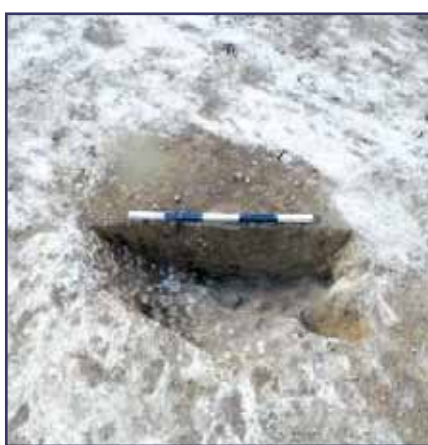


Late Neolithic Pits on Land Adjacent to Peterhouse Technology Park Cherry Hinton, Cambridgeshire



Excavation Report



April 2017

Client: Orion

OA East Report No: 2034

OASIS No: oxfordar3-273109

NGR: TL 48832 55949

**Late Neolithic Pits on Land Adjacent to Peterhouse Technology Park, Cherry
Hinton, Cambridgeshire**

Archaeological Excavation

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Summary

Between 8th and 25th September 2015, Oxford Archaeology East carried out an archaeological excavation in advance of the construction of new commercial units on agricultural land to the west of Peterhouse Technology Park, Cherry Hinton, Cambridge (TL 48832 55949). This excavation identified nine pits of Late Neolithic date, along with tree throws containing further Neolithic material. The pits contained varying amounts of material, including Grooved Ware pottery, struck lithics, animal bone and charred plant remains.

1 INTRODUCTION

1.1 Location and scope of work

- 1.1.1 An archaeological excavation was conducted at Peterhouse Technology Park, Cherry Hinton, Cambridge (TL 48832 55949) (Fig.1). This was in advance of the extension of the Technology park to provide additional office space.
- 1.1.2 This archaeological excavation was undertaken in accordance with a Brief issued by Andy Thomas of Cambridgeshire County Council (CCC), supplemented by a Specification prepared by OA East.
- 1.1.3 The work was designed to preserve by record 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).
- 1.1.4 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course, under the site code ECB 4639.

1.2 Geology and topography

- 1.2.1 The British Geological Survey indicates that the solid geology of the site at Cambridge road, Cambridge comprises the Zig-Zag Chalk Formation (<http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>) (accessed 21/02/2017). A number of ice wedges were visible in this chalk after the site was stripped.
- 1.2.2 The site lies on a north-facing slope, dropping from 30m OD at the south to 22m OD at the north.

1.3 Archaeological and historical background

- 1.3.1 The following section draws upon information held in the Cambridgeshire Historic Environment Record (CCC HER).

Prehistoric

- 1.3.2 A single prehistoric flint flake, a transverse arrowhead, a round scraper and a number of other flints of Early Neolithic and Bronze Age date have been recorded immediately to the south-east of Peterhouse Technology Park (ECB 04452).
- 1.3.3 The cropmarks of three ring ditches had previously been recorded on the site of Peterhouse Technology Park (ECB0880). The site was subsequently evaluated and excavated ahead of the construction of the Technology Park, revealing that the ring ditches were all approximately the same size but that none had any evidence of use for burial. Artefacts recovered include Late Neolithic flint artefacts, possibly residual, alongside Middle to Late Bronze Age pottery. The cropmark of a ring ditch has been recorded immediately to the south of Peterhouse Technology Park.
- 1.3.4 In addition, two Bronze Age barrows were formerly located immediately to the west of the study site in the area of the War Ditches but have been destroyed by chalk quarrying (ECB 04964 & 04965). Two Bronze Age flint scrapers have been recorded to the south-east of the site.
- 1.3.5 The War Ditches were a circular earthwork/hill fort of Iron Age date, now destroyed by chalk quarrying, to the south-west of the site (ECB04963).

Roman

- 1.3.6 A Roman settlement, comprising the remains of post-built structures, a number of wells, kilns, pits, inhumation burials, agricultural features and pottery, has been excavated within the War Ditches Iron Age hillfort immediately to the west of the study site (ECB 04963a & 05216).
- 1.3.7 An unspecified number of Roman coins have also been recorded as having been found on the south-eastern corner of the Peterhouse Technology Park (ECB 04841). A sherd of pottery was recorded during the evaluation of the Technology Park itself (ECB 08880a).

Anglo-Saxon to medieval

- 1.3.8 An Early Saxon cemetery comprising 17 inhumation burials with 6th/7th century grave goods has been excavated at War Ditches (ECB04965a).
- 1.3.9 Medieval pottery sherds were recorded during the evaluation of the Peterhouse Technology Park at the northern end of the site (ECB 08880b). Pottery sherds have also been recorded in the south-western corner of the study site, although these may relate to manuring scatters, rather than direct settlement of this location.

1.4 Acknowledgements

- 1.4.1 The author would like to thank Rob Bourn of Orion Heritage, who commissioned the work. The excavation was directed by the author, with the assistance of John Diffey, Toby Knight, Goshia Kwiatkowska and Ashley Pooley. The project was managed by James Drummond-Murray and the on-site survey was carried out by Dave Brown. Andy Thomas monitored the work, on behalf of Cambridgeshire County Council. Barry Bishop visited site to advise on the flint recovery strategy.

2 AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The original aims of the project were set out in the Brief and Written Scheme of Investigation (Thomas 2013, Gilmour 2014) and further refined in the Updated Project Design and Post-Excavation Assessment (Gilmour 2016),

2.1.2 The main aims of this excavation were

- To mitigate the impact of the development on the surviving archaeological remains. The development would have severely impacted upon these remains and as a result a full excavation was required, targeting the areas of archaeological interest highlighted by the previous phases of evaluation.
- To preserve the archaeological evidence contained within the excavation area by record and to attempt a reconstruction of the history and use of the site.

2.1.3 The aims and objectives of the excavation were developed with reference to, Regional and Local Research Agendas (Glazebrook 1997; Brown and Glazebrook 2000; Medlycott and Brown 2008).

2.2 Updated Research Objectives

2.2.1 The post-excavation assessment showed that some of the original aims and objectives of the excavation could be met through the analysis of the excavated materials. However, these referred to the original dating of the pits (from the evaluation) as Early Neolithic.

2.2.2 The post-excavation assessment (Gilmour 2016) process also identified new objectives drawn from national (English Heritage 1997), regional and local research assessments and agendas (Glazebrook 1997; Brown and Glazebrook 2000; Medlycott and Brown 2008). These are outlined below.

Regional Research Objectives

2.2.3 To contribute to the refinement of the chronology and dating of Later Neolithic pottery in East Anglia;

2.2.4 To contribute to the understanding of the exploitation of farmed and wild animals during the Later Neolithic;

2.2.5 To contribute to a better understanding of wider patterns of occupation and activity within the landscape of south Cambridgeshire, by comparison with other Grooved Ware pit sites.

Site Specific Research Objectives

2.2.6 To investigate how this site was used during the Later Neolithic.

2.2.7 To establish a better understanding of the technological characteristics of the flint assemblages in order to elucidate the reduction strategies employed;

2.2.8 To gain further understanding of the depositional history of the assemblages within the Grooved Ware pits.

2.3 Methodology

2.3.1 The methodology used followed that outlined in the Brief (Thomas 2013) and detailed in the Written Scheme of Investigation (Gilmour 2014).

- 2.3.2 Machine excavation was carried out by a tracked 20 ton, 360 excavator using a 2m wide flat bladed ditching bucket. under constant supervision of a suitably qualified and experienced archaeologist.
- 2.3.3 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.
- 2.3.4 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits.
- 2.3.5 All of the soil removed from Neolithic pits on the site was retained and processed by flotation, for the recovery of charred plant remains and artefacts.
- 2.3.6 Site conditions were generally good, with bright sunny weather.

3 RESULTS

3.1 Introduction

3.1.1 Relatively few archaeological features were identified across the excavation area, although a large number of tree throws were present (Fig. 2). The latter are described below, followed by detailed descriptions of the Later Neolithic pits. A context list is included as Appendix A, with full specialist reports of the finds provided in Appendices B and C.

3.1.2 The excavation area was covered by both topsoil and subsoil. The subsoil (2) was a mid greyish brown, silty loam. The topsoil (1) was a dark brownish grey silty loam. Test pitting was carried out across the site to establish the presence of finds within these layers, which did not produce significant quantities of material (Fairbairn 2015).

3.2 Tree Throws and other Natural features(Fig. 2)

3.2.1 A number of tree throws and a large natural hollow were excavated during the excavation. However, only those which contained finds or were of particular interest (e.g. due to a relationship with another features) were assigned context numbers and are discussed below. The remaining natural features that were excavated are shown on figure 2.

Tree throws

3.2.2 Two tree throws (**3** and **5**) were located close to the centre of the excavation area. Tree throw **3** was cut by Late Neolithic pit **1037** and tree throw **5** was cut by pit **1034**.

3.2.3 Tree throw **3** was irregular in plan and profile, with a length of 2.30m, a width of 1.40m and a depth of 0.18m. It was filled by a single deposit (4), which was a mid greyish brown, silty clay. The only finds recovered from this feature was 9g of animal bone.

3.2.4 Tree throw **5**, to the north, was also irregular in plan and profile. It had a length of 1.66m, was 1.30m wide and 0.20m deep. A single deposit (6) filled this feature, comprising a dark greyish brown, silty clay. Finds from this feature comprised 14 struck flints and 410g of animal bone.

3.2.5 Tree throw **10**, located c.20m to the North-east of tree throw **5**, was irregular in plan and profile, with a length of 1.90m, a width of 1.18m and a depth of 0.42m. Deposit 9 entirely filled this tree throw and comprised a dark greyish brown, silty clay. It contained pottery, animal bone and struck flints.

3.2.6 Two tree throws (**1003** and **1008**) did not contain any finds. Both had an irregular shape in plan and irregular profiles, neither contained any finds. The more southerly example (**1008**) had a width of 0.90m and was just 0.08m deep. Deposit 1007 filled this feature: a mid brownish grey, silty sand. Tree throw **1003** was 2.02m long, 1.18m wide and 0.26m deep. Deposit 1002 completely filled feature **1003**, it was a mid greyish brown, silty sand.

3.2.7 Tree throw **1016** was cut by pit **1014**. This tree throw did not contain any finds, however, it may have influenced the location of pit **1014**. This pit was located in the centre of the crescent created by tree throw **1016**.

3.2.8 Tree throw **1016** was 2.88m long, 0.60m wide and 0.32m deep. Deposit 1015 filled this tree throw and it consisted of a mid brownish grey, silty sand.

Hollow 1010 (Fig. 2)

3.2.9 A shallow natural hollow was located at the western edge of the excavation area. This hollow (**1010 - 1022**) had an irregular shape in plan and continued beyond the excavated area to the west. It was 27.50m long, with a maximum width (visible within the excavated area) of 5.25m and was up to 0.15m deep. The hollow was filled by a single deposit (1009 - 1021), which was a dark reddish brown, clayey silt. This deposit produced only very small quantities of flint and animal bone.

3.3 Later Neolithic Pits (Fig.2)

3.3.1 A total of nine pits have been phased to the Later Neolithic period (Table 1). Generally the pits were circular in plan (apart from **1037**), with near vertical sides and flat bases. A summary of each pits' dimension and the finds from them is given in Table 1.

Cut	Fills	Pottery weight (g)	Flint number	Bone weight (g)	Diameter	Depth
8	7	53	115	436	0.98	0.28
1001	1000	0	3	0	0.78	0.24
1006	1004	0	4	0	0.53	0.34
	1005	0	0	0		
1014	1011	119	1045	857	1.35	0.46
	1012	38	27	17		
	1013	1	170	2		
1017	1018	22	153	147	0.88	0.42
1024	1025	0	28	80	0.95	0.48
	1026	0	28	29		
	1027	0	4	14		
	1028	0	88	53		
	1029	0	4	11		
	1030	3	56	21		
1033	1031	52	969	940	0.91	0.36
	1032	0	126	32		
1034	1035	0	11	0	1.10	0.20
1037	1036	21	11	0	1.56 x 0.59	0.24

Table 1: Summary of Later Neolithic pits

3.3.2 These pits were spread across the site, although six pits occurred in three apparent pairs (**1001** and **1006**, **8** and **1017**, **1034** and **1037**).

Pits 8 and 1017 (Fig. 2)

3.3.3 A pair of pits (**8** and **1017**) were position adjacent to each other, within the northern half of the site. Pit **8** was filled by a single deposit (7), which was a dark brownish grey, silty loam. A radiocarbon date was obtained from a fragment of charred hazelnut shell, recovered from its fill. This returned a date of 2866-2580cal BC (GU-39004, 4122±31BP). The finds assemblage from this pit comprised 40 sherds (53g) of Grooved Ware pottery, 115 struck flints (including three edge retouched flakes, two scrapers, 2 serrates and an edge retouched non-prismatic blade) and 436g of animal bone.

3.3.4 Pit **1017** was also filled by a single deposit (1018), which was a dark greyish brown, sandy silt. Finds from this feature comprised 4 sherds 922g0 of Grooved Ware pottery, 153 struck flints (including four edge-retouched pieces, a broken end scrapper, a serrated prismatic blade and a core tool), and 147g of animal bone.

Pits 1001 and 1006 (Fig. 2)

- 3.3.5 Two pits (**1001** and **1006**) were located close to each other, towards the eastern edge in the middle of the excavated area. Pit **1001** was filled by a single deposit (1000), which was a dark greyish brown, sandy silt. Pit **1006** was filled by two deposits (1004, 1005). The basal fill (1005) was a mid greyish brown, silty sand. The upper fill (1004) was a dark brownish grey, silty sand.
- 3.3.6 These two pits each produced just a small quantity of struck flint. Just three flake fragments were recovered from pit **1001**, while three flake fragments and a chip came from pit **1006**.

Pits 1034 and 1037 (Fig. 2)

- 3.3.7 Two pits (**1034** and **1037**) were identified in the centre of the excavation area, cutting two tree throws in the same area (see above).
- 3.3.8 Pit **1034** was filled by a single deposit (1035), which was a mid greyish brown, silty clay. A total of 11 struck flints, including a core tool and a scrapper, were recovered from within deposit 1035. Pit **1037** was also filled by a single deposit (1036), which was a dark greyish brown, silty sand. Finds from deposit 1036 comprised two sherds (21g) of Grooved Ware pottery and 11 struck flints.

Pits 1014, 1024 and 1033 (Fig. 2 and 3)

- 3.3.9 A further three pits were scattered across the rest of the excavation area. Pit **1014** (Fig.3 s.105) lay c.20m to the North-west of pit **1034**, cutting tree throw **1016**, and was filled by three deposits. The basal fill (1012) was a pale greyish brown, silty sand. This was overlain by deposit 1013, which was a mid greyish brown, silty sand. The final deposit (1011), which filled the majority of the pit, was a very dark brownish grey, silty sand. A total of 47 sherds (157g) of Grooved Ware pottery was recovered from this pit, with the majority coming from the final fill (1011), along with 876g of animal bone. Perhaps most significantly, pit **1014** contained the largest assemblage of struck flint from any of the features, with a total of 1,242 pieces. A total of 19 retouched implements were recovered from the pit, all but one from the upper fill (1011). The pieces from fill 1011 include a transverse arrowhead and a small bifacially retouched point which may have broken off from another arrowhead, seven edge trimmed flakes, seven scrapers and two serrated implements
- 3.3.10 Pit **1024** (Fig. 3, s.108) contained the greatest number of fills of any of the pits revealed, with a total of six deposits. The earliest fill (1025) was a mid greyish brown, silty clay. This was overlain by deposit 1026, a dark greyish brown, silty clay. Above this was fill 1027, which was a pale greyish yellow, silty clay. The next deposit in the sequence was fill 1028, a dark greyish brown, silty clay. Above this was deposit 1029, a pale greyish yellow, silty clay. The final fill (1030) was a mid brownish grey, silty clay.
- 3.3.11 The sequence of fills within pit **1024** is of particular interest, as they appear to represent a deliberate series of deposits. The deposits alternated in colours between pale and dark, with the quantity of finds in the dark fills greater than those in the pale fills (see Table 1). Potentially this indicates material excavated from the pit being re-deposited in between separate deposits of more artefact and charcoal-rich material.
- 3.3.12 In contrast, pit **1033** contained just two fills (1031 and 1032). The basal fill (1032) was a dark greyish brown, silty loam. Which was overlain by deposit 1031, which was a dark brownish grey, silty loam.

3.4 Finds Summary

3.4.1 Full reports on the artefacts recovered from the site are presented in Appendix B, with summaries of each material given below.

Lithics (App. B1)

3.4.2 The excavations resulted in the recovery of a large and regionally significant assemblage of struck flint which was predominantly recovered from a series of Later Neolithic pits. The pits also contained substantial quantities of burnt sandstone cobbles. A total of 2,924 pieces of struck flint were recovered during the investigations at the site, 97% of which came from nine pits that have been dated to the Later Neolithic period.

Pottery

3.4.3 A total of 121 sherds weighing 339g were collected from seven excavated features and from subsoil and topsoil. The pottery is fragmentary and no complete vessels were recovered. The sherds are mostly small and poorly preserved and the average sherd weight is 3g. The most significant element of the pottery found during the excavations are 96 sherds of Grooved Ware from five pits. A single sherd of Earlier Neolithic pottery and a possible sherd of Beaker came from the fill of a tree throw and smaller quantities of Iron Age and Roman pottery was also recovered from topsoil and subsoil layers.

3.5 Environmental Summary

3.5.1 Full reports on the ecofacts recovered from this site are given in Appendix C, with summaries below.

Animal bone (App C1)

3.5.2 Of the assemblage's 696 assessable specimens, 182 (26.1%) were identified to species. A proportion of the material was recovered by hand, though the overwhelming majority of bone (63.1%) was retrieved as heavy residues following the processing of bulk soil samples. The assemblage is made up of fragmented mammalian remains with no indication of avian or fish fauna.

