.D. (ed.) *Cressing Templer. A templar and hospitaller Manor in Essex (*Essex County Council: Chelmsford), 93-103

Salzman, L.F. (ed.), 1967 *The Victoria History of the Counties of England Cambridge and Ely* vol II (London) , reprinted from 1948 edition

Semmelmann, K., 1998 *The Anglo-Saxon archaeology of the Royston area* (Royston: Royston and District Museum)

Serjeantson, D., 2002 Goose husbandry in Medieval England, and the problem of ageing goose bones. Proceedings of the 4th Meeting of the ICAZ Bird Working Group *Acta Zoologica Cracoviensia* 45, 39-54

Sherlock, D., 1998 'Brickmaking Accounts for Wisbech', 1333-1356', *Proc. Cambridge Antiq. Soc* 87, 59-69

Silver, I. A., 1969 The ageing of domestic animals. In Brothwell, D. & Higgs, E. (eds.), *Science in Archaeology,* 283-302

Slater, T.R., 1981 The analysis of burgage patterns in medieval towns *Area* 13, 211-16

Spoerry, P.S., Forthcoming *The Production and Distribution of Medieval Pottery in Cambridgeshire*

Stace, C., 1997 *New Flora of the British Isles*. Second edition. Cambridge University Press

Taylor, A., 1999 *Cambridge: the hidden history* (Stroud: Tempus)

T.E.C.Jr. *Historic Glass Bottle Identification & Information website – Bottle Body Characteristics & Mold Seams page*. Online. 2014. Society for Historical Archaeology and Bureau of Land Management. Available: http://pediatrics.aappublications.org/content/45/6/1011 (Accessed 08 June 2015)

Thirsk J., 1957 *English Peasant Farming: The agrarian history of Lincolnshire from Tudor to recent times*. (London)

Thomas, A., 2014 *Brief for archaeological excavation 132-136 Newmarket Rd* CCC HET report dated 28th August (unpublished)

Trinder, B., 2003 *Huntingdon 1924 Huntingdon sheet 18.13* Old Ordnance Survey Maps (Alan Godfrey Maps:Peterson Printers)

Trow-Smith, R., 1957 *A history of British livestock husbandry to 1700*. (London)

Von den Driesch, A & Boessneck, J., 1974 *Kritische Anmerkungen zur Widerristhöhenberechnung aus Längenmasen vor und frühgrschichtlicher Tierknochen, Säugetierkundliche Mitteilungen, 22,* München

Von den Driesch, A., 1976 *A guide to the measurement of animal bones from archaeological sites*, Peabody Museum of Archaeology and Ethnology Bulletin 1 . (Harvard)

Wade, K., 2000 'Anglo-Saxon and medieval (rural)', in Brown, N., and Glazebrook, J. (eds.), *Research and : a Framework for the Eastern Counties, 2. Research Agenda and Strategy*. E. Anglian Archaeol. Occ Pap no. 8 (Scole archaeological committee), 23-26

Wadsworth Wines website. Online. Date unknown. Wadsworth Wines. Available: http://www.wadsworthwines.co.uk/history.htm) (Accessed 28 October 2010). Site is currently being redeveloped and was not available on 08 June 2015.

White, C.L. and Beaudry, M.C., 2009 Artifacts and personal identity, in Gaimster, D. and Majewski, T. (ed's). *International Handbook of Historical Archaeology.* London, Springer, 209–25

Wikipedia – Dalby's Carminative page. Online. 2014. Wikipedia. Available: http://en.wikipedia.org/wiki/Dalby%27s_Carminative (Accessed 08 June 2015)

Williams, J. (ed.), 1979 *St Peter's Street*, Northampton excavations 1973-1976 *Northamptonshire Archaeol.* 14, 77-78

Winder, J.M., 2011 *Oyster Shells from Archaeological Sites, A brief illustrated guide to basic processing.* Available at http://oystersetcetera.wordpress.com/category/archaeological-shells/ Accessed 4/10/13

