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CCC AFU Report Number 899

Neolithic Flint and Pottery at Main Street, Stow-Cum-Quy, Cambridgeshire

Archaeological Evaluation

Chris Thatcher

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Cambridgeshire County Council
Environment & Community Services

Commissioned by Croudace Homes Limited

CCC AFU Report Number 899

Neolithic Flint and Pottery at Main Street, Stow-Cum-Quy, Cambridgeshire

Archaeological Evaluation

Chris Thatcher BA

With contributions by Barry Bishop BA MA, Steve Boreham BSc. PhD, Rachel Fosberry HNC (Cert Ed) AEA Sarah Percival.BA MA

Site Code: SCQ MAS 06
CHER Event Number: ECB 2347
Date of works: 7th – 11th August 2006
Grid Ref: TL 5206 6040

Editor: Mo Muldowney BA PIFA
Illustrator: Severine Bezie MA

CAM ARC OASIS Report Form **OASIS Number:**

PROJECT DETAILS				
Project name	*Neolithic Flint and Pottery at Main Street, Stow-Cum-Quy, Cambridgeshire*			
Short description	An archaeological evaluation was undertaken on the site of a proposed building development on land at Main Street, Stow-Cum-Quy. The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *Planning and Policy Guidance 16 - Archaeology and Planning* (Department of the Environment 1990) Archaeological remains of considerable importance were recorded in Trench 1, to the south of the site. These consisted of stratified deposits of Prehistoric flint and pottery, dated to the Mesolithic and Neolithic periods that were preserved in the depression at the top of a natural solution hollow. A large number of worked flint pieces were recovered from these contexts, including a Neolithic leaf shaped arrowhead. Struck flints were also recovered from the primary fill of a treethrow further to the east of this trench and several unstratified flints were also uncovered from the remaining trenches. Less than 25% of the solution hollow deposits were sampled but despite this the quantities of material recovered were highly significant and will assist greatly in helping to characterise human activity on the Fen Margins during the Prehistoric period.			
Project dates	Start	07-08-06	End	11-08-06
Previous work	None		Future work	No
Associated project reference codes	SCQ MAS 06			
Type of project	Evaluation			
Site status	None			
Current land use (list all that apply)	Open land, rural			
Planned development	Residential			
Monument types / period (list all that apply)	Solution Hollow			
Significant finds: Artefact type / period (list all that apply)	Worked flint, Prehistoric Pottery			
PROJECT LOCATION				
County	Cambridgeshire	Parish	Stow-Cum-Quy	
HER for region	Cambridgeshire			
Site address (including postcode)	Land at Main Street, Stow-Cum-Quy			
Study area (sq.m or ha)	0.1ha			
National grid reference	TL 5206 6040			
Height OD	Min OD	12.75	Max OD	14.65
PROJECT ORIGINATORS				
Organisation	CAM ARC			
Project brief originator	Kasia Gdaniec			
Project design originator	James Drummond-Murray			
Director/supervisor	Chris Thatcher			
Project manager	James Drummond-Murray			
Sponsor or funding body	Croudace Homes Ltd			
ARCHIVES	**Location and accession number**		**Content (e.g. pottery, animal bone, database, context sheets etc)**	
Physical			Worked flint, Prehistoric pottery	
Paper			Context data, plans, sections	
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BIBLIOGRAPHY				
Full title	*Neolithic Flint and Pottery at Main Street, Stow-Cum-Quy, Cambridgeshire*			
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Summary

An archaeological evaluation was undertaken on the site of a proposed building development on land at Main Street, Stow-Cum-Quy.

The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *Planning and Policy Guidance 16 - Archaeology and Planning* (Department of the Environment 1990)

Archaeological remains of considerable importance were recorded in Trench 1, to the south of the site. These consisted of stratified deposits of Prehistoric flint and pottery, dated to the Mesolithic and Neolithic periods that were preserved in the depression at the top of a natural solution hollow. A large number of worked flint pieces were recovered from these contexts, including a Neolithic leaf shaped arrowhead. Struck flints were also recovered from the primary fill of a treethrow further to the east of this trench and several unstratified flints were also uncovered from the remaining trenches.

Less than 25% of the solution hollow deposits were sampled but despite this the quantities of material recovered were highly significant and will assist greatly in helping to characterise human activity on the Fen Margins during the Prehistoric period.

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1 Introduction

This archaeological evaluation was undertaken in accordance with a Brief issued by Kasia Gdaniec of the Cambridgeshire Archaeology, Planning and Countryside Advice team (CAPCA; Planning Application S/1155/02/O), supplemented by a Specification prepared by Cambridgeshire County Council Archaeological Field Unit (CCC AFU).

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

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

2 Geology and Topography

The site overlay a transition area from the Lower Chalk and 4th Terrace deposits (British Geological Survey 1981) at between 12.75mOD and 14.65mOD. The topography of the development area was found to slope gently upwards towards the south east, this variation in recorded height across the site amounted to 1.66m.

3 Archaeological and Historical Background

Stow-Cum-Quy lies alongside the road from Cambridge into East Anglia and the site occupied a vacant plot in the middle of the village. It is suggested that the village itself, whose population in 1086 was 20, is of Saxon origin.

3.1 Prehistoric

A number of Prehistoric finds have been recovered within the vicinity of the development area. These include a Mesolithic axe from the south end of the village (CHER 06360) and two Bronze Age spearheads collected to the north of the village (CHER 06511 & CHER 06512). Fieldwalking south of the village (CHER 11780) also revealed evidence for Bronze Age activity.

3.2 Roman

The aforementioned fieldwalking also revealed evidence for Roman features. A number of finds collected from around Quy Hall (CHER 06363B) were indicative of the presence of a Roman building in the

vicinity of that site and other Roman finds have also been found (CHER 06514 & CHER 06566) that suggest occupation during the Roman period.

3.3 Saxon and Medieval

Saxon remains (CHER 06508) have been located although they may be derived from the Saxon cemetery at Little Wilbraham. Whilst there are a paucity of finds from the Saxon period in the vicinity there is a significant body of evidence for medieval occupation in and around the village. These include ridge and furrow, furlong boundaries, earthworks and other medieval cultivation evidence recorded from the fields surrounding the village (CHER 06361, CHER 06695, CHER 06698, CHER 06699, CHER 10274 & CHER 11202).

3.4 Other works

No archaeological deposits were recorded during an evaluation (Bailey 2004) approximately 50m to the north at Parkside Service Station (ECB1617). This work was conducted on the opposite side of the road to the site on land thought to lie within the park attached to Quy Hall, which may account for the absence of development.

Another evaluation at the north end of the village (ECB257) revealed only post-medieval pits and undated ditches (Cooper 1999).

4 Methodology

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

The Brief required that a 5% sample of the development area be excavated. This amounted to 515m^2 or a total of 286m of trenching. Eight trenches were excavated which varied in length between 23m and 50m.

Machine excavation was carried out under constant archaeological supervision with a tracked 360 excavator using a toothless ditching bucket.

Spoil, exposed surfaces, sections and features were scanned for finds.

All archaeological features and deposits were recorded using CCC AFU'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.

A total of eight 20l and one 9l environmental samples were taken from deposits in Trenches 1 and 2 in order to provide an indication of the level of survival of charred grain and other ecofacts. The residues from these samples were also sorted in order to recover any microliths and debitage. The evaluation took place in mainly dry and bright weather conditions punctuated by sporadic rainfall.

5 Results

A layer of topsoil, (100, 200, 300, 400, 500, 600, 700 and 800), was recorded, which extended across the entire site. Immediately beneath this, a layer of subsoil was recorded in a number of the trenches. It appeared to survive in the base of undulations in the natural chalk and it is possible that this represents a medieval ploughsoil preserved only at depths below the level of later ploughing.

The topsoil comprised dark grey brown sandy silt that was between 0.25m and 0.35m thick. The subsoil comprised a dark orange brown sandy silt that was up to 0.50m thick.

Trench	Topsoil	Subsoil	Total depth of trench
1	0.32m	0.30m	0.60m-1.40m
2	0.30m	0.50m	0.40m-1.50m
3	0.30m	0.35m	0.50m-0.80m
4	0.35m	-	0.40m-0.50m
5	0.30m	0.50m	0.55m-1.00m
6	0.25m	0.50m	0.40m-0.95m
7	0.25m	-	0.30m-0.50m
8	0.25m	0.25m	0.50m-0.75m

Table 1: Depths of deposits across the development area

Mixed chalk and gravel deposits, with flint nodules and sand inclusions, were recorded at between 11.95mOD and 14.13mOD.

5.1 Trench1

Trench 1 was 50m long and aligned northeast to southwest parallel with the southernmost boundary of the site. Towards the southern end of the trench, the remnants of a land surface, (103) and (105), were preserved in a hollow formed by a solution hole (**107**) that had largely been filled in by natural silts and gravel. A large number of worked flints and fragments of Neolithic pottery were recovered from these layers (103) and (105). Furthermore, two tree throws, one of which contained worked flint (**109**), were recorded at the northern end of the trench. These features were all sealed by a subsoil layer (101) comprised of mid brown silty sand.