Environmental Samples (App C2)

3.5.3 Twenty-one bulk samples were taken from features, predominantly pits, that are Late Neolithic in date. Preservation of plant remains is by carbonisation and is generally poor. Charred grains (usually as single specimens) are present in fourteen of the samples. Both wheat (*Triticum* sp.) and barley (*Hordeum vulgare*) grains are present but preservation is poor and it is possible that these remains are intrusive given the high level of rootlet contamination. Charred hazelnut (*Corylus avellana*) shell fragments are present in twelve of the pit samples, although none of the fragments would constitute more than four whole hazelnuts.

4 DISCUSSION AND CONCLUSIONS

4.1 Deposition within the Later Neolithic pits

4.1.1 There has been extensive discussion on the role of pits during the Neolithic in Britain (e.g. Garrow 2006). It is beyond the scope of this report to present a full analysis of the details of current theories, however, it is widely acknowledged that these pits and the deposits within them are not simply the result of the disposal of rubbish (e.g. Thomas 1999, 64-68).

4.1.2 The number of fills identified within each pit varied, as did the quantity of finds (pottery, flint and bone) recovered from them (Table 2). With all of the pit fills, where larger quantities of any one material was present, comparable large assemblages of the other two were also present. During excavation no finds were uncovered that appeared to have been positioned within the pits. This could suggest that material containing a mixture of artefacts was being placed in the pits, which might support the theory that material placed into the pits derive from existing midden deposits (e.g. Garrow *et al.* 2006).

Cut	Fill	Volume of fill (l)	Pottery weight (g)	Flint number	Bone weight (g)
8	7	226	53	115	434
1001	1000	86	2	3	0
1006	1004	43	0	4	0
	1005	45	0	0	0
	Total	88	0	4	0
1014	1011	274	119	1045	857
	1012	119	38	27	17
	1013	58	1	170	2
	Total	343	158	1242	
1017	1018	258	22	153	147
1024	1025	111	0	28	80
	1026	33	0	28	29
	1027	25	0	4	14
	1028	62	0	88	53
	1029	18	0	4	11
	1030	54	3	56	21
	Total	303	3	208	208
1033	1031	104	52	969	940
	1032	123	0	126	32
	Total	228	52	1095	972
1034	1035	99	0	11	0
1037	1036	182	21	11	0

Table 2: Summary of material recovered from fills within the Late Neolithic Pits.

4.1.3 Of particular interest to any discussion of the nature of deposition within the pits at this site is the fill sequence within pit **1024**. This feature contained the largest number of fills of any of the pits on the site: a total of six. These fills alternated between pale deposits with few finds and dark deposits which contained a greater quantity of artefacts. The fill sequence of pit **1024** would seem to represent a series of deliberate deposits, alternating between 'clean' material (perhaps that excavated to create the pit) and more artefact-and charcoal-rich material (perhaps derived from a midden).

- 4.1.4 The material recovered from the pits represents a significant assemblage for the Later Neolithic period. The total quantity of struck flints from the nine pits was 2843, which includes elements from all stages of the knapping sequence (Appendix B.1). The pottery assemblage from the pits was not as substantial, with a total of 96 sherds (258g), however, this is still sufficient to suggest that the pottery belongs to the Durrington Walls substyle (Appendix B.2).
- 4.1.5 The faunal assemblage recovered from the pits, comprising 696 specimens (182 identifiable to species) is of great interest in exploring the nature of subsistence during the Later Neolithic. This faunal material shows that pig and cattle were most common, but importantly, wild species are still present (Appendix C.2). This ties in with the charred plant remains recovered from the Cherry Hinton pits. Although these remains were sparse, the presence of frequent hazelnut shell fragments (Appendix C.1) also demonstrates the importance of wild food resources.

4.2 Later Neolithic Activity in the South of Cambridgeshire

- 4.2.1 A very limited number of Later Neolithic pit sites have been excavated in Cambridgeshire. In the area around the current site, several pits were excavated in advance of the construction of the Park and Ride site on Babraham Road (Hinman 2001), 1.8km to the south-west of Peterhouse Technology Park. A further large group of pits was excavated within the grounds of Linton Village college (Clarke and Gilmour forthcoming), 11.2km to the south-east of the Peterhouse site.
- 4.2.2 Topographically this site at the base of the Gog Magog hills is fairly typical, with the Babraham Road site being in a similar location (Hinman 2001). However, it has been noted that Grooved Ware pit sites in East Anglia are usually located close to, but just above the flood plain of a river, usually within 1km of a watercourse (Garrow 2006, 81). The Cherry Hinton site is located c.4.5km to the North of the current course of the River Granta and c. 5.2km to the East of the River Cam. This greater than average distance of the current site from a river may be explained by the presence of numerous natural springs in the area around the base of the Gog Magog hills, such as that at Nine Wells c.3km to the south-west of the site.
- 4.2.3 The pits at Cherry Hinton show great similarity to those excavated at Linton Village College (Clarke and Gilmour forthcoming). At Linton, ten pits were excavated, the finds assemblage was similar to Cherry Hinton, as at Linton each pit contained between 59 and 1739 struck flints and between 2g and 534g of Grooved Ware pottery (Clarke and Gilmour forthcoming). In Addition, the pits at both sites had similar sizes and shapes. Radiocarbon determinations from Linton were also in a very similar range, covering the Early to Mid third millennium BC.

4.3 Significance

- 4.3.1 This excavation has resulted in the recovery of a significant assemblage of struck flint. It has also added to our knowledge of Later Neolithic activity in Cambridgeshire, suggesting that it was more widespread than previously believed.

APPENDIX A. CONTEXT INVENTORY

Context

<i>Context</i>	<i>Cut</i>	<i>Category</i>	<i>Feature Type</i>	<i>Length</i>	<i>Breadth</i>	<i>Depth</i>	<i>Colour</i>	<i>Fine component</i>	<i>Coarse component</i>
1	0	layer	topsoil	0					
2	0	layer	subsoil	0					
3	3	cut	tree throw	2.3	1.4	0.18			
4	3	fill	tree throw	2.3	1.4	0.18	mid greyish brown	silty clay	
5	5	cut	tree throw	1.66	1.3				
6	5	fill	tree throw	1.66	1.3	0.2	dark greyish brown	silty clay	charcoal
7	8	cut	pit	0	0.98	0.28	dark brownish grey	silty loam	occasional chalk, rare charcoal
8	8	cut	pit	0	0.98	0.28			
9	9	cut	tree throw	1.9	1.18	0.42			
10	9	fill	tree throw	1.9	1.18	0.42	dark greyish brown	silty clay	occasional chalk
1000	1001	fill	pit	0.78	0.74	0.24	dark greyish brown	silty sand	occasional sub rounded small chalk pebbles
1001	1001	cut	pit	0.78	0.74	0.24			
1002	1003	fill	tree throw	0.9	0.9	0.08	mid greyish brown	silty sand	none
1003	1003	cut	tree throw	0.9	0.9	0.08			
1004	1006	fill	pit	0	0.42	0.24	dark brownish grey	silty sand	occasional small subrounded chalk pebbles, occasional snail shells
1005	1006	fill	pit	0	0.53	0.34	mid greyish brown	silty sand	occasional small sub-rounded chalk pebbles
1006	1006	cut	pit	0	0.53	0.34			
1007	1008	fill	tree throw	2.02	1.18	0.26	mid greyish brown	silty sand	occasional small sub rounded chalk pebbles
1008	1008	cut	tree throw	2.02	1.18	0.26			

<i>Context</i>	<i>Cut</i>	<i>Category</i>	<i>Feature Type</i>	<i>Length</i>	<i>Breadth</i>	<i>Depth</i>	<i>Colour</i>	<i>Fine component</i>	<i>Coarse component</i>
1009	1010	fill	solution hollow	0	5.25	0.15	Dark reddish brown	clay silt	moderate chalk & flint pebbles (up to 50mm) occasional shell, charcoal
1010	1010	cut	solution hollow	0	5.25	0.15			
1011	1014	fill	pit	0	1.05	0.38	Very dark brownish grey	silty sand	occasional small subrounded chalk pebbles
1012	1014	fill	pit	0	0.6	0.08	light greyish brown	silty sand	very frequent moderately sorted subrounded chalk pebbles
1013	1014	fill	pit	0	0.3	0.31	mid greyish brown	silty sand	none
1014	1014	cut	pit	0	1.35	0.46			
1015	1016	fill	tree throw	2.88	0.6	0.32	mid greyish brown	silty sand	occasional small subrounded chalk pebbles
1016	1016	cut	tree throw	2.88	0.6	0.32			
1017	1017	cut	pit	0	0.88	0.42			
1018	1017	fill	pit	0	0.88	0.42	dark greyish brown	sandy silt	frequent small chalk stones, occasional medium rounded flint stones, occasional charcoal
1019	0	finds unit		0					
1020	0	layer		0					
1021	1022	fill	natural hollow	0			mid to dark reddish brown	clayey silt	moderate chalk and pebbles, occasional charcoal
1022	1022	cut	natural hollow	0					
1023	0	VOID		0					
1024	1024	cut	pit	0	0.95	0.48			
1025	1024	fill	pit	0	0.1	0.1	mid greyish brown	silty clay	rare small stones & chalk
1026	1024	fill	pit	0	0.5	0.12	dark greyish brown	silty clay	occasional stone + charcoal?
1027	1024	fill	pit	0	0.6	0.1	light greyish yellow	chalky clay	rare small stones

<i>Context</i>	<i>Cut</i>	<i>Category</i>	<i>Feature Type</i>	<i>Length</i>	<i>Breadth</i>	<i>Depth</i>	<i>Colour</i>	<i>Fine component</i>	<i>Coarse component</i>
1028	1024	fill	pit	0	0.7	0.15	dark greyish brown	silty clay	occasional stone
1029	1024	fill	pit	0	0.85	0.2	light greyish yellow	Chalky clay	rare small stones
1030	1024	fill	pit	0	0.6	0.1	mid greyish brown	silty clay	occasional small stones
1031	1033	fill	pit	0	0.55	0.36	dark brownish grey	silty loam	frequent charcoal, rare chalk
1032	1033	fill	pit	0	0.91	0.34	dark greyish brown	silty loam	occasional charcoal, occasional chalk
1033	1033	cut	pit	0	0.91	0.36			
1034	1034	cut	pit	0	1.1	0.2			
1035	1034	fill	pit	0	1.1	0.2	mid greyish brown	silty clay	occasional small stone
1036	1037	fill	pit	1.56	0.59	0.24	dark greyish brown	silty sand	none
1037	1037	cut	pit	1.56	0.59	0.24			

APPENDIX B. FINDS REPORTS

B.1 Lithics

By Barry Bishop

Introduction

B.1.1 The excavations at Peterhouse Technology Park in Cherry Hinton resulted in the recovery of a large and regionally significant assemblage of struck flint (totalling 2924 pieces) which was predominantly recovered from a series of pits. The pits also contained substantial quantities of burnt sandstone cobbles. The material was subjected to post-excavation assessment which, recognizing its importance, recommended that it should be fully analysed and described in detail (Bishop 2016); this has been completed and the results form the subject of this report. All of the struck flints and the burnt stone have been catalogued according to context (Tables 14 and 15), and detailed descriptions of every core and retouched implement is presented in Tables 16 and 17.

Methodology

B.1.2 The worked flint assemblage was recorded following standard technological and typological classifications which largely follow the methodology of Inzian *et al* (1999) with modifications and additions as indicated in the text by the author. Retouched tools were classified following standard British works such as Healy (1988), Bamford (1985), Waddington (2004) and Butler (2005). Measurements were taken following the methodology of Saville (1980).

Struck Flint

Quantity and Context

B.1.3 A total of 2,924 pieces of struck flint were recovered during the investigations at the site, 97% of which came from nine pits that have been dated to the Neolithic (Table 3).

Type	Decoritication Flakes and blades	Core preparation / modification flakes and blades	Core rejuvenation flakes	Useable flakes	Chips (< 15mm max dimension)	Flake Fragments	Prismatic blade	Non-prismatic blade	Blade-like flakes	Flake Core	Chunks/core shatter	Flake struck from polished implement	Retouched Implements	Total Struck
Soils	6	5		25		5	3	4	2		3		5	58
Neolithic Pits	44	71	19	262	1291	955	45	78	4	9	10	2	53	2843
Tree-throw and Natural hollows	2	2	1	8	3	2		1		1	1		2	23
Total	52	78	20	295	1294	962	48	83	6	10	14	2	60	2924

Table 3: Composition of Lithic Material from the site

B.1.4 Neolithic pits **1014** and **1033**, located around 10m apart on the western side of the site, contained very large assemblages that amounted to over a thousand pieces each. Pit **1014** truncated tree-throw hollow **1016** which produced only two small chips which could easily have been intrusive. Around 10m to the south of pit **1033**, pit **1024** contained a smaller but still substantial assemblage comprising 208 pieces. Towards to northern part of the site, adjacent pits **8** and **1017** also produced very substantial assemblages, at 115 and 153 pieces respectively. Close to these, tree-throw hollow **10**

contained a few struck pieces, amounting to six flakes that are in good condition and which could be contemporary with the assemblages from the pits. Near the centre of the site, adjacent pits **1034** and **1037** furnished only 11 pieces each, but both of these truncated tree-throw hollow **5** which contained 12 pieces, including a Later Neolithic 'spiral' core and two serrated implements. This assemblage does suggest that the tree-throw was still in the process of infilling when the pits were open. The remaining two pits, **1001** and **1006**, were located towards the eastern side of the site. They both produced only a small quantity of chips and flake fragments which are more likely to be intrusive or incidentally incorporated than intentionally deposited. These pits were also located close to tree-throw **1003**, but this contained no struck flint.

- B.1.5 The remainder of the material was present in small quantities in a series of natural hollow or within top- or sub- soil horizons (see Other Features, below).

Raw Materials

- B.1.6 The raw materials used for all of the assemblages from the site comprised good knapping-quality flint. Heavy recortication precludes identifying the colour of most pieces, although occasional recent breaks have revealed the flint to be invariably fine-grained and translucent dark grey or black. Cortex is present on many of the pieces and this is thin and relatively unweathered, although thermally (frost) fractured surfaces are occasionally present. These indicate that the raw materials were gathered from superficial deposits although the low rates of weathering indicate that these were probably close to outcropping eroded flint seams. No knappable flint is present within the Lower Chalk that underlies the site but good knapping quality nodular flint can be found in the Middle and Upper Chalk that outcrops short distances to the south and west.

Condition

- B.1.7 The condition of the pieces is variable although generally the pieces from the pits and other features are either sharp or only slightly chipped, even though a high proportion are broken to some extent and around 5% have been burnt. The overall condition of the assemblages, including the proportions of broken and / or burnt pieces, does vary between the different pits and their fills. The state of these assemblages would indicate that they had entered the pits not long after manufacture but, prior to deposition, had experienced some disturbance such as from redeposition and trampling, and some pieces had been subjected to intense heat, probably hearths. The material from the soil horizons is, not unsurprisingly, in a much more chipped and abraded state than that from the features, consistent with it having been in an active burial environment such as a plough zone for a considerable period.
- B.1.8 All of the pieces from the site have recorticated and in some cases this is quite severe, penetrating over 1mm into the body of the flint. This has caused the edges of many to become friable and to start to disintegrate; whilst this can be differentiated from pre-recortication damage it would obscure any potential traces of utilization or light retouch. A few pieces also have limescale firmly attached to their surfaces which also obscures their finer features.

The Pit Assemblages

- B.1.9 The assemblages from the pits are technologically homogeneous and the product of a competent but adaptable reduction strategy involving the production of both flakes and blades. They can be dated both technologically and typologically to the Later Neolithic (e.g. Edmonds 1995; 1998), a date supported by the presence of Grooved Ware pottery and the radio-carbon determinations. As they are contextually secure and have

provided the bulk of the lithic material from the site, the following descriptions and analyses will concentrate on the assemblages from the pits.

B.1.10 All nine of the pits identified at the site contained some flint although the quantities present varied considerably and difference in technological and typological composition of the assemblages from the separate pits and even their fills are evident (Table 4).