Wolverton, J., forthcoming, 'Documentary research', in Atkins, R., *Prehistoric and medieval to modern remains at 9-15 Harvest Way, Cambridge* OA East report 1632 (unpublished)

Zohary, D., Hopf, M., 2000 Domestication of Plants in the Old World – The origin and spread of cultivated plants in West Asia, Europe, and the. Nile Valley. 3rd edition. Oxford University Press

Online Resources

http://www.clivepayne.com/stock/d/masons-ironstone-china-chestnut-basket/152842 Accessed 03/06/2015

http://www.mola.org.uk/resources/medieval-and-post-medieval-pottery-codes Accessed 03/06/2015

Maps consulted

c.1807-1812 Enclosure Map (CRO Q/RDc16)

1" Ordnance Survey map *c*.1810

1813 map of the St Andrew the Less parish (CRO 107/P.4)

1830 Baker map

The 1832 map of St. Andrew the Less parish (CRO TR 869/ P10)

1840 Rowe's Sewage map (CRO CB4/19/1/1-12)

1858 Rowe's Sewage map

1873 Sale Mendicity

1st Edition Ordnance Survey map 1888 1: 500

2nd Edition Ordnance Survey map 1904

3rd Edition Ordnance Survey map 1924

1954 Ordnance Survey map

Other historic documents consulted

1841, 1851, 1861, 1871, 1881 census St Andrew the Great

1891 census St Andrew the Less

Pubs History website

CRO Q/RD/Z6 Awards Book of St Andrew the Less parish

UK Bill Books and Electoral Registers, 1583-1893

APPENDIX E. OASIS REPORT FORM

All fields are required unless they are not applicable.

Project Details

OASIS Number	Oa3 205863		
Project Name	Medieval to modern remains at 132-136 Newmarket Road, Barnwell, Cambridge		
Project Dates (fieldwork) Start	28-09-2014	Finish	27-10-2014
Previous Work (by OA East)	No	Future Work	No

Project Reference Codes

Site Code	CAMNMR14	Planning App. No.	13/1139/FUL
HER No.	CHER ECB 4268	Related HER/OASIS No.	ECB 4201

Type of Project/Techniques Used

Prompt: Direction from Local Planning Authority - Direction 4

Please select all techniques used:

☐ Field Observation (periodic visits)	☐ Part Excavation	☐ Salvage Record
☐ Full Excavation (100%)	☐ Part Survey	☐ Systematic Field Walking
☐ Full Survey	☐ Recorded Observation	☐ Systematic Metal Detector Survey
☐ Geophysical Survey	☐ Remote Operated Vehicle Survey	☐ Test Pit Survey
☒ Open-Area Excavation	☐ Salvage Excavation	☐ Watching Brief

Monument Types/Significant Finds & Their Periods

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

Monument	Period	Object	Period
Settlement remains	Medieval 1066 to 1540	Domestic	Medieval 1066 to 1540
Settlement remains	Post Medieval 1540 to 1901	Domestic	Post Medieval 1540 to 1901
Settlement remains	Modern 1901 to Present	Domestic	Modern 1901 to Present

Project Location

County	Cambridgeshire	Site Address (including postcode if possible)	
District	Cambridge City	132-136 Newmarket Rd Cambridge CB4 8HE	
Parish	St Andrew The Less		
HER	Cambridgeshire		
Study Area	300 sq m	National Grid Reference	TI 4629 5886

Project Originators

Organisation	OA EAST
Project Brief Originator	Andrew Thomas, Cambridgeshire County Council
Project Design Originator	Rob Atkins, OA East
Project Manager	Aileen Connor, OA East
Supervisor	Rob Atkins, OA East

Project Archives

Physical Archive	Digital Archive	Paper Archive
CCC Stores	OA East	CCC Stores
CAMNMR14	CAMNMR14	CAMNMR14

Archive Contents/Media

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

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

Notes:

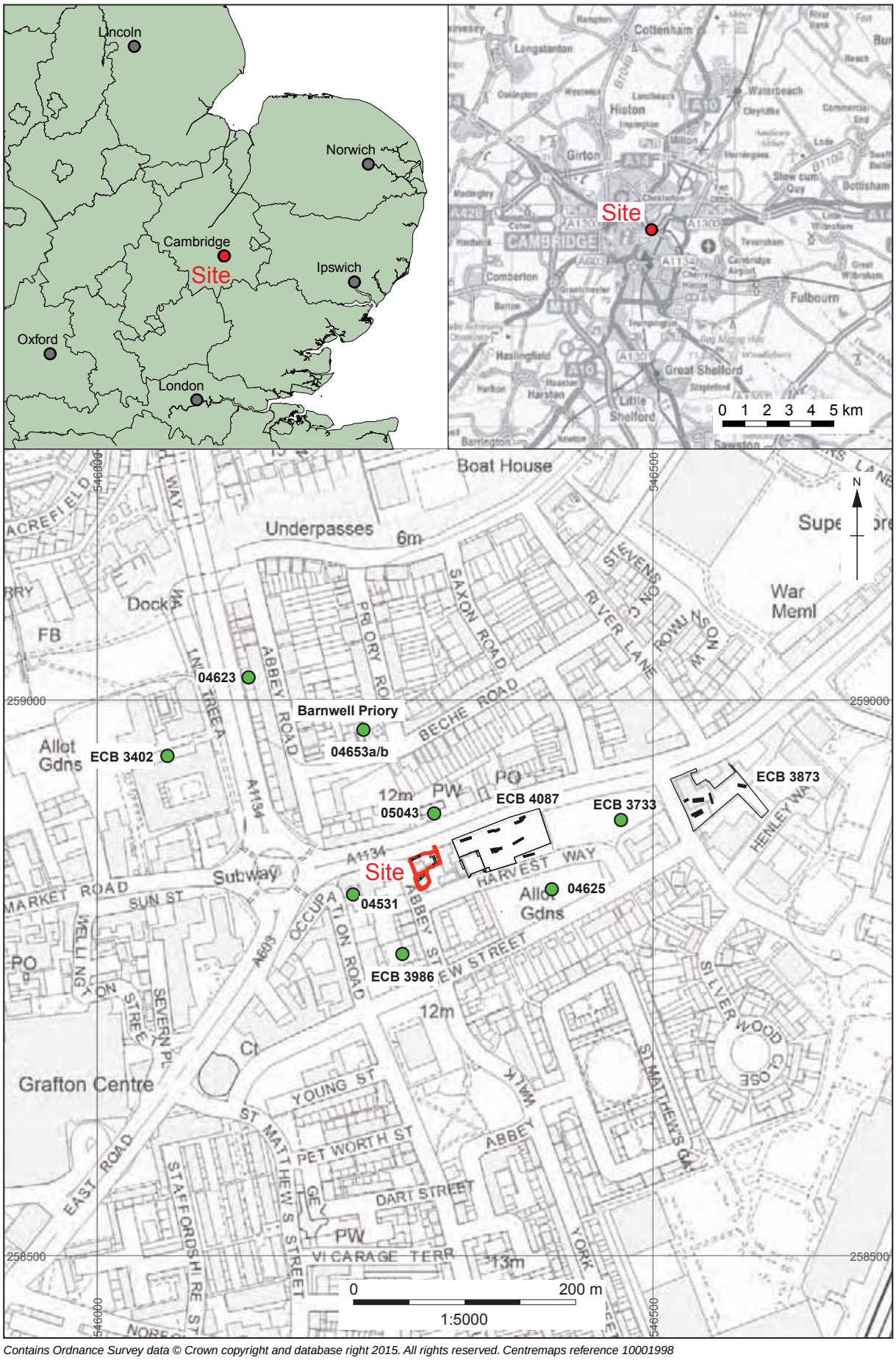

Figure 1: Site location surrounding CHER sites and recent excavations mentioned in text.