5.1.1 Solution Hole

The solution hole (**107**) was approximately 8.25m in diameter with its southernmost edge recorded at approximately 12.5m from the southern limit of the trench. It extended across the full width of the trench and it is reasonable to suppose that the feature extended to at least the same diameter along its second axis. The trench was not extended which resulted in less than 25% of the deposit being sampled.

A 1m section was dug across the length of the solution hollow through layers 103, 104 and 105. A large number of worked flints and prehistoric pottery sherds were recovered from these deposits and subsequently a 1m square sample was excavated through them in 5cm spits. The spoil was 100% sampled by dry sieving on site in order to recover as much of the lithic assemblage contained within these contexts as possible.

The uppermost fill of the solution hollow (102) was comprised of mid brown silt sitting in the depression at the top of the feature, which was formed by the settling of the underlying deposits. This material appeared to be derived from natural silting and weathering processes, possibly representing an accumulation of soil as a result of erosion caused by land clearance. Layer 102 produced only two pieces of struck flint and both of these may have been derived from the deposits below (Bishop 2007, App. 4).

Immediately underlying 102 and concentrated at the south eastern edge of **107** was a light grey brown, sandy silt deposit that contained large quantities of pottery and flint (104). The boundary between this layer and 103, which it abutted, was diffuse and the two fills were differentiated mainly on the basis of their colour. 103 was composed of mid grey brown silt and represented a Neolithic land surface preserved in the depression in the centre of the solution hollow.

A total of 697 struck flakes were recovered from these three contexts (102, 103 & 104). Serrated flakes and blades (Fig. 4 & 5) dominated the assemblage recovered from layers 103 and 104, accounting for nearly 80% of all the retouched pieces. Technologically the two contexts were indistinguishable and as such they probably formed part of the same industry (Bishop 2007, App. 4).

Large quantities of pottery were also recorded in association with the lithic assemblage. The pottery was dated to the early Neolithic period and consisted entirely of flint tempered, plain round based shouldered bowls with externally thickened or folded rims (Percival 2007).

The earliest excavated context in the sequence was layer 105, which comprised a mid brown sand silt. 139 worked flints and a number of burnt flints were recovered. The worked stone recorded at this level

was largely recorticated and dated to the Mesolithic period (Bishop 2007, App. 4) with the burnt flint occurring lower down in the layer.

5.1.1 Tree Throws

Two tree throws were excavated at the northern end of the trench. Both of these features continued beyond the limit of the trench but it was possible to excavate sections in each.

Approximately 50% of **109** was excavated in plan. Upon cleaning the trench section it became apparent that the feature actually extended up to 0.60m below ground level and contained two distinct fills. The upper fill of the feature, a mid orange brown sandy silt (116), was recorded in section. A 20l sample was taken from this context, which was found to contain a single piece of chaff, a glume base of *Triticum spelta* (spelt wheat). This was indicative of crop processing, for instance sieving and the removal of impurities by hand taking place on site (Fosberry 2007).

Excavation of the primary fill (110) revealed it to be up to 0.15m thick. 17 struck pieces and a very small quantity of burnt flint were recovered from this deposit, a dark brown grey sandy silt. Whilst the worked flints were not particularly diagnostic they did share similar technological attributes with the Early Neolithic assemblage recovered from the solution hollow. One piece was also fully recorticated and may therefore have been a residual piece from the earlier, Mesolithic, occupation (Bishop 2007).

The second tree throw was also excavated. Less of the feature was exposed within the trench and no finds were recovered from it.

5.2 Trench 2

Trench 2 was 40.60m long and aligned northeast to southwest and was located towards the centre of the development area. No archaeological features were recorded within the trench.

The natural deposits comprised chalk with bands of silty gravel containing flint nodules. Also of note was a marked dip in the level of the chalk in the centre of the trench. It is suggested that this was the result of localised de-calcification of the chalk. This resulted in the deposition of bands of gravel and silt, (201) and (202), that were observed immediately overlying the chalk (Boreham, pers comm.).

5.3 Trench 3

Trench 3 was 50m long and aligned northwest to southeast at the eastern edge of the development area with the northern end of the trench convergent with the eastern site boundary.

No archaeological features were recorded in this feature. The natural deposits comprised chalk interrupted by three bands of silty gravel containing frequent flint nodules.

5.4 Trench 4

Trench 4 was 50m long and aligned northwest to southeast roughly parallel with the western boundary of the site.

No archaeological features were recorded although there was a significant level of modern disturbance in the form of a modern sewer, recorded on a northwest to southeast alignment, in the southern half of the trench.

5.5 Trench 5

Trench 5 was 40m long and aligned northwest to southeast in close proximity to, and parallel with, the eastern boundary of the site.

No archaeological features were identified in this feature. The natural deposits comprised chalk interspersed with patches of silty sand and gravel containing flint nodules. The subsoil deposit in the northern half of the trench was fairly thick, up to 0.50m. This was in all likelihood a plough soil preserved below the level of post medieval ploughing and contained in a depression in the underlying chalk.

5.6 Trench 6

Trench 6 was 23m long and aligned northeast to southwest slightly north of the centre of the development area.

No archaeological features were recorded in this trench. The topsoil (601) within the trench immediately overlay chalk natural with occasional silty gravel patches.

5.7 Trench 7

Trench 7 was 33m long and aligned northwest to southeast and was located in the northwest corner of the development area.

The natural deposit recorded at the base of the trench was chalk. Several silty patches investigated in the trench were attributed to root action.

5.7.1 Posthole

A single posthole (**702**), 0.30m in diameter, was recorded at the northern end of the trench. This feature had been severely truncated and was no more than 0.07m in depth. No finds were recovered. The posthole was not seen to be associated with any other features but its most likely function was structural.

5.8 Trench 8

Trench 8 was 25m long, aligned north to south and located in the centre of the northern part of the development area.

No archaeological features were recorded within this trench.

6 Discussion

Stratified deposits of worked flint dateable to the Mesolithic and the Early Neolithic periods were recorded and sampled, preserved at the top of a natural solution hollow (**107**). Archaeological sequences of this nature are very rarely recorded from anywhere in Britain. The nearest comparable sequence was excavated at Fordham, whose topographical position on high ground adjacent to the Fen edge and assemblage of Mesolithic and Neolithic flints was directly comparable to this evaluation (Bishop 2007, Appendix 2).

The solution hollow was only partially excavated which rendered it impossible to accurately gauge the overall quantities of lithic material present, and subsequently assess the scale of the activities represented.

6.1 The Pottery Assemblage

The pottery assemblage consisted of sherds from up to 14 different vessels. Three different flint tempered fabrics were recorded and all were from plain round based shouldered bowls with externally thickened or folded rims. Whilst the dating of the pottery is uncertain it is likely that they belonged to the developed style of carinated bowl dating to around 3500BC onwards (Percival 2007, Appendix 3).

6.2 The Flint Assemblage

6.2.1 Mesolithic

The Mesolithic material, recovered from context 105, was characteristic of a relatively limited and probably short-duration campsite, used primarily for the acquisition of raw materials and perhaps toolkit repair. Other such discrete scatters of lithic material are noted elsewhere within the region, and it is clear that the locality was a favoured source of raw material that was exploited extensively by Mesolithic communities (Appendix 2). The raw material itself was particularly homogeneous and consisted of small nodular shaped cobbles of fine-grained black flint with lighter opaque inclusions. They were most likely obtained from the glacially/peri-glacially weathered chalk derived from the local bedrock, or nearby gravel sources (Bishop Appendix 2). The fact that this material was selected over possibly better quality knapping flint readily available directly from the nearby

chalk is also paralleled in many contemporary assemblages within the region. This is likely to be due to the relative accessibility of the gravel derived flint nodules when compared with the higher quality material contained within the chalk.

6.2.2 Neolithic

A larger sample of Early Neolithic material was gathered, mainly from the solution hole (**107**), specifically contexts 102, 103 and 104, but also from 110, the primary fill of treethrow **109**, and unstratified contexts across the site. The assemblage probably still represented a temporary occupation site and the larger sample size could be attributed to a number of factors, namely that the area was more-widely settled, with an increased scale and variety of flintworking. Taphonomic factors may also have skewed the sample sizes leaving a greater proportion of the later material *in situ*.

Serrated flakes and blades were most prevalent within the assemblage; whilst they are common in Early Neolithic assemblages and not unusual in Mesolithic and Early Bronze Age contexts the extent to which they dominated the retouched component at Stow-Cum-Quy was notable.

It may be that the wildly differing frequency of these objects from site to site indicates that they served fairly specific functions not applicable to every site where flint reduction is in evidence, which in turn suggests that much of the activity at Stow-Cum-Quy was focussed on such tasks. The role most commonly attributed to serrates is as composite sickles for the harvesting of silica-rich plants, particularly cereals. Recent experimental work however has highlighted their suitability for cutting or sawing soft plant material, such as bracken or green wood. Either of these could be possible in this case but the latter is perhaps more likely as there was no evidence of 'sickle gloss' on the recovered specimens (Appendix 2). Furthermore, the pollen sample from Trench 2 was found to contain cereal and arable weed pollen, however the assemblage was very sparse, specifically as a result of the unpromising and oxidised sediments from which they were taken. Based on the stratigraphic information from the sections it was nevertheless deemed unlikely that woodland clearance for arable activity took place prior to the late Neolithic, or more likely Bronze Age, which placed these practises outside the date range of the lithic assemblage (Boreham 2007, Appendix 4).