Context	Primary / Decorification Flake	Primary / Decorification Blade	Core preparation / modification flake	Core preparation / modification blade	Core-tablet rejuvenation flake	Transverse core rejuvenation flake	Longitudinal core rejuvenation flakes	Useable flakes	Chips (< 15mm max dimension)	Flake Fragments <15mm	Flake Fragments >15mm	Prismatic blade	Non-prismatic blade	Blade-like flakes	Flake Core	Chunks/core shatter	Flake struck from polished implement	Retouched	Core-tool	Total Struck
Pit 1001																				
Fill 1000 No.										1	2									3
Pit 1006																				
Fill 1004 No.										1	2	1								4
Pit 8																				
Fill 7 No.	5	1	6		1	2	1	34	22	3	15	5	9		3			8		115
Fill 7 %	4.3	0.9	5.2		0.9	1.7	0.9	29.6	19.1	2.6	13.0	4.3	7.8		2.6			7.0		100
Pit 1014																				
Fill 1011 No	17	6	28	6	1	5	2	124	490	196	92	19	33		2	4	2	17	1	1045
Fill 1013 No								1	12	10	3	1								27
Fill 1012 No	1		2					10	67	62	22	2	2		1			1		170
Total No.	18	6	30	6	1	5	2	135	569	268	117	22	35		3	4	2	18	1	1242
Total %	1.4	0.5	2.4	0.5	0.1	0.4	0.2	10.9	45.8	21.6	9.4	1.8	2.8		0.2	0.3	0.2	1.4	0.1	100
Pit 1017																				
Fill 1018 No.	2		5			1		15	60	51	7	2	3						7	153
Fill 1018 %	1.3		3.3			0.7		9.8	39.2	33.3	4.6	1.3	2.0						4.6	100
Pit 1024																				
Fill 1030 No	1		2					5	9	22	16		1							56
Fill 1029 No									1	2								1		4
Fill 1028 No	3		9					12	29	17	15					1		2		88
Fill 1027 No									1	2	1									4
Fill 1026 No	1	1	2					6	2	4	5	2	3					2		28
Fill 1025 No								3	12	8			2					2		28
All No.	5	1	14					26	54	55	37	2	6			1		7		208
All %	2.4	0.5	6.7					12.5	26.0	26.4	17.8	1.0	2.9			0.5		3.4		100

Pit 1033																	
Fill 1031	3	1	6	1	2	3	37	513	311	53	8	16	2	2	3	8	969
No																	
Fill 1032	1	1	1	1		1	11	65	17	10	6	7		1	2	2	126
No																	
All No.	4	2	7	2	2	4	48	578	328	63	14	23	2	3	5	10	1095
All %	0.4	0.2	0.6	0.2	0.2	0.4	4.4	52.8	30.0	5.8	1.3	2.1	0.2	0.3	0.5	0.9	100

Pit 1034																		
Fill 1035			1					6	2							1	1	11
No																		

Pit 1037																		
Fill 1036							4	1	2	1		2	1					11
No																		

Table 4: Typological and Technological Composition of the Struck Flint from the Neolithic Pits (NB: percentages only given for assemblages that contain over 100 pieces)

Pit 8

B.1.11 Pit 8 produced 115 pieces of struck flint from its single fill 7 of which 22% comprised micro-debitage (chips and flake fragments smaller than 15mm in maximum dimension – see Micro-debitage, below), the second lowest proportion of such small pieces from any of the pits. There are high proportions of retouched implements which account for 7.0% of the total. These include four flakes with light edge retouch or heavy use-wear consistent with being used as cutting implements, two end-scrapers and two serrated flakes. Cores are also relatively well represented, the three examples contributing the highest proportion to the assemblages of any of the pits. They comprise a centripetally worked cobble, a rounded nodule with two platforms worked ‘keel’ style at either end and a bifacially worked tabular cobble with a ‘main’ flakes detached from both faces, reminiscent of Levallois-like techniques.

Pit 1001

B.1.12 The single fill 1000 of pit 1001 contained only three small and undiagnostic flake fragments.

Pit 1006

B.1.13 Fill 1004 of pit 1006 produced only a single chip and three flake fragments, all of which are small and undiagnostic.

Pit 1014

B.1.14 Pit 1014 produced the largest assemblage from any of the pits which amounts to 1,242 pieces. The assemblage was concentrated in the upper of its three fills, 1011, which contributed 1,045 of the pieces or 84% of the total from the pit. Its middle fill 1013 contained only 27 pieces whilst its lowest fill 1012 contained 170 pieces. A large proportion of the assemblages from all three fills consists of micro-debitage, this accounting for three-quarters of the assemblage from the lower fill, four-fifths of that from the middle fill and two-thirds of the total from the upper fill.

B.1.15 A total of 19 retouched implements were recovered from the pit, all but one from the upper fill. These amounted to a relatively low 1.5% of the total assemblage although this increases to 4.7% if the micro-debitage is excluded. The pieces from fill 1011 include a transverse arrowhead and a small bifacially retouched point or barb which may have broken off from another arrowhead, seven edge trimmed flakes, seven scrapers and two serrated implements. The piece from fill 1012 comprises a flake that has rather battered abrupt bifacial retouch along one edge. The upper fill also produced the only

two flakes from the site that had been struck off ground flint implements, probably polished axeheads.

- B.1.16 Only three cores were recovered from this pit, two from the upper fill and one from the lower fill. Those from fill 1011 are both domed shaped and somewhat Levallois-like, whilst that from fill 1012 has two opposed keeled platforms.

Pit 1017

- B.1.17 The single fill of pit **1017** contained 153 pieces of which nearly three-quarters consist of micro-debitage and most of the other pieces are relatively small. There are no cores but seven retouched pieces are present, which amount to a remarkably high 16.7% of the total if the micro-debitage is excluded. These include three edge trimmed flakes, a scraper, a small bifacially worked fragment which may have broken off an arrowhead and a serrated blade. The remaining piece comprises a thermal spall with bifacial flaking along one of its sides suggesting it may have been intended as a chopping tool.

Pit 1024

- B.1.18 Pit **1024** produced 208 pieces from its six fills, the most fills of any of the pits from the site. The variable quantities of struck flint present in the fills suggest that its deposition occurred episodically. Excluding the micro-debitage, which due to its size can easily travel between fills through processes such as bioturbation, the lowest fill 1025 provided eight pieces, followed by fill 1026 which produced 22 pieces, then fill 1027 contained only a single piece but above that fill 1028 furnished 42 pieces, followed by fill 1029 which also had only a single piece, and the last fill 1030 contained 25 pieces. This suggests sequences of relatively artefact-rich deposits being interspersed by relatively sterile accumulations.

- B.1.19 No cores were present but seven retouched implements were recovered. One of these is a possibly unfinished or minimally retouched transverse arrowhead from the lowest fill. The others are all edge trimmed flakes; most were probably used for cutting although two have bifacial retouch reminiscent of that used to make transverse arrowheads; one could be a broken barb and the other possibly a fragment of an arrowhead that broke during manufacture.

Pit 1033

- B.1.20 Pit **1033** produced the second largest assemblage from any of the pits, amounting to 1,095 pieces that were recovered from its two fills. The majority of this, comprising 95% of the total from the pit, came from its uppermost fill although nearly four fifths comprises micro-debitage. Micro-debitage also contributes two thirds of assemblage from the lowest fill. The pit produced three cores. The two from the upper fill refit to each other. They were originally a larger core that broken along an internal flaw and subsequently one of the fragments was made into a Levallois-like domed core and the other fragment was turned into a blade core and has three platforms. The core from the lower fill had also produced blades from a platform on its 'front' but subsequently many smaller flakes were removed centripetally from around its 'back'. The systematic working of cores is also indicated by the presence of refitting core-tablets from the upper fill.

- B.1.21 Ten retouched implements were recovered from this pit. The upper fill produced two transverse arrowheads, one made on a large blade, the other on a flake that may have been struck from a Levallois-like core. They also include a bifacially worked fragment that may be a broken barb from a further arrowhead. The others comprise five edge

retouched flakes, a serrated blade and a small fragment of what may have been a denticulated implement.

Pit 1034

B.1.22 Pit **1034** produced eleven struck pieces from its single fill 1035. Only three of these, a thick core preparation flake, an end-scraper and a bifacially flaked core that has been re-used as a hammerstone, measure in excess of 15mm.

Pit 1037

B.1.23 Pit **1037** also contained eleven pieces in its single fill, [1036], only three of which comprises micro-debitage. No cores or retouched pieces are present.

Refitting

B.1.24 Attempts were made to refit the struck flint, including pieces from the different features, pieces from separate fills within the same features and with pieces from within the same fills. Despite robust attempts, this resulted in only five sequential removals being identified, these all from the two largest single context assemblages, fills 1011 of pit **1014** and fill 1031 of pit **1033** (Table 5). No refits could be made either between separate fills within the same pit or from different features.

Fill	Pit	Description
1011	1014	Flake refits to a domed centripetally worked core which continued to worked long after the flake was removed
1011	1014	Two refitting decortication blades.
1031	1033	Two cores refit to each other. They appear to have originally constituted a flake core that had split in two along a small internal void. Both fragments were then further worked, one being centripetally flaked and possibly intended as a Levallois-like core, the other was rather irregularly flaked but had produced a few non-prismatic blades.
1031	1033	Two refitting core-tablets. One of these had been struck, this was then followed by the removal of a series of flakes from the core face, none of which were present, before the second was removed.
1031	1033	Two refitting transverse core rejuvenation flakes. It appears the first was considered too small to alter the core so a further, larger, flake was subsequently removed.

Table 5: Descriptions of Refitting Sequences

B.1.25 The presence of refits certainly demonstrates the basic integrity of the assemblages from the within the same fills, However, the failure to find examples from inter- or intra-pit contexts could be taken to indicate the material employed in the successive depositional events within pits with multiple fills and for the infilling of the different pits were selected from discrete knapping sequences. These conclusions should be tempered by the difficulties encountered during the exercise. The refitting attempts were hindered by the full recortication all of the pieces had experienced, resulting in them having a very uniform appearance and hiding variations in their natural colours, textures and inclusions. It was also made difficult by the relatively high levels of fragmentation and the small size of many pieces. Nevertheless, the exercise did demonstrate that within all assemblages there are a large numbers of pieces that simply could not be refitted, and therefore that even within the larger assemblages the material present only represents a small fraction of what must have been generated. It is also interesting that

a number of barbs of possible transverse arrowheads were found but, despite some of the more complete arrowheads missing their barbs, none of these refitted together.

- B.1.26 The lack of success with inter-pit and inter-fill refitting may indicate that the assemblages from the different pits and their fills derived from separate knapping episodes. Nevertheless, this should not distract from what is perhaps the most important observation; that the raw materials used for all of the pit assemblages is non local and very homogeneous in texture, cortex and, where visible, colour. Despite the presence of numerous flint sources in the area, it appears all of the material used at the site came from a single location. The use of similar raw materials binds the assemblages from the pits together and suggests that they were generated by the same communities over a relatively short chronological span.

Composition: Typology, Including Metrical and Technological Analysis

- B.1.27 The assemblages from the pits are technologically comparable and include elements from all stages of the knapping sequence, from the decortication of raw materials to the discard of used retouched implements. These have been treated as a single assemblage and classified according to a basic techno-typological scheme, the various elements of which are discussed below.

Micro-debitage

- B.1.28 Of the 2,842 pieces of struck flint recovered from the nine pits, 1,291 consist of chips, here defined as flakes less than 15mm in maximum dimension, and a further 712 pieces comprise unclassifiable flake fragments that also measure less than 15mm. Together these diminutive pieces are generally referred to as micro-debitage and the larger flakes and flake fragments as macro-debitage. The vast majority were recovered from the sieved samples and the high proportions recovered here are a testament to the total sieving employed on the pits' fills.
- B.1.29 Small flakes and pieces of shatter are generated in considerable numbers during reduction, from the deliberate trimming of cores and the retouching of flakes and blades, and also accidentally as by-products generated during the detaching of larger flakes. They contribute over three-quarters of the total assemblage although their proportion of the assemblages from the different pits and fills does vary (see Table 3). Although the quantities of micro-debitage present are substantial, there remain fewer pieces than would be expected if knapping had occurred directly into any of the features. Nevertheless, when the material was being gathered for deposition in the pits, it appears care was taken to include all of the debris and not just the larger pieces, and it is possible that knapping took place on a sheet or skin which has helped retain even the smallest pieces.

Flakes and Blades

- B.1.30 Flakes and blades account for nearly 98% of the macro-debitage, with cores and conchoidally fractured fragments making up the remainder. These have been classified according to their perceived position within the knapping sequence although in reality the bulk of the flakes and probably many of the blades were probably removed as part of a continuous process of striking platform and core-face adjustment.
- B.1.31 The decortication flakes and blades all have at least 50% of their dorsal surfaces covered by cortex. Altogether these form just over 5% of the macro-debitage, with just under a fifth of these being of blade dimensions. The manufacture of blades is not a requirement of decorticating raw materials, and this suggests that the production of blades was an ingrained aspect of flintworking practices, rather than a specific

technique reserved for potentially useable pieces. The presence of decortication flakes and blades certainly indicates that cores were being prepared, but the quantities present are not as high as might be expected, suggesting the possibility that the raw materials may have been preliminarily dressed closer to where they were collected and before the pit assemblages were formed. However, the large size of the nodules and the extent to which they have been worked would also reduce the relative number of cortical flakes and blades, so the degree to which raw materials were dressed at the source is difficult to determine.

- B.1.32 Core modification flakes contribute just over 8% of the macro-debitage. These are not easy to classify but they are mostly large, bulky removals that have significantly altered the shape of the raw materials or have remodelled the cores. Just over 2% of the assemblage comprises core rejuvenation flakes that have been detached in order to alter striking platforms and core faces and facilitate continued flake and blade production. Most of those identified comprise flakes struck transversely across the core face, usually to remove deep flake scars, but others were struck longitudinally to remove large parts of the core's face and there are also a few 'classic' core-tablets that remove all or most of the striking platform, a technique most commonly employed on blade cores.
- B.1.33 The remaining flakes and blades are considered to represent the main products of reduction and are either at least potentially useable or have been retouched to make formal tools. These account for just over 75% of the flakes and blades, although nearly a third is fragmentary and it is unlikely that all were seen by the knappers as suitable for use. In reality, probably the majority come from trimming cores and core faces in order to produce the flakes and blades that were intended for use. The potentially useable pieces comprise flakes, blades and flakes that have blade-like traits such as parallel dorsal scars. They vary considerably in shape and size with both wide flakes and narrow blades being produced. Blades, defined here as flakes that are at least twice as long as wide, account for 18% of the total macro-debitage, with just over a third of these being prismatic, in that they have parallel sides and dorsal scars, demonstrating that they were made by a systematic reduction strategy that resulted in the production of relatively standardized sized and shaped pieces. To these can be added the blade-like flakes which, although not of blade dimensions, do have parallel sides and dorsal scars. The non-prismatic blades tend to be more irregular and thicker. Relatively wide flakes were also produced and, as well as their *ad hoc* production from 'normal' flake cores, there is good evidence that flakes of pre-determined shapes and sizes were being made using methods reminiscent of the Levallois technique; indeed, it is likely that many of the potentially 'useable' flakes were actually detached to trim and shape these cores.
- B.1.34 In order to gain insight into the general metrical and technological characteristics of the pit assemblages and to get an impression of possible variability between assemblages from different pits, all of the complete unretouched flakes and blades measuring over 15mm in maximum dimension from the two largest pit assemblages, pits **1014** and **1033**, were subjected to detailed metrical and technological analysis. The small number of complete pieces present meant that it was not statistically worthwhile to separate the assemblages from the different fills within the pits. Pit **1014** contributed 195 complete pieces, 183 of which came from fill 1011, ten from fill 1012 and two from fill 1013. Pit **1033** provided 69 pieces; 57 from fill 1031 and twelve from fill 1032.
- B.1.35 The selection of complete pieces is necessary in order to provide metrical data but will unavoidably result in a degree of bias; thinner and narrower pieces are likely to be

underrepresented as these are more prone to breakage. Equally, there will be a bias towards pieces from the earlier stages in the reduction process as these tend to be thicker and therefore less likely to break. Nevertheless, it is thought that sufficient complete pieces from all stages in the sequence were included to give a broad indication of the character of the assemblages.

Metrical Characteristics

B.1.36 The flakes and blades range considerably in size but the majority are small, with 81% measuring less than 40mm long and 87% less than 30mm wide. A small proportion is considerably larger, however, and the abundance of small pieces most probably reflects the efforts expended on core preparation and maintenance. Interestingly, the complete retouched implements are considerable larger on average than the unretouched pieces chosen for this analysis (Table 6). Average lengths and breadths are only just over 30mm and only 6% exceed 50mm in either length or breadth. Despite their small size, the flakes and blades tend to be thin, averaging at only just over 4mm and with an average thickness to length ratio of 0.15. Table 6: Metrical Characteristics of Flakes and Blades

Complete Flakes Measuring 15mm or More in at Least One Dimension			
	Length (mm)	Breadth (mm)	Thickness (mm)
Pit [1014] Maximum (mm)	79	57	18
Pit [1033] Maximum (mm)	74	61	15
Pit [1014] Minimum (mm)	12	8	1
Pit [1033] Minimum (mm)	13	5	1
Pit [1014] Average (mm)	25.2	19.3	4.0
Pit [1033] Average (mm)	31.7	21.2	4.2
Combined Average (mm)	27.0	19.9	4.1
<i>All Complete Retouched Maximum (mm)</i>	93	63	26
<i>All Complete Retouched Minimum (mm)</i>	26	6	2
<i>All Complete Retouched Average (mm)</i>	54.3	33.9	8.5

Table 6: Metrical Characteristics of Flakes and Blades

B.1.37 There is also considerable variation in the shape of the complete flakes and blades, although they have a marked tendency to be narrow, with 65.7% being narrower than they are long and 20.9% achieving blade dimensions by being twice as long as wide, a fairly impressive proportion given that blades are more prone to breakage as they tend to be thinner and more fragile.

Pitts 1978a, 194 Breadth / Length Ratio	<0.2	Narrow blades 0.21-0.4	Blades 0.41-0.6	Narrow flakes 0.61-0.8	Flakes 0.81-1.0	Broad flakes 1.0+
E. Meso	2	43	27	13	6.5	9
L. Meso	0.5	15.5	30.5	22	14.5	17
E. Neo	0	11	33	27.5	14.5	13
L. Neo	0	4	21.5	29	20	25.5
Chalcolithic	0	2.5	15	24	24	35
Bronze Age	0	3.5	14.5	23	23	35.5
CAMPET Pit [1014]	0	9.3	19.8	19.8	16.5	34.6
CAMPET Pit [1033]	0	16.6	25.0	26.4	18.1	13.9
CAMPET Combined	0	11.1	20.9	22.4	16.9	28.7

Table 7: Complete Flake Breadth/Length Ratios as Recorded by Pitts (1978a) Compared with those from the site

B.1.38 Table 7 charts changes in flake shape from the Early Mesolithic through to the Bronze Age, as documented by Pitts (1978a and b). Compared to the Later Neolithic assemblages he analysed, the overall sample from this site tends towards being narrower, with the narrow blades, narrow flakes and flake proportions being closer to those of his Early Neolithic or Mesolithic industries. The trend is not universal, however, with the proportions of blades and broad flakes being more comparable to Pitts' Later Neolithic group.

B.1.39 There is also a marked difference between the assemblages from the two pits, with the pieces from **1033** being on average larger and narrower and with the assemblage from pit **1014** containing notably higher proportions of broad flakes; this discrepancy probably accounts for many of the overall differences between this site assemblage and the Later Neolithic ones studied by Pitts. At least part of these differences is possibly due to the assemblage from pit **1014** containing nearly twice as many decortication and core modification flakes than pit **1033**, these reflecting the need to shape the cores rather than being the shape of desired end products.