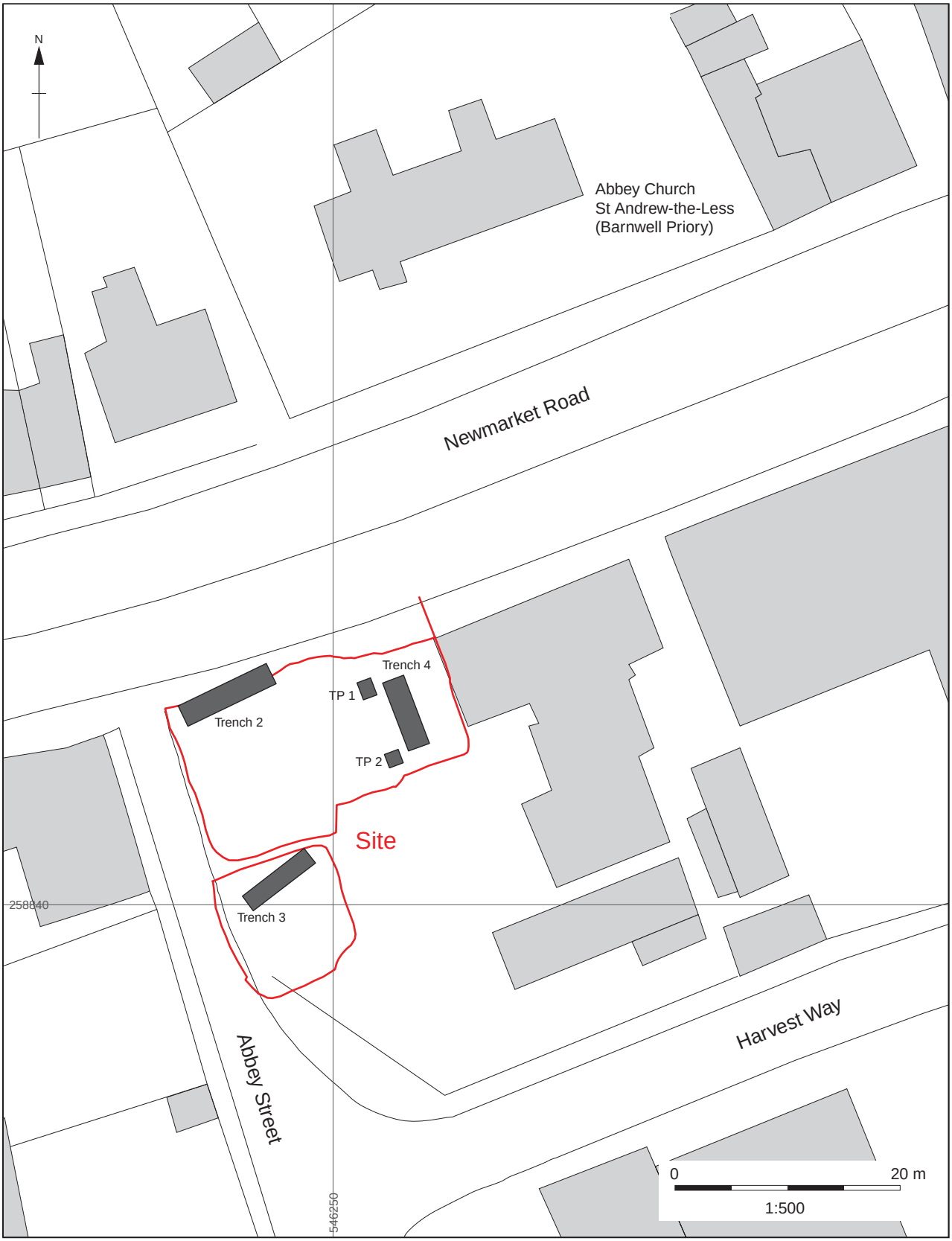

Figure 2: Excavation and evaluation trench layout

Figure 3: Plan of features from Period 1

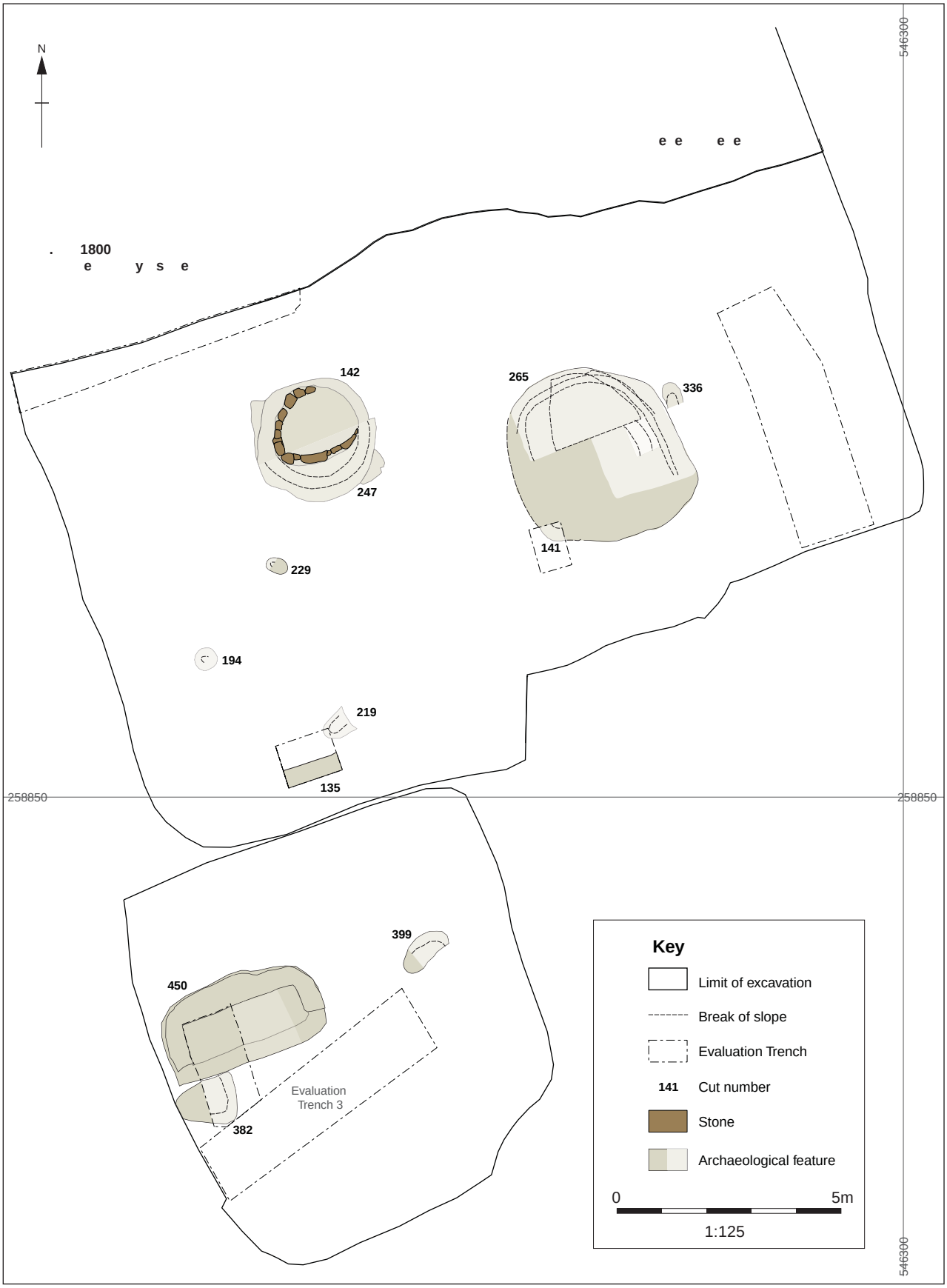

Figure 4: Plan of features from Period 2