The apparently limited focus of activity demonstrated at the site is in evidence at many of the Early Neolithic sites, which punctuate the Fen Margins. For instance at Fordham large quantities of raw material were worked on site but their products were not in evidence, whilst at Great Wilbraham a wide variety of lithic types, suggestive of a broad range of activities, were recorded (Bishop, 2007, App. 4). It therefore seems increasingly likely that these sites, along with the numerous other

examples in the region, represent the focal points of various targeted activities for the exploitation of a particularly extensive landscape of inhabitation.

7 Conclusions

The evaluation revealed a lithic and pottery assemblage of some considerable significance. The stratified deposits revealed a shift in the usage of the raw material recovered from the site between the Mesolithic and Neolithic period. The assemblage from the Mesolithic period suggested that flakes and blades were manufactured on site but then apparently removed for use elsewhere, whilst during the Neolithic the number of used and retouched pieces in evidence on site increased dramatically, suggesting that the flint implements were used in the immediate locality.

The wider significance of the site was that it enabled further inferences into the nature of the Mesolithic – Neolithic transition to be made. In the case of Stow-Cum-Quy only minor differences were noted between the assemblages from each period and these appeared to be largely down to functional traits rather than what one might describe as cultural factors. It has been suggested that the catalyst for the transition to Neolithic technologies was mass migration from the Continent and whilst the site does not necessarily contradict this theory it neither provides strong evidence to support it. What the Stow-Cum-Quy assemblage does show is a clear stratigraphic delineation between the two periods, which may imply that the mix of Mesolithic and Neolithic technologies more commonly encountered elsewhere might represent post depositional mixing rather than evidence for a gradual technological/cultural transition.

Recommendations for any future work based upon this report will be made by the County Archaeology Office.

Acknowledgements

The author would like to thank Croudace Homes Ltd who commissioned and funded the archaeological work. The project was managed by James Drummond Murray. Chris Thatcher directed the fieldwork and was assisted by Tom Eley and Gemma Tully.

The brief for archaeological works was written by Kasia Gdaniec, who visited the site and monitored the evaluation.

Bibliography

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Appendix 1: Context Summary

Context	Cut	Trench	Description
100	N/A	1	Topsoil
101	N/A	1	Subsoil
102	107	1	Erosion Deposit
103	107	1	Buried Soil
104	107	1	Buried Soil
105	107	1	Buried Soil
106	107	1	Solution Hollow fill
107	107	1	Solution Hollow Cut
108	N/A	1	Natural Chalk
109	109	1	Cut of treethrow
110	109	1	Fill of Treethrow
111	N/A	1	Glacial/Periglacial deposit
112	N/A	1	Glacial/Periglacial deposit
113	N/A	1	Glacial/Periglacial deposit
114	N/A	1	Glacial/Periglacial deposit
115	N/A	1	Glacial/Periglacial deposit
116	109	1	Secondary fill of Treethrow
200	N/A	2	Topsoil
201	N/A	2	Subsoil
202	N/A	2	Flint ridden glacial deposit
203	N/A	2	Clay glacial deposit
204	N/A	2	Natural Chalk
300	N/A	3	Topsoil
301	N/A	3	Subsoil
302	N/A	3	Natural
400	N/A	4	Topsoil
401	N/A	4	Mixed natural and modern disturbance backfill
500	N/A	5	Topsoil
501	N/A	5	Subsoil
502	N/A	5	Natural
600	N/A	6	Topsoil
601	N/A	6	Subsoil
602	N/A	6	Natural
700	N/A	7	Topsoil
701	N/A	7	Natural
702	703	7	Cut of possible Post hole
703	703	7	Fill of possible Post hole
800	N/A	8	Topsoil
801	N/A	8	Subsoil
802	N/A	8	Natural

Appendix 2: Environmental Appraisal

Rachel Fosberry

1 Introduction and Methods

Nine bulk samples were taken from features within the evaluated areas of the site in order to assess the quality of preservation of plant remains and their potential to provide useful data as part of further archaeological investigations.

Up to twenty litres of each sample were processed by tank flotation for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The flot was collected in a 0.5mm nylon mesh and the residue was washed through a 1mm sieve. Both flot and residue were allowed to air dry. The dried residue was passed through 5mm and 2mm sieves and a magnet was dragged through each resulting fraction prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The flot was examined under a binocular microscope at x16 magnification and the presence of any plant remains or other artefacts are noted on Table 1.

2 Results

The results are recorded on Table 1.

Sample Number	Context Number	Cut Number	Context Type	Flot contents
1	110	109	Neolithic Pit	No charred plant remains
2	203		Layer	Single Vetch seed, sparse charcoal
3	202		Layer	Sparse charcoal
4	201		Subsoil	4 Cereal grains
5	116	109	Pit	Single glume base, nutshell fragment
6	103	107	Surface	Single cereal grain, nutshell fragment
7	103	107	Surface	3 cereal grains
8	105	107	Surface	Sparse charcoal
9	105	107	Surface	Single cereal grain

Table 1: Environmental Samples from SCQ MAS 06

Plant macrofossils

Preservation is by charring and is generally poor. Modern contaminants in the form of rootlets are present in most of the samples.

Cereal grains are present in low quantities. Chaff is represented as a single glume base of *Triticum spelta* (spelt wheat) in Sample 5.

A single weed seed, identified as *Vicia* sp (vetch) was recovered from Sample 2.

3 Conclusions and Recommendations

The plant assemblages from evaluation of this site consist of low densities of plant macrofossils that are probably derived from scattered refuse.

The presence of grains, chaff and a single weed seed (possibly associated with the cereal crops) is an indication that part of the crop processing took place on site, such as sieving and picking impurities out by hand.

If further excavation is planned, sampling should be undertaken as investigation on the nature of cereal waste and weed assemblages is likely to provide an insight into to utilisation of local plant resources, agricultural activity and economic evidence from this period.

Appendix 3: Lithic Report

Barry Bishop

Introduction

The archaeological excavations at the site recovered a total of 907 pieces of struck flint and 225g of burnt flint fragments. The majority of the assemblage came from the fills of a naturally formed solution hollow identified in Trench 1 with the only other feature to produce struck flint being a tree-throw hollow, also located in Trench 1. Small quantities of lithic material were recovered from unstratified topsoil deposits across the site and this again was concentrated in Trench 1. The lithic material has therefore been divided into three main contextual groups; the assemblages from the natural solution hollow, that from the tree-throw hollow, and the unstratified pieces. All metrical information and descriptions follow the conventions of Saville (1980).

Quantification

Context	Trench	Decortication / core preparation Flake	Core Tablet	Flake	Unclassifiable Flake Fragment	Chip	Blades and broken blades	Blade-Like Flake	Blade Core	Flake Core	Minimally worked Core	Arrowhead	Burin	Microlith	Piercer	Serrated	Scraper	Utilized flakes and blades	Conchoidal Chunk	Burnt (No.) >10mmm	Burnt (Wt:g)
+	Tr1	7	1	2	4	2	6	4			1					3		1	2	1	1
102	Tr1							1										1			
103	Tr1	80	3	106	138	37	134	47	3	1	3	1	1	0	1	22	1	43	16	80	154
104	Tr1	11	1	5	9	4	12	6	1							2	1	4	2	3	2
105	Tr1	12	1	20	53	11	31	9						2						34	59
110	Tr1	1		4	3		3	1	1									2	2	3	9
+	Tr2	1		2							1							1	1		
+	Tr3						1														
+	Tr4	2		3		1	1														
+	Tr6	1																			
+	Tr7	2		1															1		
+	Tr8				1	1															

Table 1: Quantification of Lithics by Context

As shown by Table 1, struck flint was recovered from most of the areas investigated although it was heavily concentrated within Trench 1, which produced nearly 98% of the overall assemblage, mostly from layers [102], [103], [104] and [105], the fills of the naturally formed

solution hollow. Smaller quantities were present in context [110], the fill of a tree-throw hollow, as well as unstratified contexts within the trench. Only small quantities of burnt flint were recovered during the excavations. The distribution of this showed similar patterns to that of the struck flint; all came from Trench 1, notably the fills of the solution hollow.

Raw Material

The raw material used for the struck flint assemblages was notably homogeneous and consisted of small nodular shaped cobbles of fine-grained black flint with lighter opaque inclusions. Cortex, where present, was hard, rough, of variable thickness and had been mineral stained to a yellowish colour. The cobbles were weathered and exhibited occasional thermal spalling (potlidding) to their surfaces and had frequent, heavily recorticated, ancient thermal fracture surfaces. They were likely to have been obtained from derived deposits, most probably from the glacially/peri-glacially weathered chalk that constituted the bedrock at the site, or from gravel sources present in the vicinity, although the raw materials used had not experienced any extensive alluvial rolling. No fresh chalk flint was positively identified. Exceptions included very occasional pieces of fine-grained grey-brown and yellow-brown (honey coloured) flint and few flakes of a coarser-grained opaque grey flint. The latter resembled 'Lincolnshire Wolds Flint', occasionally used during the Early Neolithic for the production of polished axes, and at least one flake, from context [103], showed some evidence of being struck from a polished implement. These may have been present in the local gravel deposits or glacial tills, although it is possible they were obtained from more-distant sources.