Technological Attributes

B.1.40 The principal technological attributes of the unretouched flakes also demonstrate a careful and considered approach to reduction that resulted in the production of thin and long flakes and blades.

Striking Platform Attributes: Complete Flakes											
Striking platform type %				Striking Platform Width (mm)				Striking Platform Preparation %			
	Pit 1014	Pit 1033	Combined		Pit 1014	Pit 1033	Combined		Pit 1014	Pit 1033	Combined
Abraded	10.1	4.7	7.7	Maximum	10	10	10	Abraded	15.8	6.6	11.7
Cortical	7.6	4.7	6.3	Average	2.0	2.8	2.3	Edge Trimmed	52.2	55.7	53.7
Dihedral	10.1	10.9	10.5	Minimum	1	1	1	None	32.0	37.7	34.6
Facetted	12.7	18.8	15.4								

Flaked Surface	40.5	39.0	39.9								
Shattered / Not present	19.0	21.9	20.2								

Table 8: Principal Striking Platform Attributes of All Complete Flakes

- B.1.41 Modifications to the actual striking platforms were frequently undertaken, with a third of the extant platforms being dihedral, faceted or abraded, whilst nearly two-thirds of striking platform / core face angles had been altered by either abrasion or trimming (Table 8). Facetting and flaking to form dihedral striking platform surfaces was undertaken to enable good control to be exercised over the exact point of percussion, but in many cases these platforms were also notably ridged, suggesting that the flakes had been removed from cores with very acute platforms such as seen on thin bifacially worked cores. These alterations also allowed the detaching blows to be made very close to the edge of the core; on average the striking platforms are only 2.3mm deep and with a fifth of detachments the point of percussion landed so close to the edge that either practically nothing remained of the striking platform or it had shattered. The modifications also meant that striking platform / core face angles rarely deviated from being just less than right-angled although the 20% or so that were either notably acute or obtuse had clearly been struck from cores with acutely angled platforms. The predominant use of soft hammer precursors combined with good control over the force and angle of detachment resulted in only 16% of the pieces having visible points of percussion and even fewer, 5%, had extra, undeveloped Hertzian cones from failed prior attempts at detachment.
- B.1.42 The assemblage from pit **1014** has higher proportions of flakes with abraded striking platforms and / or abraded platform edge / core face angles and this is thought to be associated with the reduction of relatively thin bifacially worked cores, including but not limited to bifacial tools such as axeheads. With these, the ridge that forms the platform for removing flakes from both faces of the core is blunted by in order to provide a suitable angle for detaching thin flakes
- B.1.43 Good flaking control is also evident in that just under two-thirds of the flakes and blades have feathered terminations with the majority of the remainder having only slightly hinged terminations. Complementing these, over half of the flakes and blades have diffuse bulbs of percussion with a further 18% having a small and isolated hemispherical bulb, the latter being features mostly present on the prismatic blades (Table 9).

Bulb of Percussion Type %			Distal Termination Type %				
	Pit 1014	Pit 1033	Combined		Pit 1014	Pit 1033	Combined
Diffuse	53.2	52.2	52.7	Feathered	57.9	74.2	65.2
Pronounced	31.6	27.5	29.7	Hinged	42.1	25.8	34.7
Hemispherical	15.2	20.3	17.6				

Table 9: Principal Technological Attributes of the Selected Flakes and Blades

- B.1.44 Pieces with prominent bulbs of percussion and hinged distal terminations are more likely to be larger and thicker and belong to earlier stages in the reduction sequence. Whilst these attributes cannot always be directly attributed to hammer mode, the evidence here suggests that it is likely that the earlier stages in core preparation were undertaken with hard hammers with routine flake and blade production using soft hammers.
- B.1.45 Looking at the different assemblages, it is notable that there are higher proportions of hemispherical bulbs of percussion and proportionally far fewer hinged distal terminations in the material from pit **1033** than pit **1014**, this most probably being due to it having higher proportions of pieces from the earlier stages of reduction.
- B.1.46 The dorsal scar patterns on the blades and flakes vary considerably (Table 10). Whilst they are most commonly uni-directional nearly a third are multi-directional and there are fairly high proportions with parallel scars, indicative of systematic reduction. There are also a small but significant number with orthogonal scars, which are likely to represent core rejuvenation flakes and which demonstrate a concern with core maintenance.

Dorsal Scar Pattern (%)			Cortical Dorsal Surface (%)			Dorsal Flake Scars (%)					
Scar Alignment	Pit 1014	Pit 1033	Combined	Proportion covered	Pit 1014	Pit 1033	Combined	No.	Pit 1014	Pit 1033	Combined
Fully Cortical	2.5	1.4	2.0	None	67.1	67.6	67.4	0	2.5	1.6	2.0
Orthogonal	6.3	7.0	6.7	1-33%	19.0	16.9	18.1	1	12.7	1.6	7.7
Multi-directional	21.5	39.4	30.1	34-66%	3.8	5.6	4.6	2	21.5	17.2	19.6
Opposed	2.5	2.8	2.7	67-99%	7.6	8.5	8.0	3	22.8	28.1	25.2
Parallel	12.7	12.7	12.7	100%	2.5	1.4	1.9	4	13.9	20.3	16.8
Unidirectional	54.5	36.6	45.9					5+	26.6	31.2	28.7

Table 10: Principal Dorsal Surface Attributes of the Selected Flakes and Blades

- B.1.47 True primary flakes make up only 2% of the flakes and blades whilst only 12% have 50% or more of their dorsal surfaces covered with cortex. Tertiary flakes, retaining no

cortex account for over three-quarters of the flakes and blades. The low proportions of cortical flakes, particularly primary flakes, may indicate that the early stages in raw material processing are not represented, but those that are present show that cores were being prepared and that most of the reduction sequence is represented. The flakes and blades also tend to have many flake scars with over two-thirds having three or more scars.

- B.1.48 Taken together this indicates that the cores had mostly been extensively reduced and although often multi-platformed, individual flaking sequences were generally complex with many flakes removed.
- B.1.49 Interestingly, fill **1011** has higher proportions of flakes and blades with uni-directional scars and, conversely, pit **1033** has more with multi-direction scars. The former also tend to have fewer flake scars and it is likely these differences are at least partially due to the smaller sizes of the flakes from pit **1033**.

Cores

- B.1.50 Only nine complete cores were recovered from the pits. They were found in only three of the pits; pit **8**, **1014** and **1033**, and represent a relatively low 1.1% of the macro-debitage (see table 16 for full metrical and technological attributes of all complete cores). A further ten conchoidally fractured pieces, many of which are likely to be fragments of cores that disintegrated during reduction, are also present, although even including these, the core pieces only amount to 2.3% of the total macro-debitage. The relative paucity of cores raises the possibility that some which were worked and perhaps even prepared at the site were still-serviceable and taken away for use elsewhere.
- B.1.51 The complete cores varied in shape and ranged from 46g to 169g in weight. The largest measured 76mm in length and given the presence of even larger flakes amongst the assemblages it is evident that these had been extensively reduced. Eight of the complete cores focussed on the production of flakes, the other two having produced blades. Additionally, two possible further centripetally worked cores were identified, both of which appear to have been re-used as core-tools (see below).
- B.1.52 Five of the flake cores were either discoidal or domed shaped and had unifacial or bifacial working undertaken centripetal around their edges, which had the effect of creating either one or two carefully formed convex flaked surfaces. Two of these were clearly Levallois-like and had 'main' flakes removed from their faces, whilst three others had been prepared in a similar way but without 'main' flake removal. The remaining two flake cores had also been worked bifacially; one having two opposed 'keeled' platforms and the other comprising a small rounded nodule with a keeled platform at one end. The two blade cores include a multi-platform type and that had produced numerous blades from the front but had centripetal working on the back similar to the Levallois-like cores. The other had a keeled platform and was rather irregularly worked but had produced a few non-prismatic blades.

Retouched Implements

- B.1.53 A total of 53 retouched and other implements were recovered from the pits, representing a relatively high 6.3% of the macro-debitage. This would be consistent with what may be expected from generalised settlement type activities, although the proportions present vary considerably between the pits (Table 11; see table 17 for detailed descriptions including contextual origin of all implements).

B.1.54 Fifty of these are retouched flakes or blades and a further three tools made on cores or unworked pieces of raw materials were also identified, these consisting of a scraper and two chopping type implements. The types present were limited however, with edge-trimmed pieces and scrapers dominating the assemblage along with a few arrowheads and serrated implements. Traditionally, arrowheads are associated with hunting and the dominance of scrapers and cutting implements could be taken to suggest an emphasis on animal processing and hide working although many other uses are possible. Two flakes with ground facets on their dorsal surfaces were also recovered, both from pit **1014**. Whilst these show no evidence of having been used as tools, they do demonstrate the working down of a ground flint implement, quite possibly an axehead.

Feature	Tools: % of macro-debitage	Arrowhead	Bifacially worked core-tool	Edge-trimmed	Scraper	Serrate	Total
Pit 8	8.9			4	2	2	8
Pit 1014	4.7	1		9	7	2	19
Pit 1017	16.7	4	1		1	1	7
Pit 1024	7.1	1		6			7
Pit 1033	5.3	2		7		1	9
Pit 1034	66.7		1		1		2
Total		4	2	30	11	6	53

Table 11: Quantification of retouched and other implements

Arrowheads

B.1.55 Four arrowheads, all transverse types were found; two came from pit **1033** and pits **1014** and **1024** provided one each. The two from pit **1033** comprise a chisel and an oblique sub-type, the latter missing its tip. The example from **1014** is also missing its tip and it most likely is an oblique type; metrically it could fall into Green's chisel category. The arrowhead from pit **1024** is possibly unfinished; it is a chisel type and has the characteristic bifacial retouch along one side but the other side is formed by its hinged distal termination. The oblique arrowheads were both made on large narrow flakes or blades and the chisel types on wide flakes, both quite possibly struck from Levallois-like cores. Transverse arrowheads are chronologically diagnostic of Later Neolithic industries and are frequently associated with Grooved ware sites (Clark 1934; Green 1980). There would appear to be a predominant association of Durrington Walls and Clacton sub-style of Grooved ware with oblique types and Woodlands sub-style Grooved ware and Peterborough ware with chisel types (Green 1980 235-6; Healy 1984, 13), which may have a chronological implication (Green 1984).

Bifacially Worked Implements

B.1.56 Two sturdy lenticular cores with bifacially worked convex edges were identified. One has extensive battering around its convex edge, consistent with having been used as a hammerstone or pounding tool, the other has an irregular, almost coarsely denticulated edge that shows little sign of use but is suggestive of a use as a chopping or perhaps scraping implement.

Edge-Trimmed Flakes and Blades

B.1.57 These include flakes and blades with light or moderate retouch along one or more margins that does not significantly alter their original shape. They comprise the most common implement type and it is also likely that further lightly edge-retouched pieces

have not been recognized due to their modifications being obscured by post-depositional abrasion or damage from recortication. It is possible that more of the assemblage had been utilised but left no identifying features. Of the 30 that were identified, 13 were made using flakes, nine on blades or narrow flakes and eight are unclassifiable fragments. The extent of modification is variable although it nearly always focuses on the longer, lateral, margins. It ranges from being limited to short lengths of the edge to encompassing most of the perimeter of the flake, and from being straight, convex or concave to sinuous.

- B.1.58 In most cases the modification clearly consists of very fine retouching. With 21 of pieces the retouch was shallow and helped to strengthen an already acute edge, a few of these may actually be worn down serrated implements. With some, it is not clear whether the modification was deliberately executed or consists of micro-chipping formed through utilizing the flake as a cutting implement (e.g. Tringham *et al.* 1974). Four have steeper retouch blunting the edge and it is likely that this was undertaken to allow them to be safely handled. They were probably used in a variety of ways and on many different materials but, despite the great variability in the size and shape of the blanks and in the nature of the modification, most were likely to have been used as cutting, sawing or light scraping tools. The remaining five pieces all have semi-invasive and often bifacial retouch. One of these is a laterally snapped flake with inverse invasive retouch that truncated the flake's proximal end and is very likely to be a transverse arrowhead that snapped during manufacture. The other four are all small fragmented tips that have formed from bifacial retouch and are very similar to the tips or barbs of arrowheads that had snapped off during manufacture or use. Interestingly, the tips of two of the arrowheads are missing (see Arrowheads, above), although none of these bifacially worked fragments refitted onto the broken arrowheads.

Scrapers

- B.1.59 Eleven scrapers were identified, these forming the second largest group of implements. Four short-end and three long-end types are present, the others being broken. The complete examples are variable in form and range from 60mm to 40mm in length and between 20mm and 45mm in breadth. All have convex working edges and in many cases care has been taken to make them symmetrical and finely arced, a trait often noted with Later Neolithic scrapers. One of the short-end examples was made on what appears to be an otherwise unstruck thermally (frost) shattered chunk and therefore can be considered as a core-tool.
- B.1.60 Scrapers are traditionally regarded as implements used to process hide and it is entirely possible that some or many of those recorded here were used as such. Nevertheless, ethnographic and experimental work has shown that, as with many tool types, scrapers may have been used for a variety of different tasks, including cutting, graving, chopping and even as projectile points; often the same tool can be used for different purposes at different times (Odell 1981; Andrefsky 1998).

Serrates

- B.1.61 Six serrates were recovered, all comprising narrow flakes and blades that have between c. 10 – 15 per cm closely spaced fine nicks along their edges. One has been serrated along both of its lateral margins, the remaining five along only one. The complete examples vary in size from between 65mm and 47mm in length and from 19mm to 30mm in breadth.
- B.1.62 Serrated implements are traditionally associated with harvesting cereals but this could also include gathering other silica-rich plants, such as reeds, rushes and sedges.

Experimental work involving micro-wear analysis suggests that serrated blades could have been used in cutting or sawing soft plant material, such as bracken or green wood (Levi-Sala 1992) and other micro-wear experiments have tended to confirm an association with plant processing (Grace 1992; Donahue 2002, 84-85). This may include stripping the fibre from plants to make cordage and textiles (Hurcombe 2007; Juel Jensen 1994).

Technological Strategies

- B.1.63 The strategy used to produce the flintwork can be seen as a single tradition but one that is complex and multi-faceted. The relatively low numbers of cores present hampers the secure identification of specific knapping techniques but analyses of those that are present as well as the debitage has demonstrated that a diverse suite of technological strategies were used to obtain a wide range of flakes and blades suitable for conversion into a variety of tool types. Such multi-strategy approaches are a characteristic feature of Later Neolithic flintworking industries. Interestingly, some of the cores show evidence for more than one form of working, demonstrating not only the different core working strategies, but that these were being conducted on the same pieces of raw material and possibly by the same person.
- B.1.64 Much of the assemblage was produced using fairly simple and expedient forms of core working, including the use of 'keeled' platforms and the bifacial working of relatively thin, lenticular or discoidal shaped cores. The predominant types of cores recovered along with much of the debitage indicates one of the principal technological approaches involves the careful shaping of core faces which would allow 'main' flakes of pre-determined shapes and sizes to be detached; a technique often referred to as 'Levallois-like'.
- B.1.65 A related technique involves the bifacial reduction of relatively thin discoidal or lenticular cores with finely faceted or abraded keeled platforms, reminiscent of the 'turned' edges that are created during the manufacture of bifacial tools such as axeheads. Other similarities with axe manufacture include the presence of many thin flakes with markedly curved profiles and opposed or multi-direction dorsal flake scars. The presence of some pieces with either notably acute or obtuse flaking angles (the angle between the striking platform and ventral surface) is also due to the striking platform being ridged. Whilst some of the debitage could easily come from axe manufacture there are not the kinds of quantities that might be expected if the reduction was primarily geared towards their production. The evident focus on techniques involving the bifacial reduction of cores would perhaps more plausibly account for these pieces.
- B.1.66 All of the larger assemblages also contain evidence for the systematic production of standardized flakes and blades. This includes prismatic blades and blade-like flakes, core-tablets and platform trimming chips generated from the careful maintenance of platforms. Such techniques are more commonly seen within Mesolithic and Early Neolithic industries, and whilst the material here may show a decline in the care taken towards systematic reduction from earlier periods, it does provide important evidence for their continuation after c. 3000 BC.
- B.1.67 The analyses have also drawn attention to differences between the assemblages from the two pits, although some caution should be taken when considering these differences, as the sample sizes are not huge, particularly for the material from pit **1033**. The differences between the two assemblages are not exclusive and both contain elements of the same range of technologies; the differences instead being of emphasis. The assemblage from pit **1014** contains higher proportions of pieces from earlier stages

in the reduction sequence, particularly decortication and core preparation flakes. The flakes from this assemblage also tend to be broader and are more likely to have faceted striking platforms, which may show a greater emphasis placed on the use of techniques such as Levallois-like strategies, whilst that from pit [1033] contains higher proportions of pieces deriving from systematic blade-based reduction.

The Assemblages from Other Features

B.1.68 Four other features at the site, two peri-glacial features and two tree-throw hollows, produced a total of 23 pieces of struck flint, with a further 58 pieces being recovered from unstratified contexts, mostly from topsoil deposits during a fieldwalking survey (Table 12).