Figure 5: Plan of features from Period 3

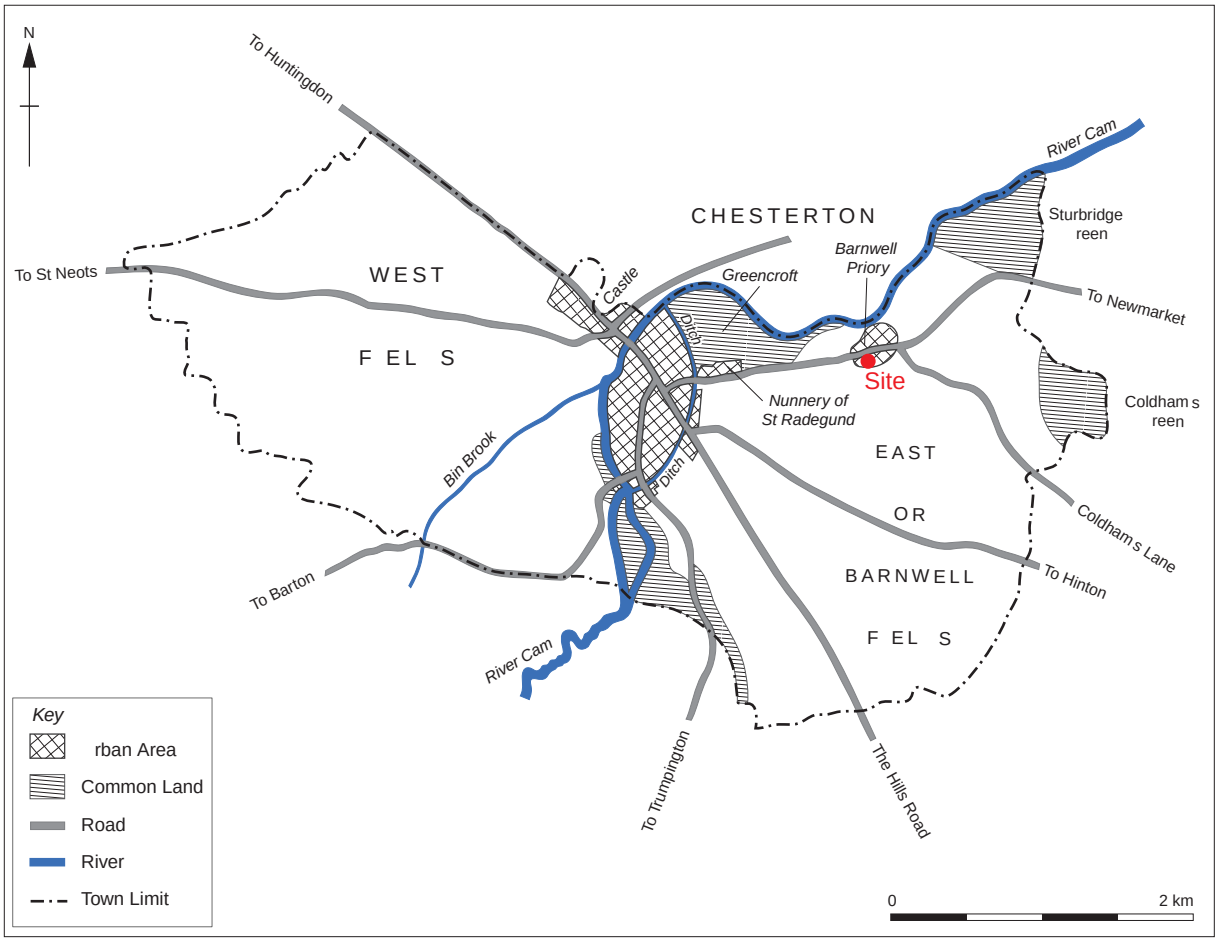

Figure 6 Site in relation to medieval Cambridge (after aitland 1964 facing p 54) Scale 1:50000

Head Office/Registered Office/ OA South

Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA North

Mill 3
Moor Lane
Lancaster LA1 1QD

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
e: oaeast@oxfordarchaeology.com
w: http://oxfordarchaeology.com