It was notable that what may have been better knapping quality flint, available directly from the chalk, was not utilized despite suitable sources being available in the hinterland of the site, a similar situation being noted for many contemporary assemblages within the region (Edmonds 2006, 131).

Overall, the flakes and blades in the assemblage were small, rarely exceeding 50mm in maximum dimension but with a few attaining up to 90mm maximum dimension. This was reflected in the size of the cores. These varied in weight from 16g to 225g, averaging just 47g, and none of the true cores recovered were likely to have produced flakes exceeding 50mm in length.

The Assemblage from the Natural Solution Hollow

Dating and Affinities

The solution hollow produced the largest assemblage, comprising 836 pieces or 92% of the total assemblage from the site. The lithic material was present in four layers within the hollow. The earliest, context [105],

produced 139 struck pieces and was overlain by context [103], which produced a total of 637 struck pieces. Context [104], which contained 58 pieces, was part of, or at least associated with, context [103], and both of these were sealed by context [102], which produced only two pieces, both of which may have been derived from the deposits below. The hollow was finally sealed by context [101], which contained no lithic material.

Considerations of the typological makeup and the condition of the struck flint within the hollow allows it to be divided into two stratigraphically distinct groups, the earliest was contained within context [105] and the latter within contexts [102], [103] and [104], and it is argued below that these represent two discrete episodes of activity within the hollow. The two groups shared many similar typological attributes and had been manufactured using similar reduction strategies, but could be most easily distinguished visually by their differential degrees of recortication. Although not completely uniform, the material from [105] was largely fully recorticated with the pieces exhibiting an all-over white colour, whilst that from [102]/[103]/[104] was predominantly only partially recorticated, the pieces having a milky surface discolouration with occasional white patches (see Table 2).

Context	No. Fully recorticated	% Fully recorticated	No. Partially Recorticated	% Partially recorticated
102	0	0	2	100
104	0	0	58	100
103	13	4.2	294	95.8
103 NE	4	4.7	81	95.3
103 Spit 1	1	0.7	137	99.3
103 Spit 2	0	0	107	100
105 Spit 3	53	88.3	7	11.7
105 Spit 4	71	89.9	8	10.1

Table 2: number and percentage of recorticated/unrecorticated struck pieces present within the solution hollow. Separate contexts presented in approximate stratigraphic order

Table 2 demonstrates a marked difference in the proportion of recorticated/unrecorticated pieces between those from context [105] and those from the other layers within the solution hollow. Although the rate and degree of recortication can vary even within contemporary assemblages and is a factor of specific and localized burial condition (eg Schmaltz 1960), other considerations suggest that in this case it may also reflect a real difference in the chronology of deposition, a situation that has been noted in similar contextual circumstances from other sites (eg Reynier 2000). That two different industries were represented was perhaps best evidenced by the presence of chronologically sensitive retouched pieces; context [105] produced two microliths, diagnostic of Mesolithic industries, whilst context [103] contained a leaf-shaped arrowhead, a cultural marker of the Early Neolithic, as well as similarly dated pottery.

The Mesolithic Assemblage from Context [105]

Condition

As demonstrated above, the bulk of the material from context [105] had fully recorticated, attaining a deep white colour and resulting in the disintegration of some of the thinner edges of flakes and blades. Other than the effects of recortication, the assemblage was generally in a good condition although there was a high incidence of breakage, consistent with agencies such as trampling, and perhaps also reflecting the fragile nature of many of the flakes and blades produced. There was little evidence for any extensive post-depositional disturbance and it was likely to have been knapped *in situ* or eroded into the hollow from close by.

Distribution and Deposition

Layer [105] was excavated in two spits; Spit 3, the upper part of the layer, contained 60 struck pieces whilst Spit 4, the lower part of the layer, contained 79 pieces (Table 3). Although greater in number, the pieces from the lower spit were noticeably smaller, consisting principally of small flake fragments, broken blades and chips, these having an averaged weight of 1.4g. They could be contrasted with the material from the upper spit, which was dominated by relatively complete flakes and blades, larger flake and blade fragments and a lower proportion of chips, the pieces having an averaged weight of 3.7g and being, on average, more than 2.5 times heavier than the pieces from the lower spit. The burnt flint fragments had a very similar distribution; most were present within the lower spit but these tended to be considerably smaller in size.

As discussed above, very little material from this layer was present in any of the overlying layers, which, taken with the size distribution of the pieces within the layer, would indicate that at least the bulk of this material was deposited onto or within the upper part of the layer, with smaller pieces working their way down via agencies such as bioturbation.

Context	Decortication / core preparation Flakes	Core Tablets	Flakes	Unclassifiable Flake Fragments	Chips	Blades and broken blades	Blade-Like Flakes	Microliths	Total Struck	Burnt (No.) >10mmm	Burnt Weight (g)	Ave. weight of burnt fragments (g)
105 Spit 3	7	1	11	11	1	22	7		60	1	10	10
105 Spit 4	5		9	42	10	9	2	2	79	33	49	1.5
Total	12	1	20	53	11	31	9	2	139	34	59	
Percentage	8.6	0.7	14.4	38.1	7.9	22.3	6.5	1.4	100			

Table 3: Lithic Material from Layer [105]

The lithic industry present within layer [105] was the product of a systematic, blade-based reduction strategy. Although no cores were recovered, it was evident from the presence of decortication flakes, chips and other knapping waste that they had been worked at the site, the principal products being blades, these forming 22% of the assemblage. There was some evidence for the cresting of cores, a technique designed to facilitate the removal of blades, and some concern for core maintenance was demonstrated by the recovery of a core tablet. Notably, the only retouched pieces present consisted of two microliths, diagnostic of Mesolithic industries. Both consisted of obliquely truncated points made on distal blade segments, one measuring 12mm in width and the other 5mm. The former had a relatively obtuse and slightly concave truncation, a feature noted on some early microlith forms as well as on truncated blades, although the narrow dimensions of the latter piece indicates a manufacturing date during the Later Mesolithic period (Jacobi 1976; 1978).

Discussion of the Mesolithic Assemblage

As this layer was only partially excavated, it is difficult to confidently comment on the range of activities represented by the lithic material or on the nature and extent of the occupation during this period. The evidence as it stands would only suggest a relatively brief stay that was primarily geared towards the reduction of lithic raw materials and the production or repair of microlithic toolkits, perhaps encouraged by the local availability of the raw materials and the shelter afforded by the solution hollow. Flakes and blades were evidently being manufactured at the site but the lack of retouched or obviously utilized pieces suggests that these, alongside any still-productive cores, may have been taken from the site for use elsewhere. The presence of small quantities of variably burnt pebbles as well as some burnt struck pieces suggests that the occupants enjoyed the use of a hearth.

The Early Neolithic Assemblage from Contexts [102], [103] and [104]

Condition

The remaining layers within the hollow produced nearly 700 struck flints, which on typological and technological criteria and by association with pottery can be firmly dated to the Early Neolithic. This material showed variable degrees of recortication but with only a few pieces had this fully developed and the original colour of the flint could usually be ascertained. The pieces were mostly in a good sharp condition, not having suffered from the erosive affects of recortication noted with the assemblage from layer [105] although some edge chipping was apparent, consistent with limited trampling of the material. Systematic refitting was not attempted as the deposits had only been partially excavated, but a number of short refitting sequences were noted and it was evident that the assemblage had been either knapped *in situ* or manufactured close-by and rapidly deposited into the hollow.

Context	Decortication / core preparation Flake	Core Tablet	Flake	Unclassifiable Flake Fragment	Chip	Blades and broken blades	Blade-Like Flake	Blade Core	Flake Core	Minimally worked Core	Conchoidal Chunk	Arrowhead	Burin	Piercer	Serrated	Scraper	Utilized flakes and blades	Total Struck	Burnt (No.) >10mmm	Burnt (Wt:g)	Ave, weight of burnt fragments (g)
102							1										1	2			
103	46		58	45	3	68	26	3	1	1	9	1	1	1	13		31	307	14	56	4
103 NE	12	1	16	18	3	22	6								3		4	85	1	1	1
103 Spit1	15	2	21	36	3	32	11			2	2				5	1	8	138	8	13	1.6
103 Spit2	7		11	39	28	12	4				5				1			107	57	84	1.5
104	11	1	5	9	4	12	6	1			2				2	1	4	58	3	2	1.5
Total	**91**	**4**	**111**	**147**	**41**	**146**	**54**	**4**	**1**	**3**	**18**	**1**	**1**	**1**	**24**	**2**	**48**	**697**	**83**	**156**	
Percentage	**13.1**	**0.6**	**15.9**	**21.1**	**5.9**	**20.9**	**7.7**	**0.6**	**0.1**	**0.4**	**2.6**	**0.1**	**0.1**	**0.1**	**3.4**	**0.3**	**6.9**				

Table 4: Lithic Material from Layers [102], [103] and [104]

Distribution and Deposition

The struck flint from context [104] was indistinguishable from that within context [103] and it may be regarded as part of the same industry. A 1m by 1m square was excavated in two spits through layer [103]. Spit 2, representing the lower part of the layer, contained a slightly lower number of struck pieces but a significantly higher proportion of smaller flakes, flake fragments and chips than Spit 1, the upper part of the layer. The averaged weight of the struck pieces from the upper spit was 3.1g, which contrasted notably with the averaged weight of 0.4g recorded for the lower spit. Only two struck flints were recovered from above layer [103]/[104], both from context [102]. This distribution shares many similarities to that noted for layer [105] and similarly suggests that the assemblage was deposited onto the surface of [103]/[104], perhaps even being knapped directly on to it, but with some smaller pieces being moved downwards through the layer.