Feature	Primary / Decortication Flake	Core preparation / modification flake	Core-tablet rejuvenation flake	Useable flakes	Chips (< 15mm max dimension)	Flake Fragments <15mm	Flake Fragments >15mm	Chunks/ core shatter	Prismatic blade	Non-prismatic blade	Blade-like flakes	Flake Core	Retouched	Context Total Struck
Periglacial stripe [1010]	1	1		4										6
Periglacial strip [1022]				1										1
Tree-throw [1016]					2									2
Tree-throw [5]	1	1	1	3	1	1	1	1		1		1	2	14
Unstratified / Soil horizons	6	5		25			5	3	3	4	2		5	58

Table 12: Composition of the struck flint from other features at the site

B.1.69 The unstratified material was generally in a very chipped and abraded condition consistent with experiencing prolonged movement in an active soil horizon. No diagnostic pieces are present and, although some earlier or later pieces could be present, most could be easily be contemporary with the Later Neolithic activity. What is interesting to note is the relatively low densities of struck flint present in the soil horizons, and there are no indications of any intensive flint working foci at the site as may be revealed by surface spreads. Although struck flint and other materials were being deposited here, it is not at all certain that it was actually being made or used within the areas investigated.

B.1.70 The Neolithic pits are all located close to, although appear to carefully avoid, a series of peri-glacial stripes that run through the site. These are likely to have been visible on the surface as changes in the vegetation and similar features have been shown to have had significance at other Neolithic sites (Field *et al.* 2012). One of the stripes that was investigated and did produced a small quantity of struck flint. Slot **1022** contained a single flake with a faceted striking platform which is most likely to be Later Neolithic in date, whilst slot **1010** produced six small and undiagnostic pieces.

B.1.71 Tree-throw hollow **1016** which was cut by pit **1014** contained only two small chips which could potentially be intrusive. Tree-throw hollow **5** which was cut by pits **1034** and **1037** produced a larger assemblage although this still only amounted to 14 pieces. These pieces are in a good condition and the assemblage is technologically comparable to those from the pits. The assemblage includes a 'spiral' core. It has a 'keeled' platform which curves more-or-less continuously around the core resulting in it becoming globular in shape. These are not common and are poorly documented but do occasionally appear in Later Neolithic assemblages. The two retouched pieces are both serrates that have very similar working edges although they are morphologically very different, with one made on a flake and the other a prismatic blade, which is also heavily burnt. The quantities from this feature are actually slightly higher than for either

of the pits that cut it suggesting that similar processes may have led to its infilling as were used to fill the pits.

Unworked Burnt Stone

B.1.72 Just over 6.6 kg of unworked stone were recovered from the archaeological investigations at Cherry Hinton. Nearly all consists of sandstone which was recovered from the Neolithic pits with smaller quantities present in two tree-throw hollows. Two of the pits also contained small amounts of burnt flint and further quantities were also recovered from soil horizons at the site (Table 13). Whilst all of the burnt flint had clearly been heated to a very high temperature, causing it to become fire crazed and attain a grey-white colour, it is not always certain that every piece of the sandstone had been definitely burnt. However, sufficient pieces have become distorted and cracked, and evidently oxidized or reduced, to be persuaded that the majority, if not all, had indeed been burnt.

Context	Feature	Burnt Flint No.	Burnt Flint Wt:g	Burnt Sandstone No.	Burnt Sandstone Wt:g
+	Unstratified / Soil horizons	11	243		
1011	Pit 1014	4	14	66	3,084
1012	Pit 1014			3	6
7	Pit 8			37	746
1028	Pit 1024			3	451
1031	Pit 1033			18	747
1035	Pit 1034	1	12	8	652
6	Tree-throw 5			3	284
0009	Tree-throw 1010			13	376
	<i>Total</i>	<i>16</i>	<i>318</i>	<i>151</i>	<i>6,346</i>

Table 13: Quantification of Unworked Burnt Stone from Cherry Hinton

B.1.73 The sandstone is variable in its lithological composition, including its clast size distributions, colour and inclusions, with some fragments containing small quantities of mica. Some hard siliceous fragments, comparable to sarsen, are present but the majority are friable, this being possibly a result of burning. The fragments vary in colour from light greyish brown to dark reddish brown, but again the colour is likely to have been affected by burning and several pieces have darker, reduced, interiors. The outer surfaces demonstrate that the pieces derived from rounded cobbles with worn and sometimes pitted skins. The largest extant cobble measures 103mm in maximum dimension and weighs 582g, but the vast majority of pieces are fragmented and larger pieces may have been present. None of this material shows any signs of working, although it is not impossible that some of the pieces could be fragmented querns or grinding equipment that had lost any worked surfaces. Whilst sandstone cobbles are present as glacial erratics in the local surface deposits and alluvial terraces, they form a rare component and these must have been preferentially selected, possibly as sandstone has a much lesser tendency to violently fracture when heated compared to flint.

B.1.74 Whatever their precise histories, there are far higher quantities of sandstone present than could be accounted for by incidental incorporation or the random gathering of local stone for use in hearth construction. The high concentrations recorded in some of the pits indicate that it was being purposefully sought out and gathered, at least most were deliberately burnt and then the pieces disposed of formally.

B.1.75 The quantities of burnt stone recovered indicate that pyrotechnical activities were important in generating the material deposited into the pits but it is not clear what

processes led to its creation. The quantities recorded here and the preferential use of sandstone would argue against it representing the residues from simple domestic hearth use. In other prehistoric contexts, the deliberate heating of stone has been associated with cooking activities, its scale suggesting communal efforts, perhaps associated with feasting or ceremonial practices. Other explanations have also been forwarded, including the material being residues from saunas (Barfield and Hodder 1987) or from a variety of industrial processes, such as leather making or wool processing (e.g. Hedges 1975; Barfield 1991; Jeffery 1991; Dunkin 2001).

Discussion of the Lithic Material and Its Deposition

- B.1.76 The struck flint assemblages from the pits contain elements from the entire knapping sequence which includes high proportions of retouched implements that, although somewhat restricted in range, represent the kinds of tools that might be expected from relatively broad-based settlement activities. The processes that lie behind the generation of the burnt stone are more difficult to determine but, again, the material appears to be debris generated during episodes of occupation and, along with the struck flint, deposited into the pits. However, the assemblages' condition, consistent with limited weathering, some trampling and occasional burning, suggests they had experienced complex histories and had perhaps been middened or otherwise accumulated between manufactured and being discarded into the pits. The composition of the assemblages from the different pits and their fills are idiosyncratic and their precise technological and typological signatures vary, suggesting that either the sources were large and internally variable or that they were selected from separate accumulations.
- B.1.77 Flintwork with Later Neolithic characteristics, including chronologically diagnostic pieces such as transverse arrowheads or distinctive cores, is routinely found during excavations in this part of Cambridgeshire, which has recently seen intensive archaeological investigations. Much of this evidence consists of residual flintwork that probably represents surface discarded waste. At a number of sites, however, similar practices of pit digging and artefact deposition have identified. One of the closest and most comparable is the Babraham Park and Ride site, located in a comparable topographical location around 2 km to the south of this site (Hinman 2001). The material from this site is still in the process of analysis but several pits arranged in clusters and containing large Grooved Ware and lithic assemblages were excavated (Bishop 2000). The quantities of struck flint per pit varied greatly but some produced over 1000 pieces. The raw materials are also comparable to those used at this site and may have been obtained from the same sources. Some of the Babraham Road pits also contained substantial quantities of sandstone cobbles. Technologically the struck flint assemblages are comparable, with a variety of approaches taken towards reduction, including the use of discoidal cores and bifacial working or Levallois-like techniques. These were used to produce a similarly high proportion of retouched implements, which includes transverse arrowheads but with a dominance of simple edge retouched pieces and scraping tools. Both this site and Babraham Road assemblages are also very similar to the assemblages recovered from a series of pits containing Grooved Ware excavated at Linton Village College, located around 10km to the southeast in the Granta valley (Clarke and Gilmour forthcoming). These also contained substantial struck flint assemblages and large quantities of burnt sandstone (Dickson forthcoming). This assemblage did use slightly different raw material although still high quality flint which would have been easily available locally. The technological strategies involved the use of range of techniques, including Levallois-like methods, to make a similar range of tools which again included transverse arrowheads, cutting and scraping tools.

Extensive attempts at refitting also identified a number of conjoins although none were identified between pieces from the different pits. At all of three of these sites, polished axes had also been worked down and re-used as cores.

- B.1.78 As with the Cherry Hinton site, at all of these sites it was concluded that the assemblages reflect the working of flint and manufacture, use and discard of tools during routine settlement type activities. It appears that the resultant debris was accumulated, perhaps in a midden, and subsequently relatively small proportions of the accumulations were selected and dumped into the pits, presumably with some care given the presence within these assemblages of small flakes and knapping debris. In the case of pits with multiple fills, deposition appears to have been episodic although probably occurring over relatively short periods, with differences in the composition of the assemblages from different pits and even with their separate fills suggesting that the selected material may have represented slightly different activities (cf Garrow *et al.* 2005). The striking similarities in the character of the flintwork and burnt sandstone fragments, and the circumstances surrounding its deposition, from all of these sites would suggest the movement of closely related communities moving, perhaps seasonally, between the higher chalklands to the lower lying Fenland margins, using the river valleys of the Cam and Granta as corridors.
- B.1.79 The filling of pits with artefactual debris is a common practice in the Neolithic that has been recognized from across Britain (e.g. Manby 1974; Brown 1991; Garrow 2006; Harding 2006; Lamdin-Whymark 2008). The pits are generally considered to represent the only tangible remains of temporary settlement sites and their contents the material remains generated during occupation (e.g. Garrow *et al.* 2005).
- B.1.80 A survey of pit sites in East Anglia identified numerous examples that included Grooved Ware and in most cases the deposited flintwork appears to reflect broadly similar practices and concerns to those seen at this site (Garrow 2006; see also Fell 1952; Cleal 1985; Longworth *et al.* 1971; Healy *et al.* 1993; Healy in Rogerson 1995; Chapman *et al.* 2005 for other examples of lithic assemblages from Grooved Ware pit site in East Anglia). Previous work had generally regarded these artefact-rich features as either representing rubbish pits or as having a primary use, such as for storage, and then being subsequently re-used for rubbish disposal (e.g. Clark *et al.* 1960). The pits here do appear to have been used as receptacles for the debris generated during occupation and the flintwork can undoubtedly be regarded as 'rubbish', in that it principally consisting of knapping waste, burnt and broken pieces and discarded used tools. However, some aspects of the material and its deposition suggest the pits and their contents may represent more complex concerns than simple attempts at tidying up the area.
- B.1.81 Freshly struck flint is sharp and potentially hazardous if left lying around, but it is hard to envisage what incentive there may be in actually burying rubbish, rather than conducting the flint knapping away from settlement areas. Additionally, only small proportions of the material that would have been generated during the knapping episodes were selected for deposition, raising the question of why the remainder was not similarly buried if the aim was to get rid of the material.
- B.1.82 The reasons for such complex depositional practices are far from clear. Whilst the symbolic potential of 'prestigious' objects such as polished axeheads, arrowheads or finely crafted flint knives are easy to comprehend, even mundane items and the debris from routine activities including flintworking can still hold complex and socially important meanings. This can be demonstrated by the contexts in which the material was produced, used, re-formed and deposited (e.g. Richards and Thomas 1984; Brown

1991; Needham 1993; Hill 1995; Needham and Spence 1997; Brück 1999a; 1999b; Thomas 1999; Chapman 2000; Bradley 2003). Although establishing the precise meanings behind the digging and infilling of the pits is unlikely to succeed, the meanings behind the pits' contents are likely to revolve around the people and events associated with the period of occupation during which the pits' contents were generated. It also seems at least plausible that the contents were only part of the story that was being conveyed. Many choices would have been made in relation to the deposition of materials into a pit. The specific location, when it should happen, what should be included, what activities should occur before, during and after the digging, the acts of deposition and infilling, and who should be included and who excluded. All of these could have contributed to the statements that these activities were intended to convey. As Thomas suggests, the materials employed as pit deposits and the details of their arrangement and interment may have acted as a material language, albeit one that was highly localised in its meaning (1999, 69).

- B.1.83 In the context of mobile communities engaged in periodically moving through the landscape, it is certainly plausible that pit digging and their infilling with cultural material was a means of creating identities. These created identities would have been both of particular places and of the people who stayed there; in a way, to mark the place and convey stories about the people and the things that happened whilst they were there.
- B.1.84 Given the great variability seen in the contents of pits from throughout the Neolithic and across Britain, it would seem likely that the precise purposes and events that led to the creation of the pits and their contents varied considerably. In some cases the material selected for infilling may have been generated from specific ceremonies or feasts designed to commemorate the events that occurred there, and these may have extended to the filling of the pits, the contents of which may be highly selective and carefully arranged (e.g. Pollard 2001; Garrow 2006). In other cases, the contents may simply represent the residues of routine everyday living, fragmented and mixed together, and can be seen as generalised symbols of domestic life (Thomas 2010; Rowley Conwy and Owen 2011). This latter scenario is perhaps most reminiscent of the kinds of material found at the site, as well as what was evident at Linton Village College and Babraham Road.

Context	Feature	Sample	Investigation phase	Primary / Decortication Flake	Primary / Decortication Blade	Core preparation / modification flake	Core preparation / modification blade	Core-tablet rejuvenation flake	Transverse core rejuvenation flake	Longitudinal core rejuvenation flakes	Useable flakes	Chips (< 15mm max dimension)	Flake Fragments <15mm	Flake Fragments >15mm	Flake Fragments shatter	Chunks/ core	Prismatic blade	Non-prismatic blade	Blade-like flakes	Flake Core	Flake struck from polished implement	Arrowhead	Core-tool	Edge Trimmed	Scraper	Serrate
1	Topsoil		Eval			2					2				1			1						1		
3.1	Topsoil		TP														1									
6	TT0005		Eval	1		1					1															
6	TT0005		Exc					1			2			1	1			1		1						1
6	TT0005	<115>	Exc									1	1													1
6.1	Topsoil		TP																1							
7	P8	<114>	Exc							1				1												
7	P8		Eval	4		2		1	1		22	5	3	8		2	6							3		1
7	P8		Exc		1	4			1	1	11	3		1		1	3		3					1	2	1
7	P8	<114>	Exc	1								14		5		2										
9	Hol10		Eval	1		1					4															
13.1	Topsoil		TP	1																						
15.2	Subsoil		TP														1									
24.2	Subsoil		TP								2						1									
33.1	Topsoil		TP	1												1										
44.1	Topsoil		TP								1															
46.1	Topsoil		TP								1															
47.2	Subsoil		TP											1												
61.1	Topsoil		TP																	1						
1000	P1001	<100>	Exc										1	2												
1004	P1006	<104>	Exc								1		2	1												

Context	Feature	Sample	Investigation phase	Primary / Decoritication Flake	Primary / Decoritication Blade	Core preparation / modification flake	Core preparation / modification blade	Core-tablet rejuvenation flake	Transverse core rejuvenation flake	Longitudinal core rejuvenation flakes	Useable flakes	Chips (< 15mm max dimension)	Flake Fragments <15mm	Flake Fragments >15mm	Flake Fragments >15mm	Chunks/ core shatter	Prismatic blade	Non-prismatic blade	Blade-like flakes	Flake Core	Flake struck from polished implement	Arrowhead	Core-tool	Edge Trimmed	Scraper	Serrate
1011	P1014		Exc	15	4	23	5	1	4	1	109	50	36	40	4	6	27			2	2	1	1	7	6	2
1011	P1014	<103>	Exc	2	2	5	1		1	1	15	440	160	52		13	6							1		
1012	P1014		Exc	1		1					5			2		2	2			1				1		
1012	P1014	<104>	Exc			1					5	67	62	20												
1013	P1014	<105>	Exc								1	12	10	3		1										
1015	TT1016	<106>	Exc									2														
1018	P1017	<107>	Exc							1								1						1		
1018	P1017	<107>	Exc			3			1		8	57	48	7		1	1							1		
1018	P1017		Exc	2		2					6	3	3			1	2					1	2	1	1	
1019	Sub-soil		Exc	2		3					14			4			3								1	
1021	Hol1022		Exc								1															
1025	P1024	<108>	Exc			1					3	12	8				2					1		1		
1026	P1024	<109>	Exc			1					1															
1026	P1024		Exc	1	1	1					3			1		1								2		
1026	P1024	<109>	Exc								2	2	4	4		1	3									
1027	P1024	<110>	Exc									1	2	1												
1028	P1024	<111>	Exc	1		1																				
1028	P1024		Exc			5					7			2	1									2		
1028	P1024	<111>	Exc	2		3					5	29	17	13												
1029	P1024	<112>	Exc									1	2											1		
1030	P1024	<113>	Exc								3															
1030	P1024		Exc	1		2					2			1												
1030	P1024	<113>	Exc									9	22	15			1									
1031	P1033	<116>	Exc									4	1	1			1									

Context	Feature	Sample	Investigation phase	Primary / Decortication Flake	Primary / Decortication Blade	Core preparation / modification flake	Core preparation / modification blade	Core-tablet rejuvenation flake	Transverse core rejuvenation flake	Longitudinal core rejuvenation flakes	Useable flakes	Chips (< 15mm max dimension)	Flake Fragments <15mm	Flake Fragments >15mm	Chunks/ core shatter	Prismatic blade	Non-prismatic blade	Blade-like flakes	Flake Core	Flake struck from polished implement	Arrowhead	Core-tool	Edge Trimmed	Scraper	Serrate
1031	P1033		Exc	3	1	6	1	2	2		24	7	4	10	5	10	2	2			2	4			
1031	P1033	<116>	Exc						1		13	502	306	42	3	3	5					2			
1032	P1033	<117>	Exc								1						1								
1032	P1033	<117>	Exc			1					7	65	17	10	2	4	5					1			
1032	P1033		Exc	1	1		1		1		3					2	1		1						1
1035	P1034		Exc			1															1			1	
1035	P1034	<118>	Exc									6	2												
1036	P1037		Exc								2						1	1							
1036	P1037	<119>	Exc								2	1	2	1			1								
A4	Topsoil		FW																					1	
D13	Topsoil		FW	1																					
D4	Topsoil		FW								1														
E10	Topsoil		FW	1																					
F11	Topsoil		FW								1														
F5	Topsoil		FW								1													1	
F9	Topsoil		FW																			1			
H13	Topsoil		FW								1				1										
H9	Topsoil		FW								1														