Technology

Overall, the struck flint from layers [102]/[103]/[104] showed many technological similarities to that from [105]. It was manufactured using a blade-based reduction strategy with the complete reduction sequence being represented. Cores were being prepared and flakes and blades produced but, in contrast with the assemblage from layer [105], many of these were being used, either directly, or after being reworked into tools, and subsequently discarded at the site.

Cores

Only eight cores were recovered, accounting for just over 1% of the struck material from the solution hollow (see Table 5). One of these was notably much heavier than the others and may have been used as a heavy-duty core-tool. It consisted of a relatively large rounded cobble

with a series of flakes removed bifacially from one end, forming a crude but effective chopping tool (Fig. 4). The others were all true cores; two had been only minimally worked before being abandoned, one had actually shattered early on in its productive life and the others had all been reduced to exhaustion. They showed little evidence for any detailed preparation or shaping prior to their full reduction. Simple platforms were created on flake scars or, sometimes, natural thermal scars were employed, although striking platform edges were usually trimmed and a number of core tablets were recovered, indicating some concern for core maintenance. The variable degree and skill to which they were worked is matched at other contemporary industries, such as at Fordham (Mortimer and Conner forthcoming), the Great Wilbraham enclosure (Edmonds 2006) or Kilverstone (Beadsmoore 2006), where it has been suggested that these differences may, in part at least, reflect the differing skill levels amongst the knappers. Despite a rather casual attitude towards core preparation, the manufacture of blades and narrow flakes was successful, with half of the cores showing clear evidence for their production. The relatively low numbers of cores may suggest that others had been prepared at the site but removed for further working elsewhere.

Context	Type	Clark *et al*. 1960type	Description	Weight (g)
103	Blade	B1	Fractured rounded pebble with blades removed from two opposed platform, exhausted although probably small to start with	24
103	Blade	B1	Fractured rounded pebble with single platform and a few removals from opposite end, probably in order to manipulate the core's face	25
103	Blade	A2	Rounded pebble with single platform producing a few blades, but split along thermal flaw	59
103	Flake	C	Small multiplatformed core on small rounded pebble, principally produced small flakes	40
103	Minimal	Irregular	Small fragment, possibly a large flake with several small flakes removed centripetally	16
103 Spit 1	Core tool	-	Rounded pebble with thick cortex and one end reduced keel style. The cobble has many thermal faults and was unlikely to produce any useful flakes	275
103 Spit 1	Minimal	Irregular	Angular chunk with a few flakes removed randomly but no attempts at platform production	47
104	Blade	A2	Rounded pebble with many removals from a cortical platform reducing the face of the pebble and 'burrowing' in to it	34

Table 5: Descriptions of Cores from the Solution Hollow

Retouched Implements

Contrasting with the assemblage from layer [105] was the relatively high proportion of tools present in layers [102]/[103]/[104]. Retouched pieces accounted for 4% of this assemblage and a further nearly 7% of the assemblage showed signs of being utilized, some quite heavily. The retouched pieces were dominated by serrated flakes and blades, of which 24 were present, with two scrapers, a piercer, a burin and a

leaf-shaped arrowhead (Fig. 4) also present (see Table 6). The presence of a few flakes of opaque grey flint, one possibly struck from a polished implement, may indicate that a polished axe had been present at the site and reused as a further source of raw material.

Context	Type	Description	Dimensions (L/B/W: mm)
103 Spit 1	Scraper	Thick flake covered in c.50% cortex with end and distal part of right lateral margin steep scalar retouched, large 'retouch' flake removed either during use or resharpening, possibly causing it to be abandoned?	52 x 43 x 15
103	Burin	Dihedral: thick blade-like flake with small spall removals on distal, some wear	50 x 28 x 8
103	Piercer	Created on blade-like flake by notching on left ventral and left dorsal margins accentuating a minimally retouched distal, some wear	32 x 21 x 6
104	Scraper	Convex end-scraper on short flake with parallel dorsal scars and c.60% cortex, some wear	41 x 35 x 8
103	Arrowhead	Oval with all-over thinning and accentuated tip. Green (1980) type 3A. Weighs 1.8g	33 x 19 x 2

Table 6: Description and Dimensions of Retouched Implements from the Solution Hollow

The proportion of retouched implements is slightly higher than the 3.5% recorded at the Great Wilbraham enclosure (Edmonds 2006, table 3) but marginally lower than recorded at some of the Early Neolithic 'settlement' or 'pit' sites in the region; 5% was recorded at Kilverstone (Beadsmoore 2006, 60), 4-5% at Broome Heath (Wainwright 1972, 66), 5-6% at Hurst Fen (Clarke *et al.* 1960, 214) and 6% at Spong Hill (Healy 1988, 32: table 14). The proportion of retouched pieces is, however, much higher than seen at some 'specialist activity' sites in the region, 0.6% of the assemblage was retouched at the primary reduction site at Fordham, (Mortimer and Connor 2006) and 1.3% at the axe-manufacturing site at Harford, Norfolk (Trimble forthcoming). Although the proportion of retouched pieces here may indicate that this assemblage is most consistent with 'settlement' type activities, as suggested for the 'pit' sites, the preponderance of serrated pieces may indicate that the activities here were dominated by their use and may therefore be more comparable with task-specific sites.

Serrated flakes and blades (Fig. 4 & 5) formed by far the largest category of implement present within the solution hollow, accounting for nearly 80% of all retouched pieces recovered during the excavation (see Table 7). This dominance was further enforced by many of the 48 utilized pieces identified, some of these were likely to have represented worn serrates whilst others may have performed similar functions.

Context	Complete	Length	Breadth	Width	Edge morphology	Location of serrations	Comments
103 Spit 1	Yes	49	12	5	Slightly sinuous	Left Lateral	Cortically backed
103 Spit 1	Yes	49	45	12	Slightly sinuous	Left Lateral	
103 Spit 1	No	>20	14	3	Straight	Right Lateral	Medial blade segment with light retouch/use wear on opposite margin
103 Spit 1	Yes	32	16	6	Slightly concave	Right Lateral	Blade with short length of serrations near to distal, some light retouch/use wear on opposite margin
103 Spit 1	No	>40	19	10	Slightly concave	Right Lateral	Cortically backed
103 Spit 2	No	>33	15	3	Straight	Both Lateral Margins	Blade with distal tip missing
103	No	>32	20	6	Slightly sinuous	Right Lateral	
103	No	>31	18	4	Straight	Right Lateral	
103	No	>23	10	3	Straight	Left Lateral	Burnt
103	No	>43	20	3	Straight	Both Lateral Margins	Cortical distal
103	Yes	40	17	3	Concave	Right Lateral	
103	Yes	42	19	4	Slightly sinuous	Right Lateral	Cortical distal
103	Yes	55	17	4	Slightly sinuous	Right Lateral	Cortical distal
103	Yes	38	20	5	Slightly sinuous	Right Lateral	
103	Yes	42	20	5	Straight	Right Lateral	Cortical distal
103	No	>48	28	5	Concave	Right Lateral	Cortically backed
103	Yes	39	18	9	Straight	Right Lateral	Cortically backed, made on core rejuvenation flake
103	Yes	45	49	7	Slightly sinuous	Left Lateral	Cortically backed
103	No	>23	15	5	Straight	Left Lateral	Burnt
103 NE	Yes	46	11	8	Straight	Left Lateral	Cortically backed
103 NE	No	>39	19	5	Slightly sinuous	Both Lateral Margins	
103 NE	Yes	45	16	9	Slightly sinuous	Left Lateral	Cortically backed
104	No	>31	21	5	Concave	Left Lateral	Burnt
104	Yes	47	34	8	Concave	Left Lateral	Thick partially cortical flake with light blunting on opposite margin and some blunting to distal

Table 7: Descriptions of Serrates from the Solution Hollow

Table 7 demonstrates that most serrates were manufactured on narrow flakes or blades and there was some consistency in their widths, with 15 of the 24 falling between 15 and 20mm in width. The number of serrations ranged from 8 to 22 per cm of edge but it tended to be rather sporadically undertaken, often only part of the flake's edge had been modified and sometimes unmodified gaps remained along the serrated edge. There was a slight tendency for the right margins to be used for the serration and only three had been serrated along both margins. All had been worn to some degree but other than some

rubbing around the edges of the serrations, none showed any obvious 'sickle gloss', the distinctive bright polishing caused by processing silica-rich plants, although identification was somewhat hampered by the incipient recortication. A few pieces had cortex or blunting-type retouch on the opposite margins to the serrations, suggesting they may have been hand held, and many had cortical distal ends, which were often splayed out slightly and formed the widest part of the flake. The pieces favoured for serration therefore tended to be long and narrow with a cortical margin or distal end. Beyond this, there appeared to be an overall lack of concern with standardization or symmetry, no attempts were made at altering the flakes' morphology through retouching, and it would appear that they were not intended to have been hafted. Overall, there was a feeling of a rather casual approach to producing the implements, with function, rather than aesthetic concerns, in mind.

The Tree-Throw Hollow

Context	Decortication / core preparation Flake	Flake	Unclassifiable Flake Fragment	Blades and broken blades	Blade-Like / Narrow flakes	Blade Core	Utilized Flakes and Blades	Conchoidal Chunk	Total Struck	Burnt (No.) >10mmm	Burnt (Wt:g)
110	1	3	2	2	1	1	2	2	14	3	9
110 Surface		1	1	1					3		
Total	**1**	**4**	**3**	**3**	**1**	**1**	**2**	**2**	**17**	**3**	**9**

Table 8: Quantification of Lithic Material from the Tree-Throw Hollow

This feature produced 17 struck pieces and a very small quantity of burnt flint (Table 8). None of the struck pieces were particularly diagnostic although as a whole this material was comparable to the Early Neolithic assemblage from the hollow and it shared similar technological attributes. A single piece had fully recorticated and this may have derived from the earlier, Mesolithic, occupation. One core was recovered which comprised a nodular cobble weighing 60g that had a number of blades removed from it, using a natural thermal scar that constituted its sole striking platform. It was unclear if the tree-throw hollow was open during this period or if it was formed later with the flintwork being residually incorporated.

The Unstratified Assemblages

Context	Decortication / core preparation Flake	Core Tablet	Flake	Unclassifiable Flake Fragment	Chip	Blade and broken blades	Blade-Like / Narrow flakes	Minimally worked Core	Serrated	Utilized flakes and blades	Conchoidal Chunk	Total Struck	Burnt (No.) >10mmm	Burnt (Wt: g)
+ Tr1	7	1	2	4	2	6	4	1	3	1	2	33	1	1
+ Tr2	1		2					1		1	1	6		
+ Tr3						1						1		
+ Tr4	2		3		1	1						7		
+ Tr6	1											1		
+ Tr7	2		1								1	4		
+ Tr8				1	1							2		
Total	**13**	**1**	**8**	**5**	**4**	**8**	**4**	**2**	**3**	**2**	**4**	**54**		
%	**24.1**	**1.8**	**14.8**	**9.3**	**7.4**	**14.8**	**7.4**	**3.7**	**5.6**	**3.7**	**7.4**			

Table 9: Quantification of Lithic Material from Unstratified Deposits

As may be expected, the condition of the material from unstratified contexts was in a variable condition, consistent with it having been in an unstable burial environment, such as the plough-zone. With the exception of that from Trench 1, only very small quantities of struck flint were recovered from any of the other areas investigated, and even that from Trench 1 was not particularly prolific considering the density of flint present within the solution hollow (Table 9). The unstratified material included a number of blades and blade-like flakes that, overall, indicate it was broadly comparable to that from the solution hollow. The only retouched pieces consisted of serrated flakes and blades, reaffirming the similarities with the Early Neolithic assemblage. The relative lack of pieces from unstratified deposits within Trench 1 and the sharp falling off of struck flint densities away from the hollow suggests that activity involving flint use, although not completely confined to the hollow, was heavily focused upon it.

Discussion

The Stow-cum-Quy lithic material consisted of a stratified series of assemblages that can be dated to the Mesolithic and the Early Neolithic periods. It was principally recovered from a natural solution hollow but as this feature was only partially excavated it was impossible to accurately gauge the overall quantities of lithic material that were present, and therefore assess the scale of the activities represented.

Assuming it had been evenly distributed throughout the hollow, it would appear that quite substantial quantities of struck flint from both periods were present; in total 384 pieces were recovered from the $1m^2$ that was excavated by spits. It is also uncertain what the total range of

activities as indicated by the struck flint were. This discussion assumes that the proportions and densities of retouched and other pieces remained reasonably constant throughout the hollow with no specific activity zones present for either of the periods, which could skew the interpretations offered.

The Mesolithic material appeared to have been relatively contained within the solution hollow and few clearly associated pieces were present beyond it. The assemblage would appear to indicate a relatively limited and probably short-duration campsite, where raw material acquisition and perhaps toolkit repair seem to be the main activities conducted. Similar patterns of transient occupation have been noted within the region and suggest that the river valleys and the areas later to become the Fen margins were extensively visited by Mesolithic communities engaged in a variety of activities, often leaving small discrete scatters of lithic material and probably moving on after a short period (eg Jacobi 1984; Edmonds *et al*. 1999; Reynolds and Kaner 2000).

The Early Neolithic assemblage was apparently more extensive and, again, mostly contained within the hollow but with small quantities found in a near-by tree-throw hollow and scattered in the vicinity. As with the Mesolithic flintwork, it probably also represented a temporary occupation site, a short-term focus of activity in a more-widely settled landscape, although now the scale of flintworking had increased as well as the variety of its products, indicating a wider range of tasks were being undertaken. However, although a number of different retouched pieces were present, serrated flakes and blades both provided a relatively high proportion of the overall assemblage and thoroughly dominated the retouched inventory.

Site	Reference	Struck Flint No.	% Retouched	% Serrates/total assemblage	% Serrates/ Retouched component
Stow-cum-Quy, Cambridgeshire		**697**	**4.0**	**3.5**	**83**
Hurst Fen, Suffolk (1st season)	Clark *et al.* 1960	16,398	4.8	2.2	45.2
Spong Hill, Norfolk	Healy 1988	963	5.4	2.1	38.5
Great Wilbraham, Cambridgeshire	Edmonds 2006	4,257	3.5	1.2	34.7
Thorp St Andrew, Norfolk	Bishop forthcoming	2,692	3.7	1.0	27
Tatterhall Thorpe, Lincolnshire	Healy 1993	268	5.6	1.1	20
Eynesbury, Cambridgeshire	Harding 2004	3,513	-	2	12
Kilverstone, Norfolk	Beadsmore 2006	12,354	5	0.5	10.7
Fordham, Cambridgeshire	Mortimer and Connor 2006	4,295	0.9	0	0
Broome Heath, Norfolk	Wainwright 1972	9,070	4	0	0

Table 10: Assemblage size, retouch proportions and proportions of serrated pieces recovered from Early Neolithic contexts at selected sites in eastern Britain

Serrates can be found in Mesolithic to the Early Bronze Age contexts but they are common within Early Neolithic assemblages and, although not always present, can occasionally form significant parts of the retouched inventories, both at monumental and non-monumental sites. However, as demonstrated by Table 10, rarely do they dominate the retouched component to the extent seen at Stow-cum-Quy. That they were so differentially represented within assemblages suggests that they may have been involved in fairly specific activities, variably undertaken from place to place and/or time-to-time and, occasionally, representing some of the principal tasks undertaken. This would appear to be the case here. Flint reduction was important and the easy availability of suitable raw materials may have been an important factor in attracting peoples to this locale. The presence of other tool forms suggest a variety of activities were conducted, but the prevalence of serrated pieces indicates that the occupation here was heavily focussed on the tasks for which these were used.

The type and range of the activities to which serrates were employed remains obscure, they have traditionally been regarded as composite sickles, essential elements in the Neolithic tool-kit and linked to harvesting silica-rich plants, particularly cereals. 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 (Avery 1982, 38; Grace 1992; Bradley 1993; Donahue 2002). Although cereal

harvesting remains a possibility, the processing of plant resources other than cereals is equally possible and the lack of 'sickle-gloss' on these specimens may even suggest the latter is more likely.

The dominance within the lithic assemblage of serrated pieces and the possible specialization that this may represent are perhaps the clearest indications that this assemblage represents only a single point of activity within a much wider landscape of inhabitation. This appears to be a recurring aspect of the Early Neolithic in the southern Fens and its margins, where a variety of sites, sometimes appearing to focus on specific or a limited range of activities, can be found scattered across the landscape. They suggest the complex exploitation of an equally complex and varied landscape, where individual instances of occupation could vary considerably in their nature, scale, duration and purpose (cf Pollard 1999). At Fordham, for example, substantial quantities of lithic raw materials were procured and reduced within a large solution hollow, but their products would appear to have been removed for use elsewhere (Mortimer and Connor forthcoming). Close-by a much smaller scatter may have represented the location of a small camp where perhaps a few people repaired their hunting equipment (ibid.). A similarly small assemblage from Oakington appears to represent a temporary stop involving perhaps only a few individuals, who manufactured a few arrowheads before moving on.

These temporary stops can perhaps be contrasted with the Great Wilbraham enclosure. There, the lithic assemblage was much more extensive and varied in character, demonstrating a relative intensity of occupation with a wide variety of activities represented (Evans *et al.* 2006). This may suggest the presence of relatively large numbers of people, perhaps aggregating for communal events held at the enclosure. This was not necessarily the case for all such enclosures in the region; however, those at Haddenham and Etton may have witnessed much lower intensities of occupation (ibid., 134, 150, table 12) and may have been used for much shorter periods or for entirely different purposes altogether.