Table 14: Catalogue of struck flints

Context	Feature	Ref	Burnt Flint No.	Burnt Flint Wt:g	Burnt Sandstone No.	Burnt Sandstone Wt:g	Comments
6	TT0005				3	284	Burnt sandstone fragment
7	P8	Exc			22	311	Burnt sandstone fragment
7	P8	Eval			15	435	Burnt sandstone fragment
9	TT1010				13	376	Burnt sandstone fragment
9.1	Ploughsoil		2	23			Heavily burnt unworked flint
34.1	Ploughsoil		1	26			Heavily burnt unworked flint
1011	P1014		4	14			Heavily burnt unworked flint
1011	P1014				66	3084	Burnt sandstone fragment
1012	P1014				3	6	Burnt sandstone fragment
1019	SS		2	25			Heavily burnt unworked flint
1028	P1024				3	451	Burnt sandstone fragment
1031	P1033				18	747	Burnt sandstone fragment
1035	P1034		1	12			Heavily burnt unworked flint
1035	P1034				8	652	Burnt sandstone fragment
B6	FW		1	102			Heavily burnt unworked flint
C7	FW		1	17			Heavily burnt unworked flint
E1	FW		1	8			Heavily burnt unworked flint
E5	FW		1	44			Heavily burnt unworked flint
E9	FW		1	30			Heavily burnt unworked flint
H11	FW		1	17			Heavily burnt unworked flint

Table 15: Catalogue of the burnt lithics

Context	Feature	Colour	Cortex	Condition	Recortication	Length (mm)	Breadth (mm)	Width (mm)	Wt:g	Type	Clark et al. 1960 type	Morphology	No Flakes Removed	No. Platforms	Platform Type	Platform Treatment	Platform Relationship	% cortex remaining	Further incipient Hertzian cones	Description	Reason abandoned
6	TT0005	Unknown	None	Good	White	48	40	34	69	Flake	C	Globular	10+	3+	Flake scar	Edge trimmed	Contiguous	0	None apparent	Extensively reduced multiplatformed but has a keeled platform that 'spirals' around the core.	Unknown
7	P0008	Unknown	Thin unweathered	Good	White	45	45	26	46	Flake	D	Domed	10+	2	Flake scar	Edge trimmed	Keeled	40	None apparent	Split cobble or large flake with many small flakes removed centripetally across ventral face. Could be a 'front' type or unstruck Levallois-like core	Severe step / hinge fracture
7	P0008	Unknown	None	Good	White	58	58	22	72	Flake	D	Lenticular	10+	2	Flake scar	Edge trimmed	Right angled	0	None apparent	Tablet-shaped spall or large flake with flaked sides and one principal platform on either face. Both have main flakes removed Levallois-like	Severe step / hinge fracture
7	P0008	Unknown	Thin unweathered	Good	White	76	57	39	169	Flake	D	Wedge	10+	2	Flake scar	None	Keeled	60	None apparent	Rounded nodular with flakes removed in sequence form two keeled platforms at one end	Unknown
1011	P1014	Unknown	Thin unweathered	Good	White	55	53	40	99	Flake	D	Domed	10+	2	Flake scar	Edge trimmed	Keeled	10	None apparent	Domed cobble with flakes removed across the 'ventral' and around all of the sides. One deep flake removed from 'ventral', comparable to Levallois-like method.	Severe hinge fractures

1011	P1014	Unknown	Thin unweathered	Good	White	48	46	28	53	Flake	A1	Domed	10+	1	Cortical	None	N/A	60	None apparent	Split cobble or large flake with many small flakes removed centripetally across ventral face. Possible unstruck Levallois-like core	Unknown
1012	P1014	Unknown	None	Good	White	61	50	25	74	Flake	E	Lenticular	10+	2	Flake scar	Edge trimmed	Keeled	0	None apparent	Extensively worked with two opposed keeled platforms	Unknown
1031	P1033	Unknown	Thin unweathered	Good	White	65	47	28	81	Flake	A1	Domed	10+	1	Flake scar	None	N/A	30	None apparent	Split cobble or large flake with many small flakes removed centripetally across ventral face. Possible core tool or unstruck Levallois-like core. Refits to other core from fill [1031]	Unknown
1031	P1033	Unknown	Thermal scar	Good	White	62	40	29	54	Blade / narrow flake	E	Front type	10+	3	Flake scar	Edge trimmed	Contiguous / Keeled	30	None apparent	Flake and a few non-prismatic blades removed from the front of an angular chunk with further flakes removed from the top and one side. Back remains unworked. Refits to other core from fill [1031]	Unknown
1032	P1033	Unknown	Thin unweathered	Good	White	59	52	17	54	Flake	D	Domed	10+	2	Flake scar	Edge trimmed	Keeled	10	None apparent	Many blade scars on rounded 'front' on a cobble and back then many small flakes removed centripetally from around back but with no main flake removed. Possibly a 'normal' blade core re-used as a Levallois-like core?	Unknown

Table 16: Details of flint cores

Context	Feature	Ref	Colour	Cortex	Condition	Flake type	Implement Type	Sub-type	Length	Breadth	Width	Description	Wear
1	TS		Unknown	Thin unweathered	Chipped	Flake	Scraper	End	31	27	12	Rather irregular medium, moderately steep scalar retouch around convex distal	Moderate
6	TT005		Unknown	Thin unweathered	Good	Cortical flake	Serrate	Unilateral	46	33	15	Worn serrations c. 10 per cm along right margin.	Moderate to heavy
6	TT005	<115>	Unknown	None	Burnt	Prismatic blade	Serrate	Unilateral	>36	16	4	Fine serrations c. 10 per cm along left margin. Distal end missing.	Moderate
7	P0008		Unknown	None	Good	Flake	Edge retouched	Sharp	26	15	5	Inverse, fine semi-invasive shallow retouch on right margin and around distal	Moderate
7	P0008		Unknown	Thin unweathered	Slightly abraded	Flake	Edge retouched	Sharp	>28	32	7	Very fine retouch / use-wear along right margin. Distal missing	Light to moderate
7	P0008		Unknown	None	Slightly abraded	Flake	Edge retouched	Sharp	56	40	7	Fine bifacial retouch along part of right margin at proximal end and fine inverse and normal retouch on sinuous left margin	Moderate
7	P0008		Unknown	Thin unweathered	Good	Non-prismatic blade	Edge retouched	Sharp	93	38	8	Fen to medium bifacial sporadic shallow retouch / battering along both margins	Moderate
7	P0008		Unknown	Thin unweathered	Slightly abraded	Flake	Scraper	Short end	>43	44	10	Medium, slightly denticulated steep scalar retouch around slightly convex distal and extending along part of right margin. Proximal end missing	Moderate
7	P0008		Unknown	Thin unweathered	Slightly abraded	Fragment	Scraper	Nosed	>20	21	4	Fine steep scalar retouch forming a nose at distal end. Proximal end missing	Moderate to heavy
7	P0008		Unknown	Thin unweathered	Good	Narrow flake	Serrate	Unilateral	47	27	4	Fine serrations c. 10 per cm along right margin.	Light to moderate
7	P0008		Unknown	Thin unweathered	Slightly abraded	Narrow flake	Serrate	Unilateral	56	30	7	Occasional serrations along straight left margin. Possible very fine retouch along right margin	Light to moderate
1011	P1014		Unknown	None	Good	Flake	Arrowhead	Oblique	>45	37	5	Bifacially retouched notch cut into distal end forming two barbs. Left hand barb formed by semi-invasive bifacial retouch which extends along left margin. Right barb and margin left unretouched and forms 'cutting edge'. Proximal tip missing 't' = >48mm (est. = c. 55mm), 'r' = 37mm. Made on large narrow flake	None / limited

Context	Feature	Ref	Colour	Cortex	Condition	Flake type	Implement Type	Sub-type	Length	Breadth	Width	Description	Wear
1011	P1014		Unknown	Thin unweathered	Good	Narrow flake	Edge retouched	Blunt	54	26	7	Medium, slightly sinuous steep scalar retouch along part of left margin. Accentuated cortex 'backing'. Slight use-wear to right margin?	Light
1011	P1014	<103>	Unknown	None	Good	Fragment	Edge retouched	Semi-invasive	>13	>17	4	Tip, possibly proximal end, of a flake/blade with invasive bifacial retouch along ?left margin. Minimal wear. Possible PTD fragment	None / limited
1011	P1014		Unknown	Thin unweathered	Slightly abraded	Blade-like flake	Edge retouched	Sharp	51	31	7	Rather irregular fine shallow scalar retouch across slightly convex distal end	Moderate
1011	P1014		Unknown	Thin unweathered	Good	Cortical flake	Edge retouched	Sharp	>82	46	11	Fine bifacial retouch / use damage along right margin.	Moderate
1011	P1014		Unknown	None	Slightly abraded	Flake	Edge retouched	Sharp	55	63	8	Fine retouch along part of right margin	Moderate
1011	P1014		Unknown	Thin unweathered	Slightly abraded	Flake	Edge retouched	Sharp	90	62	9	Fine sporadic retouch around right margin and extending around distal.	Moderate to heavy
1011	P1014		Unknown	None	Slightly abraded	Non-prismatic blade	Edge retouched	Sharp	79	29	10	Very fine retouch along part of right margin near distal end. Steep unmodified left margin	Moderate
1011	P1014		Unknown	None	Slightly abraded	Prismatic blade	Edge retouched	Sharp	43	17	5	Fine bifacial retouch / use damage along left margin.	Moderate
1011	P1014		Unknown	Ancient thermal scar	Good	Core-tool	Scraper	Short end	46	44	14	Thermal spall with medium, slightly convex moderately steep scalar 'retouch' along part of one side.	Moderate
1011	P1014		Unknown	Thin unweathered	Slightly abraded	Cortical flake	Scraper	End	>26	39	6	Medium, moderately steep scalar retouch around a finely arced distal end. Rest of flake missing	Light to moderate
1011	P1014		Unknown	Thin unweathered	Good	Cortical flake	Scraper	End	>51	40	12	Medium to heavily moderately steep scalar retouch around convex distal end and extending slightly up both lateral margins	Light to moderate
1011	P1014		Unknown	Thin unweathered	Slightly abraded	Flake	Scraper	Short end	40	42	9	Medium to heavily moderately steep scalar retouch around convex distal end and extending slightly up left margin	Moderate
1011	P1014		Unknown	None	Good	Narrow flake	Scraper	Long-end	60	33	8	Medium to heavy moderately steep scalar retouch around finely arced distal end	Moderate

Context	Feature	Ref	Colour	Cortex	Condition	Flake type	Implement Type	Sub-type	Length	Breadth	Width	Description	Wear
1011	P1014		Unknown	Thin unweathered	Burnt	Narrow flake	Scraper	Long-end	54	33	14	Medium, moderately steep scalar retouch around a finely arced distal end.	Light to moderate
1011	P1014		Unknown	Thin unweathered	Slightly abraded	Prismatic blade	Scraper	Long-end	51	20	7	Fine steep scalar retouch around slightly convex distal	Light
1011	P1014		Unknown	Ancient thermal scar	Good	Narrow flake	Serrate	Unilateral	65	27	10	Retouch and serrations c.10 per cm along straight right margin. Partial cortex 'backing along left margin.	Light to moderate
1011	P1014		Unknown	None	Slightly abraded	Prismatic blade	Serrate	Unilateral	>38	19	6	Fine inverse serrations c. 10 per cm along left margin. Distal and proximal ends missing	Light to moderate
1012	P1014		Translucent black	None	Slightly abraded	Fragment	Edge retouched	Blunt	32	20	7	Fine to medium bifacial retouch / battering along left margin	Moderate to heavy
1018	P1017		Unknown	Ancient thermal scar	Good	Core-tool	Bifacial	Chopper	>38	60	20	Thermal spall with bifacial slightly convex moderately steep medium scalar 'retouch' along part of one side. cf chopping tool or possibly scraper	Moderate
1018	P1017		Unknown	None	Burnt	Fragment	Edge retouched	Blunt	>28	30	8	Medium, steep scalar retouch along extant part of ?right margin. Proximal and distal ends missing	Light to moderate
1018	P1017	<107>	Unknown	None	Burnt	Fragment	Edge retouched	Semi-invasive	>360	>33	6	Burnt mesial fragment with semi-invasive bifacial retouch along its extant left margin. Possible fragment of an arrowhead	None / limited
1018	P1017	<107>	Unknown	None	Slightly abraded	Broken blade	Edge retouched	Sharp	>22	15	3	Fine, slightly invasive shallow inverse retouch along straight right margin.	Moderate
1018	P1017		Unknown	None	Slightly abraded	Transverse core rejuvenation flake	Edge retouched	Sharp	>36	35	15	Fine bifacial retouch / use-wear along left margin and similar unifacial retouch along right margin. Proximal end missing	Moderate
1018	P1017		Unknown	None	Burnt	Fragment	Scraper	End	>29	30	10	Medium, steep scalar retouch around well-arc'd distal. Proximal end missing.	Light to moderate
1018	P1017		Unknown	Thin unweathered	Slightly abraded	Prismatic blade	Serrate	Bilateral	>52	27	6	Fine serrations c. 15 per cm along both straight lateral margins	Moderate
1019	SS		Translucent black	Thin unweathered	Chipped	Flake	Scraper	End	55	45	17	Medium to heavy steep scalar retouch around convex distal	Moderate

Context	Feature	Ref	Colour	Cortex	Condition	Flake type	Implement Type	Sub-type	Length	Breadth	Width	Description	Wear
1025	P1024	<108>	Unknown	None	Good	Flake	Arrowhead	chisel	41	39	6	Flake with bifacial semi-invasive retouch along its left margin and truncating striking platform. Either unfinished or uses its hinged distal termination as one of its 'blunted' edges. If so, t = 47, r = 38	None / limited
1025	P1024	<108>	Unknown	None	Good	Flake	Edge retouched	Semi-invasive	51	30	6	Flake with inverse semi-invasive retouch truncating striking platform. Appears to have laterally snapped. Possible unfinished PTD	None / limited
1026	P1024		Unknown	Thin unweathered	Slightly abraded	Core modification flake	Edge retouched	Sharp	77	52	17	Very fine inverse and normal retouch / use-wear along left margin.	Moderate to heavy
1026	P1024		Unknown	Ancient thermal scar	Good	Narrow flake	Edge retouched	Sharp	56	30	11	Very fine retouch / use-wear along left margin	Moderate
1028	P1024		Unknown	None	Slightly abraded	Core modification flake	Edge retouched	Sharp	>32	48	12	Very fine bifacial retouch / use-wear along right margin. proximal missing	Moderate
1028	P1024		Unknown	Thin unweathered	Good	Prismatic blade	Edge retouched	Sharp	85	25	10	Fine retouch / heavy use-wear along right margin towards distal end.	Heavy
1029	P1024	<112>	Unknown	None	Slightly abraded	Fragment	Edge retouched	Semi-invasive	>13	>10	3	Acute tip of a flake with semi-invasive bifacial retouch along ?right margin. Possible PTD AH??	None / limited
1031	P1033		Unknown	None	Good	Flake	Arrowhead	Chisel / Petit-tranquet	30	38	3	Straight abrupt retouch obliquely truncating distal end and extending up right margin, joining slightly concave abrupt retouch that truncates proximal end. Left margin forms unretouched 'cutting edge'. 't' = 37mm, 'r' = 31mm. Possibly made on a 'Levallois' struck flake	None / limited
1031	P1033		Unknown	None	Slightly abraded	Narrow flake	Arrowhead	Oblique	>52	32	3	Inverse notch cut into left margin at distal end forming a tail. 'Normal' abrupt retouch along remainder of left margin. Right margin forms unretouched 'cutting edge'. Proximal tip missing. Smaller residual barb appear to have snapped but scar then re-retouched. 't' = >52mm (est = c. 60mm) , 'r'= 31mm. Made on a large blade.	None / limited

Context	Feature	Ref	Colour	Cortex	Condition	Flake type	Implement Type	Sub-type	Length	Breadth	Width	Description	Wear
1031	P1033		Unknown	Thin unweathered	Good	Cortical flake	Edge retouched	Blunt	74	54	10	Very fine steep retouch along slightly convex distal	Moderate to heavy
1031	P1033	<116>	Unknown	None	Good	Fragment	Edge retouched	denticulate	>9	6	3	Tip of narrow flake / blade with two small notches forming denticulations on right margin.	None / limited
1031	P1033	<116>	Unknown	None	Good	Fragment	Edge retouched	Semi-invasive	>9	>10	4	Acute tip of a flake with semi-invasive bifacial retouch along ?right margin. Possible PTD AH??	None / limited
1031	P1033		Unknown	Thin unweathered	Good	Cortical flake	Edge retouched	Sharp	50	34	11	Very fine inverse retouch / use-wear along left margin. Cortex 'backing' on right margin	Moderate to heavy
1031	P1033		Unknown	None	Slightly abraded	Narrow flake	Edge retouched	Sharp	>40	25	3	Very fine bifacial retouch / use-wear along right margin. proximal missing	Moderate to heavy
1031	P1033		Unknown	None	Good	Narrow flake	Edge retouched	Sharp	49	27	8	Very fine retouch / use-wear along left margin	Moderate
1032	P1033	<117>	Unknown	None	Good	Fragment	Edge retouched	Sharp	>44	26	2	Thin flake fragment with fine bifacial retouch / use-wear along right margin towards distal end	Moderate
1032	P1033		Unknown	None	Slightly abraded	Non-prismatic blade	Serrate	Unilateral	56	26	5	Fine retouch and serrations c. 12 per cm along straight right margin.	Moderate
1035	P1034		Unknown	Thin unweathered	Good	Core-tool	Bifacial	Hammers tone / pounder	45	61	26	Flaked pebble forming a wedge-shaped implement with extensive battering around ridge.	Heavy
1035	P1034		Unknown	None	Burnt	Flake	Scraper	Short end	56	45	14	Medium, steep scalar retouch around well-arc'd distal	Moderate
F9	Topsoil		Translucent black	Thin unweathered	Chipped	Fragment	Scraper	Side	>28	32	8	Medium, steep scalar retouch along left margin.	Moderate
A4	Topsoil		Unknown	None	Slightly abraded	Flake	Scraper	End and side	>58	40	9	Medium to heavy steep scalar retouch around convex distal and extending partly along right margin.	Moderate
F5	Topsoil		Unknown	Thin unweathered	Chipped	Flake	Scraper	End	45	37	10	Medium, steep scalar retouch around convex distal	Moderate

Table 17: Details of retouched implements

B.2 Prehistoric and Roman Pottery

By Sarah Percival

Introduction

- B.2.1 A total of 121 sherds weighing 339g were collected from seven excavated features and from subsoil and topsoil. The pottery is fragmentary and no complete vessels were recovered. The sherds are mostly small and poorly preserved and the average sherd weight is 3g.
- B.2.2 The most significant of the pottery found during the excavations are 96 sherds of Grooved Ware from five pits. A single sherd of Earlier Neolithic pottery and a possible sherd of Beaker came from the fill of tree throw **10** and smaller quantities of Iron Age and Roman pottery were also recovered from topsoil, subsoil and test pit fills. The remainder of the assemblage is prehistoric but is otherwise not closely datable. A total of 31 sherds weighing 34g were recovered from samples, targeted to recover maximum material from the Grooved Ware pits. Pottery from samples forms 13% of the Grooved Ware assemblage by weight.