A similar pattern of long term or high-density occupation has been noted at Honey Hill, Ramsey (Edmonds 1999). There, the vast scatter of lithic material was interpreted as representing a locale where raw materials were brought in for processing and disseminated for use elsewhere. It was suggested that " *the scatter reflects only certain stages in the longer sequence of actions that carried people and stone both from and to the hill*" (ibid., 53). Ashwin makes a similar point in his survey of Neolithic sites in Norfolk and suggests, "*at least some of these sites were specialized or seasonally occupied elements in a diverse settlement and economic regime*" (Ashwin 1996, 47).

The Stow-cum-Quy Early Neolithic material fits well with such models, representing a particular locale where suitable lithic raw materials could be procured and where, amongst other activities, a particular

emphasis was placed on using serrated flakes and blades, probably in processing plant materials. It represents a relatively mobile inhabitation of the whole landscape, where particular activities were untaken where deemed appropriate and when and as needed.

Perhaps one of the most notable aspects of the Stow-cum-Quy assemblage was the presence of stratified Mesolithic and Early Neolithic assemblages. Such occurrences are very rarely recorded from anywhere in Britain although a comparable sequence has recently been excavated at Fordham, a site that shares a similar topographical and physiological position. There, typologically diagnostic Mesolithic and Early Neolithic assemblages were also recovered from a natural solution hollow, located on relatively high ground and adjacent to the much lower and wetter tracts of the Fen margins.

The main significance of the association of these typologically distinct assemblages lies in their ability to contribute to debates concerning the nature of the Mesolithic – Neolithic transition, particularly the question of whether Neolithic cultural traits appeared in Britain principally from mass migration from the Continent or through their acculturization by indigenous communities, a question that has been much debated but far from resolved (see Thomas 1988 and 1999 for discussions of some of the many problems surrounding these concepts).

Not surprisingly, given the nature of much of the archaeological evidence relating to these periods, a significant part of this debate has focused around the nature of lithic assemblages from either side of the transition. Generally, there appears only limited change in technology, with flint assemblages from both periods being characterized by blade-based reduction strategies, as is the case of the assemblages from both Stow-cum-Quy and Fordham. Some differences were noted although these were minor, most probably related to functional differences within the assemblages and any real differences that there may have been were heavily outweighed by their evident similarities. Although there appears to be a high degree of technological continuity across the transition, some of the most defining aspects of both periods consist of their tool-type inventories. The Mesolithic is noted for, and virtually defined by, the presence of microliths and these do not appear to continue to be made during the Neolithic. Conversely, the Neolithic was originally defined by the appearance of polished implements within its inventories, with leaf-shaped arrowheads now replacing the absent microliths as projectile points.

Although these particular differences appear absolute and, indeed, the identification such diagnostic implements frequently forms the principal means of dating the lithic assemblages of these periods, by far the bulk of both Mesolithic and Early Neolithic material is to be found within unstratified, plough-disturbed scatters. It has been noted that in many areas lithic assemblages from both sides of the transition have similar distribution patterns within the landscape, often being found in close

proximity. Clay (2006, 73) notes that, throughout the East Midlands, Early Neolithic lithic scatters are often found in the same location as Later Mesolithic ones. A similar situation has been noted in East Anglia, particularly for the lower-lying areas including the Fens and Fen-edge (Brown and Murphy 1997, 12).

As demonstrated by the extensive work of the Fenland Survey, lithic scatters of Later Mesolithic and Early Neolithic date appear to be particularly prevalent within and around the Fen margins and its lower-lying feeder valleys, where numerous, often superimposed, scatters have been recorded. Reynolds and Kaner (2000) argue that the fifth millennium BC may be marked by a transitional industry and that the frequent close association of lithic types from the Mesolithic and Neolithic, such as microliths, arrowheads and polished implements, may not merely represent the incidental mix of different industries, but possibly constitute a real phenomenon.

Although in no way contradicting such a view, the evidence from Stow-cum-Quy and Fordham may temper it by demonstrating that the close proximity of such pieces does not necessarily indicate close temporal or cultural association. With both assemblages, had their stratigraphic integrity not been protected by burial within the hollow but instead been subjected to the same destructive influences of agriculture as witnesses by the majority of other artefact scatters, what would have been found would be the familiar picture of juxtaposed diagnostic material of Later Mesolithic and Early Neolithic date, which could perhaps be used as evidence for continuity between the periods. Instead, the assemblages were stratigraphically separated, the Neolithic material being deposited after the formation of a thin layer of soil over the Mesolithic assemblage. Although it cannot be estimated how long this process took, the two occupations cannot be directly associated, and indeed the ‘typological signatures’ of each lithic assemblages indicate that, at both Stow-cum-Quy and Fordham, notably different activities characterised each episode of occupation.

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Appendix 4: Prehistoric Pottery Assessment

By Sarah Percival (NAU Archaeology)

Three hundred and fifty three sherds weighing 1,709g were recovered from four excavated contexts during the excavation of evaluation trenches at Stow cum Quy, Cambridgeshire. The assemblage is all of earlier Neolithic date and contains approximately fourteen vessels, all plain round based shouldered bowls with externally thickened or folded rims. No complete vessels were found, each bowl being represented by a few sherds. The sherds are small and often abraded.

Fabric

Three fabrics each containing varying quantities and sizes of crushed flint temper were identified (Table 1).

Fabric	Description	Quantity	Weight (g)
F1	Fine, well finished with highly smoothed or burnished exterior. Contains flint pieces below 4mm in size	60	350
F2	Medium fabric with mixed flint pieces up to 8mm and a smoothed surface finish	205	806
F3	Coarse mixed angular flint including those above 8mm.	87	551
F	Very abraded, cannot be assigned fabric type.	1	2
Total		**353**	**1709**

Table 1: Quantity and weight of pottery by fabric

The predominance of flint tempering compares well with Earlier Neolithic assemblages from all over Southern Britain, (Cleal 1995) and in particular with the East Anglian sites of Broome Heath, Ditchingham (Wainwright 1972, 23) and Spong Hill, North Elmham, Norfolk (Healy 1988, 71). No shell tempered sherds such as those found on sites at Etton (Pryor 1999) and Bob's Wood, Hinchingbrooke (Percival 2004), were present.

Form

The rim forms were classified following the rim typology used for Hurst Fen, Suffolk, (Longworth 1960, 228) Windmill Hill, Wiltshire (Smith 1965), and Spong Hill, Norfolk (Healy 1988 Fig.57) (see Table 2 below).

Type	Quantity	Weight (g)
Externally thickened	4	61
Folded or rolled	11	67
Out turned	4	32
Simple flat	2	13
Simple pointed	1	7
Total	**22**	**180**

Table 2: Quantity and weight of pottery by rim form

The rims are most frequently folded, rolled or out turned. Four are externally thickened. The remaining rims are simple, upright forms, which are either pointed or flattened. Burnishing is present on 43% of the assemblage (735g). Vessel form is hard to establish as the assemblage is fragmentary, however two sherds show distinct changes of angle suggesting carinated bowls with defined shoulder ledges low on the body of the vessel. The combination of rim forms present suggests that the vessels are of 'developed' form (Gibson 2002, 72), similar to vessels from Broome Heath, Ditchingham (Wainwright 1972, fig.15 P1).

Discussion

The site provides an interesting parallel for a number of other contemporary sites in East Anglia. Recent excavations at the multi-period site at Harford near Norwich uncovered a preserved colluvial soil, which contained earlier Neolithic pottery (Trimble forthcoming). Artefact rich hollows have been excavated at Hurst Fen Mildenhall (Clark et al 1960, 205) and at The Stumble, Essex where a pottery and flint rich superficial layer had been deposited or had accumulated in an area previously occupied by post/stake structures. Once the midden like deposits had built-up further features were then cut through the layers and into the subsoil (Brown forthcoming). Brown suggests that wide spread surface scatters of artefacts may have been common on Neolithic sites though these have since been lost through agricultural activity. As at The Stumble and the contemporary midden site at Colney Norfolk (Whitmore 2004) the material and the deposit of which it is part have survived ploughing because of their protected location with a natural hollow.

The pottery is similar to assemblages from a number of fen edge sites (Pollard 2000) including Hurst Fen, Mildenhall (Longworth 1960, fig.21) and is broadly contemporary with a large pottery assemblage recovered from the interrupted-ditched enclosure at nearby Great Wilbraham (Pollard 2000). Dating of the assemblage is uncertain but the vessels probably belong to the developed style of carinated bowl dating to around 3500BC onwards (Gibson 2002, 72).

Recommendations for further work

No further work required. No sherds require illustration.

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Appendix 5: Pollen Analysis

By Steve Boreham BSc. PhD.

Introduction

This report presents the results of pollen analyses from seven samples of sediment taken from two archaeological trenches (TR1 & TR2) at Stow-cum-Quy, Cambridgeshire (TL 520 604).

Section AB in trench 1 (TR1) was 105cm long, and was located in the deepest part of the trench. The sequence comprised a basal brown/buff silty sand (ctx 106) (below 0cm), overlain by a grey/brown silty sand (ctx 105) (0-15cm), which was sampled for pollen at 10cm. This in turn was overlain by a grey/brown silt-sand (ctx103) (15-28cm), which produced an assemblage of worked flints. This unit was sampled for pollen at 21cm. Above this there was a unit of brown/buff sand (ctx 102) (28-48cm). This was overlain by a brown sandy silt with unworked flints (ctx 101) (48-70cm), from which a pollen sample was taken at 55cm. Above this there was the ploughsoil (ctx 100) (70-105cm).