Methodology

- B.2.3 The assemblage was analysed in accordance with the Guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 2010). The total assemblage was studied and a full catalogue was prepared. The sherds were examined using a binocular microscope (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types. Fabric codes were prefixed by a letter code representing the main inclusion present (F representing flint, G grog and Q quartz). Vessel form was recorded; R representing rim sherds, B base sherds, D decorated sherds and U undecorated body sherds. The sherds were counted and weighed to the nearest whole gram. Decoration and abrasion were also noted. The pottery and archive are curated by OAE.

Earlier Neolithic

- B.2.4 A small rim sherd in fine sandy fabric from treethrow **10** may be Mildenhall Ware. The rim is flattened to a 'T' shaped profile and has fine incised diagonal lines decorating the rim top. T shaped rims with incised decoration are typical of Mildenhall Ware and this rim compares well with examples from Spong Hill, Norfolk (Healy 1988, fig.71, P140) although the sandy fabric is not typical of Mildenhall Ware which is usually flint tempered.

Later Neolithic

- B.2.5 A moderate assemblage of 96 sherds of Grooved Ware weighing 258g was collected from pits **8**, **1014**, **1017**, **1033** and **1037**. Pit **8** contained the largest single assemblage comprising 40 sherds perhaps all from the same pot, a tub-shaped vessel with in-turned, pointed rim decorated with short vertical slashes to the exterior. The rim sherd is comparable to examples from Durrington Walls (Longworth 1971, fig.49, P231). A total of 54% of the sherds by weight were recovered from samples.
- B.2.6 Pit **1014** contained 38 sherds including sherds from a minimum of four vessels and including one rim also pointed but undecorated. Thirty sherds are decorated with shallow incised channels forming chevrons and horizontal bands similar to decoration seen on Grooved Ware from Eynesbury and Haddenham (Ellis 2004, fig.10, 1: Evans and Hodder, 2006, fig.5.32, 10). Eight sherds from a flat base are present though no

base angle survives. A total of 2% by weight of the sherds from pit **1014** came from samples.

- B.2.7 Pits **1017** and **1033** each contained four sherds. The sherds from pit **1017** are decorated with incised channels, whilst sherds from a least two vessels came from pit **1033** including a direct flat rim decorated with deep fingertip decoration to the exterior and on the interior bevel and body sherds decorated with possible pinched cordons similar to examples found at Durrington Walls (Longworth 1971, fig.49, P228).
- B.2.8 Two further sherds decorated with incised channels came from pit **1037** of which one small scrap weighing 1g came from a sample.
- B.2.9 The Grooved Ware is made of mainly shell-tempered fabrics with a smaller quantity tempered with grog (table 18). Shell inclusions are consistent with Grooved Ware found at sites in north western Cambridgeshire such as Etton, near Maxey (Kinnes 1998, 161) Site 4, Over (Garrow 2006, 102) and Eynesbury, St Neots (Ellis 2004, 30).

Discussion

- B.2.10 Locally the Grooved Ware from the Peterhouse site is comparable to that found at Linton Village College with several elements directly matching between the two assemblages in particular the use of simple, pointed rims and rims with horizontal internal moulding, which is characteristic of the Durrington Walls sub-style (Longworth 1971, fig 20 13). However the Linton College assemblage lacks shell-temper. Other comparable sites include Etton, Over, Haddenham and Eynesbury, Cambridgeshire (Pryor 1998, Garrow 2006; Mephram 2004, 32) which are shell-tempered, and display a mix of Durrington Walls and the Clacton sub-styles (Percival 2004; Garrow 2006, 115).
- B.2.11 The Grooved Ware is most similar in form and decoration to the Durrington Walls substyle (Longworth 1971). A radiocarbon date obtained from hazelnut shell from pit **8** suggests that it was filled around 2777 to 2580 cal BC (70.2%). This date falls well within the date ranges expected for Grooved Ware of c.3000 to 2000 BC (Garwood 1999, 152) and compares well with Grooved Ware also of the Durrington Walls substyle found at Linton Village college which dates to 2630 - 2460 cal BC (SUERC-14247, Clarke and Gilmour forthcoming).

Late Neolithic Early Bronze Age

- B.2.12 A single sherd of possible Beaker in sandy fabric with sparse shell inclusions was found in the fill of treethrow **10**. The sherd is decorated with sharply incised line forming a triple band.

Iron Age

- B.2.13 A rim in flint-tempered fabric from a small Early Iron Age cup plus a further flint-tempered body sherd came from test pit 103 (Fairbain 2015). A further body sherd in a similar fabric was found in subsoil 102. These sherds date to around 800-350BC.
- B.2.14 Single body sherds in sandy fabrics from subsoil 102 and test pit 103 and a shell-tempered body sherd from topsoil 101 are probably Middle Iron Age dating to 350-100BC.

Late Iron Age and Roman

- B.2.15 A sherd in proto-greyware dating to the Late Iron Age (100/50BC to AD 50/100) came from subsoil 1019. Also recovered from this deposit were a fine wheelmade shell-tempered body sherd and a sandy oxidised rim sherd from a wide-mouth jar. Both are

Roman but are otherwise not closely datable. Subsoil 102 also produced two Roman body sherds one in unsourced sandy greyware and the other in sandy oxidised ware.

Spotdate	Fabric	Description	Quantity	Weight (g)
Earlier Neolithic	Q1	Fine silty clay with no visible inclusions	1	2
Later Neolithic	GS	Moderate pale sub-angular grog >3mm; moderate shell/ plate-like voids in fine clay matrix	6	26
	QG	Moderate fine quartz sand, moderate pale sub-angular grog	1	1
	S1	Common white shell equal sizes c.2mm	49	178
	SQ	Common white shell c.2mm in sandy clay matrix	40	53
Later Neolithic early Bronze Age	QS	Moderate quartz sand with moderate fine to medium shell	1	8
Earlier Iron Age	F1	Common fine angular flint >2mm in fine clay matrix	5	11
	F2	Common medium angular flint >4mm in fine clay matrix	2	4
Iron Age	Q1	Common rounded quartz sand clear and opaque in fine clay matrix	2	6
	STW	Common shell plates and voids c.2-3mm in fine clay matrix	1	7
Late Iron Age	Q1	Common quartz sand	2	6
Late Iron Age/ early Roman	FineSTW	Moderate fine shell plates .2mm in pale silty clay matrix	1	14
	SOW	Sandy Oxidised Ware(handmade)	1	4
Roman	SGW	Sandy Greyware	1	3
	SOW	Sandy Oxidised Ware (wheelmade)	1	3
Not closely datable	F1	Common fine angular flint >2mm in fine clay matrix	1	2
	Q1	Common rounded quartz sand clear and opaque in fine clay matrix	1	1
	QF	Common rounded quartz sand clear and opaque in fine clay matrix	1	2
	QSG	Common rounded quartz sand clear and opaque in fine clay matrix	2	4
	S1	Common fine shell plates and voids c.2-3mm in fine clay matrix	1	1
	S2	Common coarse shell plates and voids c. 5mm in fine clay matrix	1	3
Total			121	339

Table 18: Pottery fabric descriptions.

APPENDIX C. ENVIRONMENTAL REPORTS

C.1 Environmental samples

By Rachel Fosberry

Introduction

- C.1.1 Twenty-one bulk samples were taken from features within the excavated areas at ARM Peterhouse Technology Park, Cambridge. In total, 1884 litres of soil was processed, primarily for artefact retrieval.
- C.1.2 Features sampled were predominantly pits that are thought to be late Neolithic in date. Samples taken during the evaluation of this site yielded occasional charred wheat and barley grains and hazelnut fragments. The sampling strategy of this site evolved during the excavation through agreement with consultant Rob Bourn and Andy Thomas (Cambridgeshire County Council Historic Environment Team) to 100% excavate the larger pits with retention of deposits in sample buckets.

Methodology

- C.1.3 An initial assessment was based on the processing of 25% of the soil from each sample followed by processing of the remaining soil at a later date. The samples were 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 0.25mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 1mm 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 an abbreviated list of the recorded remains are presented in Table 19. 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.1.4 For the purpose of this initial assessment, items such as seeds and artefacts have been scanned and recorded qualitatively according to the following categories

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

Items that cannot be easily quantified such as charcoal has been scored for abundance

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

f= fragment

Results

C.1.5 Preservation of plant remains is by carbonisation and is generally poor. Numerous modern rootlets are present within all of the samples and occasional modern seeds were also noted. Charcoal (as evidence of the burning of wood) is sparse with no obvious hearth deposits recovered. Charred grains (usually as single specimens) are present in fourteen of the samples. Both wheat (*Triticum* sp.) and barley (*Hordeum vulgare*) grains are present but preservation is poor and it is possible that these remains are intrusive given the high level of rootlet contamination. Charred hazelnut (*Corylus avellana*) shell fragments are present in twelve of the pit samples. None of the fragments would constitute more than four whole hazelnuts. The cereal grains were recovered from the flot but the hazelnut shells were mostly retrieved from the sample residues.

Context No.	Cut No.	Sample No.	Feature Type	% context sampled	Volume processed (L)	Flot Volume (ml)	Cereals	Charred hazelnut shell	Charcoal <2mm	Charcoal 2mm-10mm	Charcoal > 10mm
7	8	114	Pit	50	113	25	#	0	+	0	0
1000	1001	100	Pit	100	86	50	#	0	+	0	0
1004	1006	101	Pit	100	43	15	#	0	0	0	0
1005	1006	102	Pit	100	45	20	0	###	0	0	+
1011	1014	103	Pit	100	274	180	0	###	+	+	+
1012	1014	104	Pit	100	119	20	#f	#f	0	0	0
1013	1014	105	Pit	100	58	15	#	#f	0	0	0
1018	1017	107	Pit	100	258	65	###	###	+	0	0
1025	1024	108	Pit	100	111	30	#	#f	0	+	0
1026	1024	109	Pit	100	33	30	0	###	+	0	0
1027	1024	110	Pit	100	25	1	0	#f	+	0	0
1028	1024	111	Pit	100	62	15	#	###	+	+	0
1029	1024	112	Pit	100	18	5	0	#f	+	+	0
1030	1024	113	Pit	100	54	2	#	###	+	0	0
1031	1033	116	Pit	100	104	15	#	####	+	++	+
1032	1033	117	Pit	100	123	25	#	#f	+	+	+
1035	1034	118	Pit	100	99	40	#	0	+	+	0
1036	1037	119	Pit	100	182	50	###	0	0	0	0
4	3	120	Tree-throw	10	8	3	0	0	0	0	+
6	5	115	Tree-throw	<20	36	15	0	0	0	0	0
1015	1016	106	Tree-throw	25	33	5	#	#f	0	0	0

Table 19: Environmental samples from CAMPET15

Discussion

- C.1.6 The samples processed from the excavation of this site have produced identical results to those from the evaluation with charred grains of wheat and barley and occasional hazelnut shell fragments being recovered from most of the pit fills and one of the three tree-throws.
- C.1.7 Wheat (either einkorn (*T. monococcum*) or emmer (*T. dicoccum*) and barley were the first cereals to be cultivated in Britain and hazelnuts would have been an important wild food resource in the Neolithic period. Their presence in such low numbers in so many of the deposits is unlikely to represent deliberate deposition and it is possible that they are modern contaminants that have been introduced into the deposits through bioturbation. This interpretation would be supported by a radiocarbon determination from a wheat grain from sample 107 (fill 1018 of pit **1017**), which produced a date of AD1652- present (SUERC71884, 184±29BP).
- C.1.8 Hazelnuts would have been an important wild food resource in the Neolithic period and their burnt shells are frequently recovered from Neolithic contexts. The shells are the product of consumption that, if burnt, survives well in archaeological deposits which partly explains their frequent recovery (Jones 2000, 80).

C.2 Faunal Remains

By Vida Rajkovača

Introduction

C.2.1 Of the assemblage's 696 assessable specimens, 182 (26.1%) were identified to species (Table 20). A proportion of the material was recovered by hand, though the overwhelming majority of bone (63.1%) were retrieved as heavy residues following the processing of bulk soil samples. The assemblage is made up of fragmented mammalian remains with no indication of avian or fish fauna.

C.2.2 Animal bone was recovered from a series of pits and these were 100% sampled. Based on the presence of Grooved ware pottery, a Late Neolithic date is suggested and the assemblage is considered accordingly. The aim of this study is to quantify and characterise the assemblage in terms of species representation, economic preferences and the wider potential of this small assemblage to contribute to our understanding of animal-human interactions in the period.

Methods: Identification and quantification

C.2.3 Identification of the assemblage was undertaken with the aid of Schmid (1972), and reference material from the Grahame Clark laboratory, Department of Archaeology and Anthropology, University of Cambridge. The zooarchaeological investigation followed the system implemented by Bournemouth University with all identifiable elements recorded (NISP: Number of Identifiable Specimens) and diagnostic zoning (amended from Dobney & Reilly 1988) used to calculate MNE (Minimum Number of Elements) from which MNI (Minimum Number of Individuals) was derived.

Preservation, fragmentation and taphonomy

C.2.4 State of preservation ranged from moderate to poor. The small percentage of identifiable bone is a reflection of the assemblage's fragmented character and a level of surface erosion and weathering. A remarkably large percentage of the material suffered a high degree of burning: 162 specimens were recorded as charred or calcined, a figure corresponding to 23.3% of the site assemblage. It was not possible to note any cut marks, and only two instances of gnawing were recorded.

Occurrence of species

C.2.5 Though the sieved material is quantitatively more significant, bone recovered by hand appears qualitatively more important with a relatively broad range of species (Table 20), especially given the small assemblage size. Of the three main food species, two are most dominant, with pig amounting to 73% of the identified species count. The wild woodland species such as aurochs and the native cervids complete the list. A number of fragments were recorded as weathered and eroded and these were assigned to a size-category.

Taxon	NISP		Total NISP
	<i>hand-recovered</i>	<i>heavy residues</i>	
Cow	33	2	35
Sheep/goat	3	.	3
Pig	61	72	133
Dog/ fox	1	6	7
Aurochs	2	.	2
Red deer	2	.	2
Roe deer	1		
Sub-total to species	103	80	182
Cattle-sized	53	6	59
Sheep-sized	51	167	218
Rodent-sized	.	4	4
Mammal n.f.i.	51	182	233
Total	258	439	696

Table 20 Number of Identified Species: broad breakdown by recovery method; the abbreviation n.f.i. denotes that the specimen could not be further identified.

Hand-recovered material

- C.2.6 Pig remains amounted to more than half of the identified species count and wild fauna dominated the hand-recovered material, followed by cattle. The remainder of the assemblage was made up of ovicapra, a canid specimen and a small number of wild species. Though a great proportion of the pig cohort were loose teeth or teeth fragments, the prevalence is still important (Table 21). Within the cattle component of the assemblage, it was possible to record smaller individuals and a number of fragments of larger elements. These could have originated from wild cattle, though given the assemblage's fragmentary character, this was not possible to confirm with measurements. Aurochs was positively identified, however, based on a complete astragalus and a near complete 1st phalanx. Red deer was represented by 1st phalanx and a metatarsus fragment, and roe deer by an antler segment. The unidentifiable count where specimens were attributed to a size category broadly reflects the prevalence of identified taxa.
- C.2.7 Looking at the skeletal element representation for cattle and pig, although mandibular fragments and loose teeth are somewhat more prevalent, elements corresponding to joints of high meat value are present too, showing the animals were reared and slaughtered on site. High degree of fragmentation did not allow for any cut marks or butchery actions to be observed in the material, though two specimens were recorded with gnawing marks. Not a single mandible was available for assessment of toothwear and, with an exception of a single pig radius with distal epiphysis unfused, it was not possible to obtain any other ageing data.
- C.2.8 Two largest bone deposits appeared to be 1011 (fill of pit **1014**) and 1031 (fill of pit **1033**) with NISP=60 and NISP=61.

Taxon	NISP	%NISP	MNI
Cow	33	32	2
Sheep/goat	3	2.9	1
Pig	61	59.1	3
Dog/ fox	1	1	1
Aurochs	2	2	1
Red deer	2	2	1
Roe deer	1	1	1
Sub-total to species	103	100	.
Cattle-sized	53	.	.
Sheep-sized	51	.	.
Rodent-sized	.	.	.
Mammal n.f.i.	51	.	.
Total	258	.	.

Table 21. The hand-recovered material: Number of Identified Specimens and the Minimum Number of Individuals for all species from all contexts; the abbreviation n.f.i. denotes that the specimen could not be further identified.

Bone from heavy residues

C.2.9 Though showing a restricted range of species, the sieved material also showed high numbers of pig remains. The lack of microfauna, aviofauna or ichthyofauna is a testimony to a good hand-recovery methods and it is in keeping with known period patterns. Of the unidentifiables, the sheep/ pig-sized elements and the unidentifiable crumbs of mammalian bone dominated the assemblage.

Taxon	NISP	%NISP	MNI
Cow	2	2.5	1
Pig	72	90	5
Dog/ fox	6	7.5	1
Sub-total to species	80	100	.
Cattle-sized	6	.	.
Sheep-sized	167	.	.
Rodent-sized	4	.	.
Mammal n.f.i.	182	.	.
Total	439	.	.

Table 22. Bone from heavy residues: Number of Identified Specimens and the Minimum Number of Individuals for all species from all contexts; the abbreviation n.f.i. denotes that the specimen could not be further identified.

Concluding remarks

C.2.10 Faunal signature recorded at CAMPET is remarkably typical for the period. Pigs were a major component of economy, as reflected in their high numbers. The prevalence of pig and cattle is the main characteristic of the Late Neolithic, as well as the exploitation of wild resources (Serjeantson 2011). For the region, another commonly recorded characteristic of faunal remains associated with Grooved Ware is a high proportion of bone affected by burning (e.g. Garrow 2006) and here the percentage is 23.3% of the site assemblage. Surface erosion, weathering and fragmentation further affected the assemblage, effectively resulting in only a small proportion being identifiable to species

level. It is thus not surprising that the majority of the pig cohort was identified based on teeth, as they are dense and survive better. Despite the high pig component and a degree of burning, there does not seem to be evidence of feasting. Though some studies discuss evidence for feasting from domestic Grooved Ware contexts (Rowley-Conwy and Owen 2011), this was not recorded in the region and it probably represents one of most important aspect differentiating monument-derived from domestic Grooved Ware fauna.

- C.2.11 Another rarely discussed characteristic is the weathered appearance of some elements, as if they were being 'curated' before deposition. This was first highlighted by Legge (1991) in his work at Down Farm, and this was also noted in Grooved Ware assemblages from Over (Rajkovača 2016), for instance. Despite some of the elements having the appearance of being weathered or curated (perhaps within a midden), there was no evidence of structured deposition within the animal bone assemblage.
- C.2.12 Though there has been a debate about the resurgence of preference for wild animals in the Neolithic (see Serjeantson 2011), the more recent studies tend to show that this trend is a continuation rather than resurgence. Absence of grains from Grooved Ware pits at Stonehenge (Pearson *et al.* 2008, 160) and no evidence for arable production from Grooved Ware pits from the region (Evans 2016, 295) seem to suggest that Neolithic economy continued to be opportunistic and that diet relied on wild sources of food much more than it is traditionally believed.

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APPENDIX E. OASIS REPORT FORM

All fields are required unless they are not applicable.

Project Details

OASIS Number	oxfordar3-273109			
Project Name	Late Neolithic Pits on Land Adjacent to Peterhouse Technology Park, Cherry Hinton, Cambridgeshire			
Project Dates (fieldwork)	Start	08-09-2015	Finish	24-09-2015
Previous Work (by OA East)	Yes		Future Work	No

Project Reference Codes

Site Code	CAMPET15	Planning App. No.	
HER No.	ECB4639	Related HER/OASIS No.	ECB4215

Type of Project/Techniques Used

Prompt: Direction from Local Planning Authority - PPS 5

Please select all techniques used:

<input type="checkbox"/> Field Observation (periodic visits)	<input checked="" type="checkbox"/> Part Excavation	<input type="checkbox"/> Salvage Record
<input type="checkbox"/> Full Excavation (100%)	<input type="checkbox"/> Part Survey	<input type="checkbox"/> Systematic Field Walking
<input type="checkbox"/> Full Survey	<input type="checkbox"/> Recorded Observation	<input type="checkbox"/> Systematic Metal Detector Survey
<input type="checkbox"/> Geophysical Survey	<input type="checkbox"/> Remote Operated Vehicle Survey	<input type="checkbox"/> Test Pit Survey
<input checked="" type="checkbox"/> Open-Area Excavation	<input type="checkbox"/> Salvage Excavation	<input type="checkbox"/> Watching Brief

Monument 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
pit	Neolithic -4k to -2k	pottery	Neolithic -4k to -2k
	Select period...	flint	Neolithic -4k to -2k
	Select period...	bone	Neolithic -4k to -2k

Project Location

County	cambridgeshire	Site Address (including postcode if possible)	
District	cambridge city	land adjacent to Peterhouse Technology Park Fulbourne Road Cambridge	
Parish	Cherry hinton		
HER	Cambrdgeshire		
Study Area	0.57ha	National Grid Reference	TL 48832 55949

Project Originators

Organisation	OA EAST
Project Brief Originator	Andy Thomas
Project Design Originator	Nick Gilmour
Project Manager	James Drummond-Murray
Supervisor	Nick Gilmour

Project Archives

Physical Archive	Digital Archive	Paper Archive
CCC stores	OA East office	CCC Stores
ECB4639	CAMPET15	ECB4639

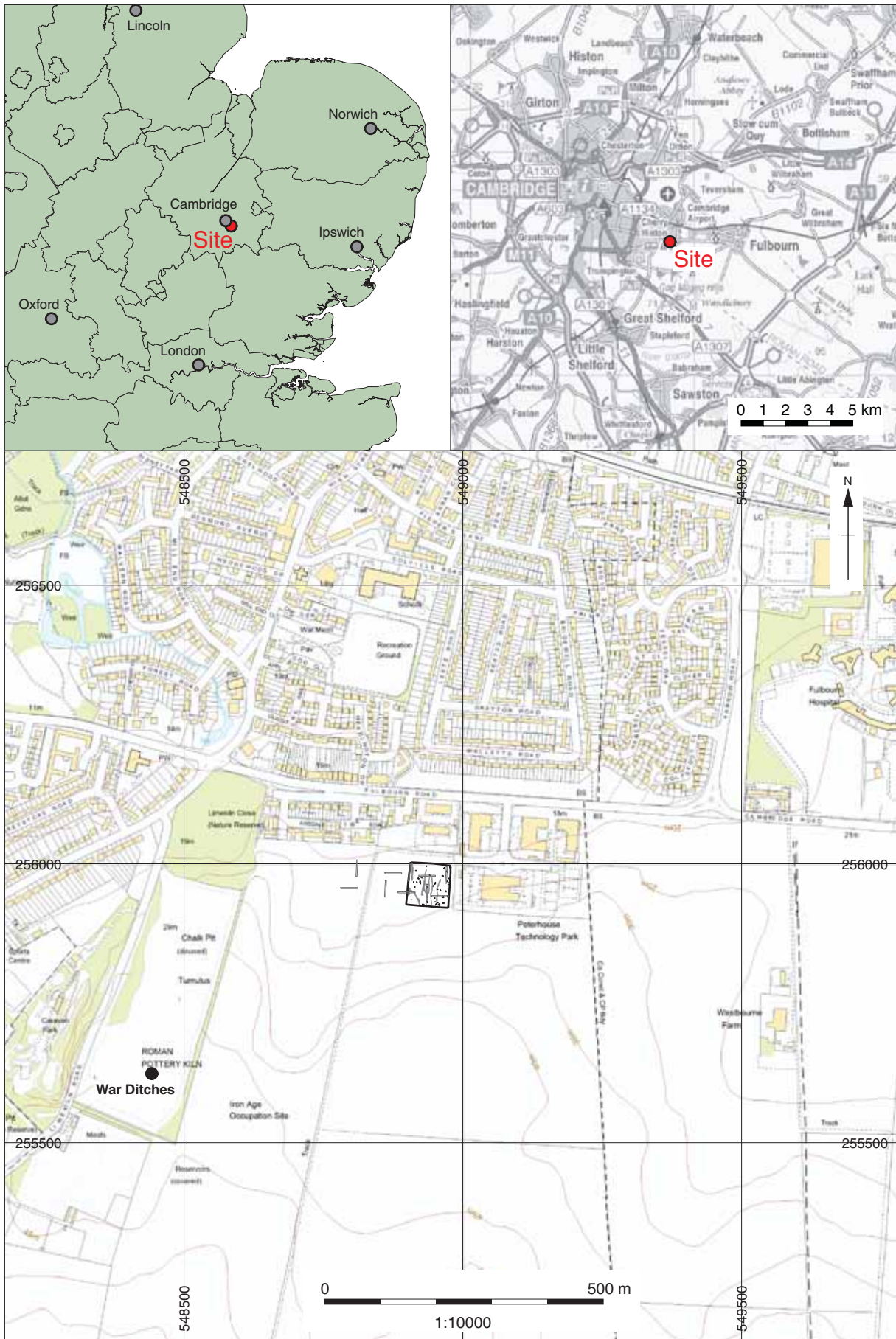
Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ceramics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stratigraphic		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Survey		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Textiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Bone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Stone/Lithic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Digital Media	Paper Media
<input checked="" type="checkbox"/> Database	<input type="checkbox"/> Aerial Photos
<input type="checkbox"/> GIS	<input checked="" type="checkbox"/> Context Sheet
<input type="checkbox"/> Geophysics	<input checked="" type="checkbox"/> Correspondence
<input checked="" type="checkbox"/> Images	<input type="checkbox"/> Diary
<input checked="" type="checkbox"/> Illustrations	<input checked="" type="checkbox"/> Drawing
<input type="checkbox"/> Moving Image	<input type="checkbox"/> Manuscript
<input checked="" type="checkbox"/> Spreadsheets	<input type="checkbox"/> Map
<input checked="" type="checkbox"/> Survey	<input type="checkbox"/> Matrices
<input checked="" type="checkbox"/> Text	<input type="checkbox"/> Microfilm
<input type="checkbox"/> Virtual Reality	<input type="checkbox"/> Misc.
	<input type="checkbox"/> Research/Notes
	<input checked="" type="checkbox"/> Photos
	<input checked="" type="checkbox"/> Plans
	<input checked="" type="checkbox"/> Report
	<input checked="" type="checkbox"/> Sections
	<input type="checkbox"/> Survey

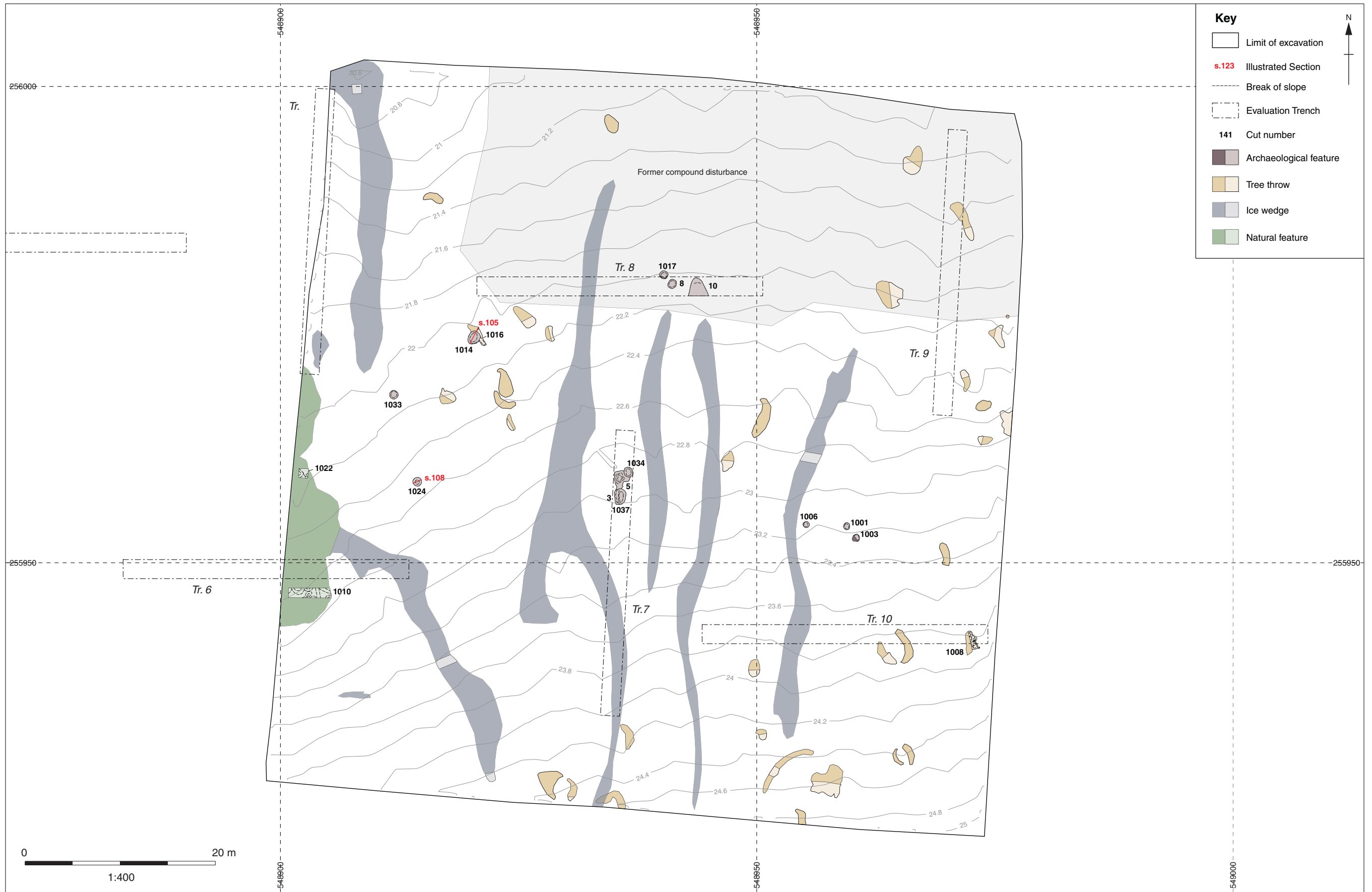
Notes:

PXA OASIS number: oxfordar3-236275



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Figure 1: Site location



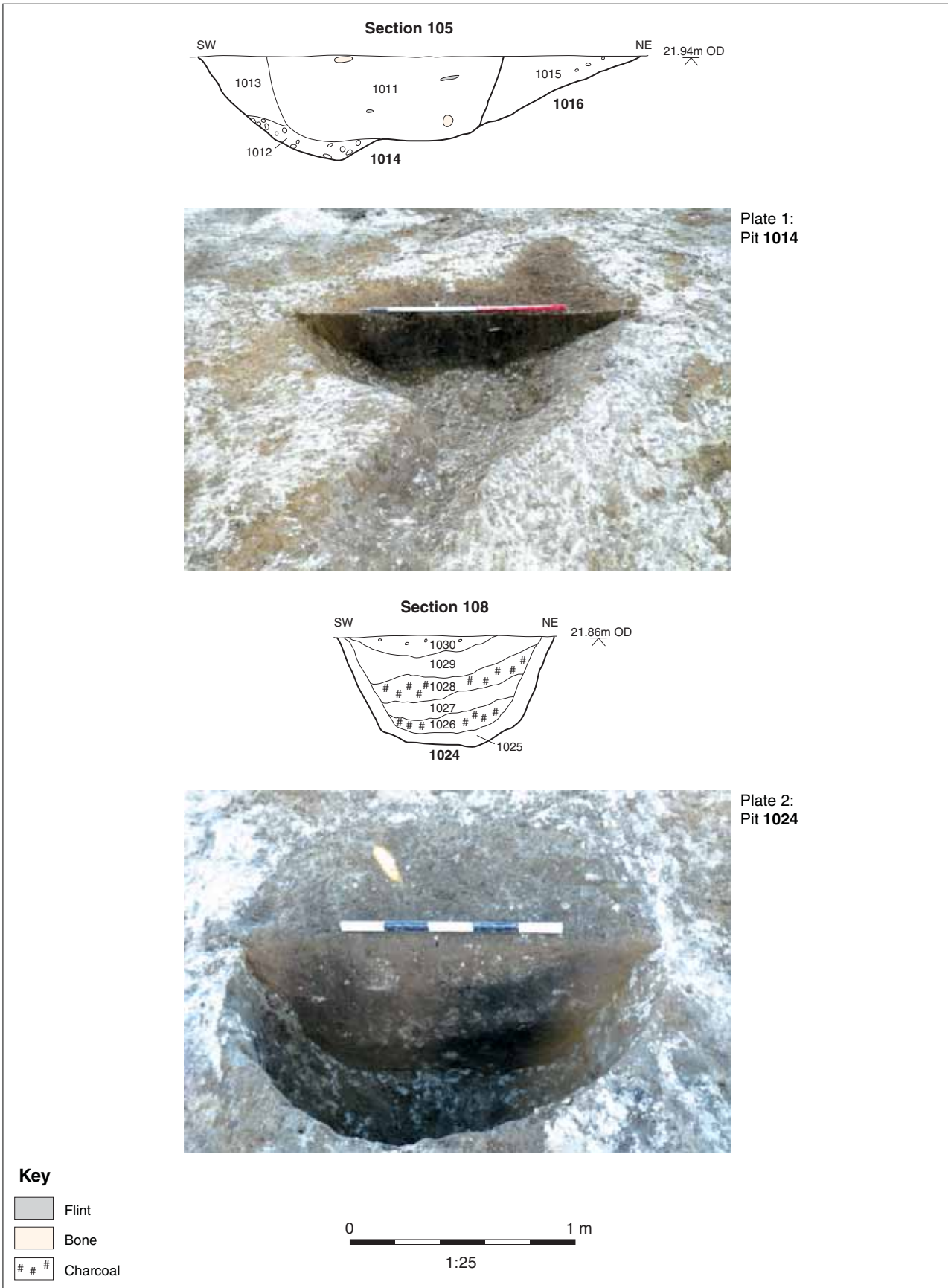


Figure 3: Selected sections with plates



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