Section 2 in trench 2 (TR2) was 130cm long, and was again located in the deepest part of the trench. The sequence comprised a basal white weathered Chalk (below 0cm), overlain by a buff/brown chalky sandy silty clay (0-10cm), which was sampled for pollen at 5cm. The context number for this unit was given in the field as '200a', although this does not appear in the section drawing and appears to be out of sequence. Above this was a dark brown sandy silt with pebbles (ctx203) (10-24cm), which was sampled for pollen at 18cm. Above this there was a unit of orange/brown silty sand and pebbles (ctx 202) (24-45cm), from which a pollen sample was taken at 35cm. This was overlain by a buff/grey fine silty sand (ctx 201) (45-105cm), from which a pollen sample was taken at 70cm within a grey silt band containing some worked flints. Above this there was the ploughsoil (105-130cm).

The seven samples were prepared using the standard hydrofluoric acid technique, and counted for pollen using a high-power stereo microscope. The percentage pollen data from these 7 samples is presented in Table 1.

Pollen Analyses

Four of the seven pollen samples had extremely low pollen concentrations and were effectively barren, with pollen concentrations below 200 grains per ml. The remaining three samples also had very low concentrations of pollen (<3000 grains per ml), and preservation of the few palynomorphs discovered was rather poor. The statistically desirable total of 300 pollen grains was clearly not achieved from

assessment counts of one slide for these samples, and extreme caution must be exercised in drawing any conclusions from the percentage pollen data presented in Table 1.

Percentage pollen data	**SCQ TR1 AB context 103**	**SCQ TR1 AB context 101**	**SCQ TR2 2 context 200a**
	21cm	55cm	5cm
Pinus	0.0	0.0	6.7
Corylus	7.7	5.6	6.7
Poaceae	30.8	38.9	20.0
Cereals	0.0	0.0	26.7
Asteraceae (Asteroidea/Cardueae) undif.	15.4	16.7	6.7
Asteraceae (Lactuceae) undif.	15.4	22.2	6.7
Chenopodiaceae	7.7	0.0	0.0
Brassicaceae	0.0	0.0	6.7
Plantago lanceolata type	0.0	0.0	6.7
Pteropsida (monolete) undif.	23.1	11.1	13.3
Pteropsida (trilete) undif.	0.0	5.6	0.0
Sum trees	0.0	0.0	6.7
Sum shrubs	7.7	5.6	6.7
Sum herbs	69.2	77.8	73.3
Sum spores	23.1	16.7	13.3
Main Sum	13	18	15
Concentration (grains per ml)	**1578**	**2786**	**1722**

Table 1 Percentage pollen data from Stow-cum-Quy

Stow-cum-Quy Sections AB & 2

The pollen spectrum from TR1 Section AB 21cm (ctx 103) was dominated by grass (Poaceae), with fern spores and pollen of the Asteraceae. This over-representation of resistant pollen and spore types is the classic signal indicative of post-depositional oxidation of palynomorphs in the soil. Pollen of hazel (*Corylus*) and the fat-hen family (Chenopodiaceae) was also present. The pollen assemblage from TR1 Section AB 55cm (ctx 101) was almost identical to the previous sample, showing the same signal of microbial breakdown of pollen in the soil. The basal sample from 5cm (ctx 200a) in TR2 Section 2, had a pollen assemblage dominated by cereals, with grass, herbs and spores. The proportion of spores and Asteraceae pollen in this sample was not particularly large, but the low concentration and species richness still indicate considerable destruction of pollen by oxidation in the soil. The presence of pollen of pine, hazel and herbs such as strapwort plantain (*Plantago lanceolata*) are also notable.

Discussion & Conclusions

It is quite difficult to draw a positive conclusion from this somewhat unsuccessful attempt to extract pollen from unpromising and oxidised sediments. The two samples from TR1 Section AB have a signal that probably indicates open meadow-like environments rather than closed woodland. This is an important observation, since the site at Stow-cum-Quy is situated at the top of a low gravelly ridge, and the sediments contained worked flint. The basal sample from TR2 Section 2 clearly contained cereal and arable weed pollen, as well as evidence of open meadows. It is important not to attempt to over-interpret such a sparse and depauperate assemblage, although it seems that all the samples with pollen are probably post-clearance, and that from TR2 shows evidence of arable activity nearby. The earliest that it would seem reasonable to invoke woodland clearance at this site would be the late Neolithic, or more likely Bronze Age.

Drawing Conventions

Sections

Limit of Excavation

Cut

Cut-Conjectured

Deposit Horizon

Deposit Horizon - Conjectured

Intrusion/Truncation

Top Surface/Top of Natural

Break in Section/
Limit of Section Drawing

Natural Deposit

Cut Number **118**

Deposit Number 117

Ordnance Datum 18.45m OD

Inclusions

Plans

Limit of Excavation

Deposit - Conjectured

Natural Features

Sondages/Machine Strip

Intrusion/Truncation

Illustrated Section S.14

Archaeological Deposit

Excavated Slot

Natural Deposit

Root Disturbance

Chalk

Cut Number **118**

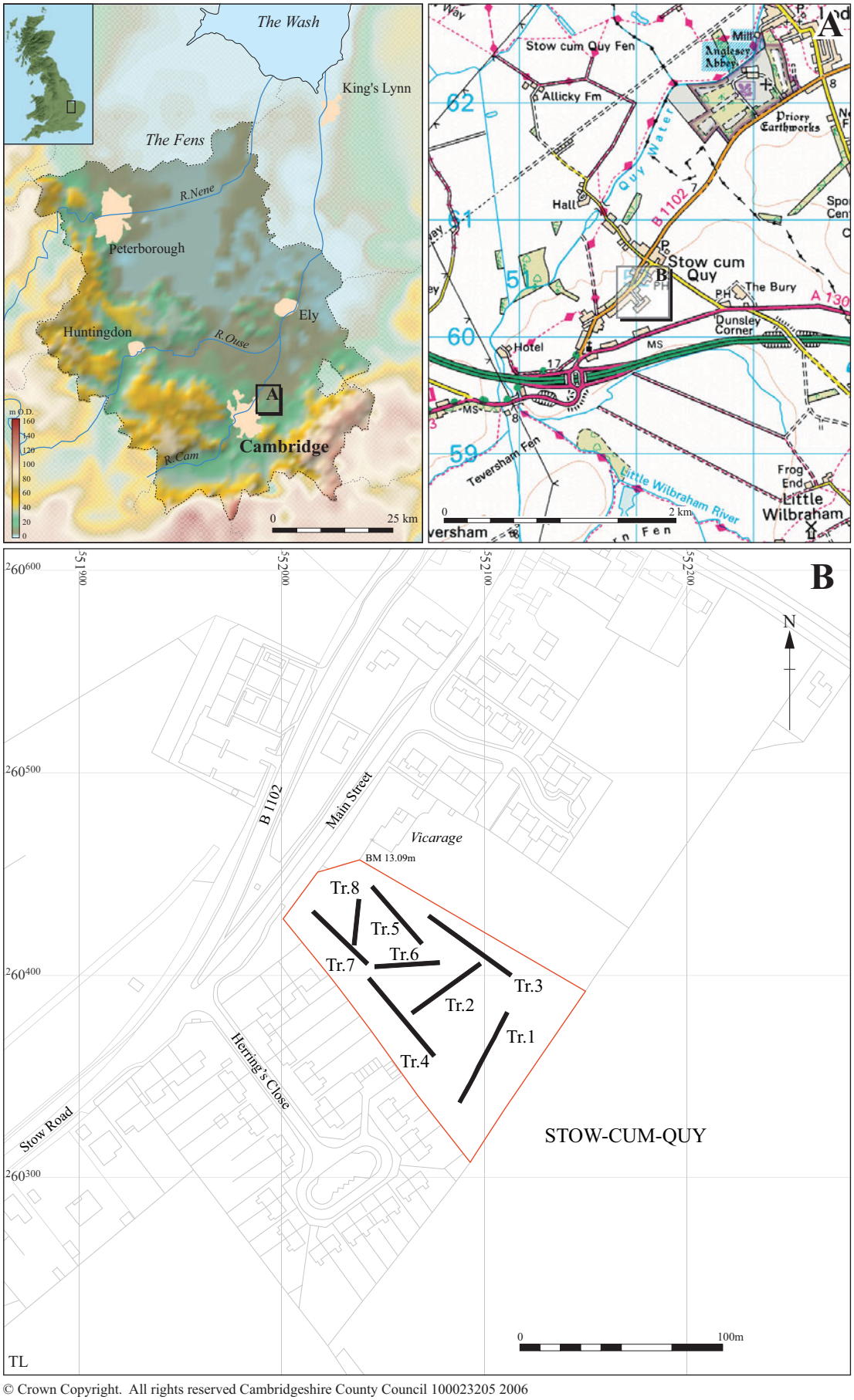


Figure 1: Location of trenches (black) with the development area outlined (red)

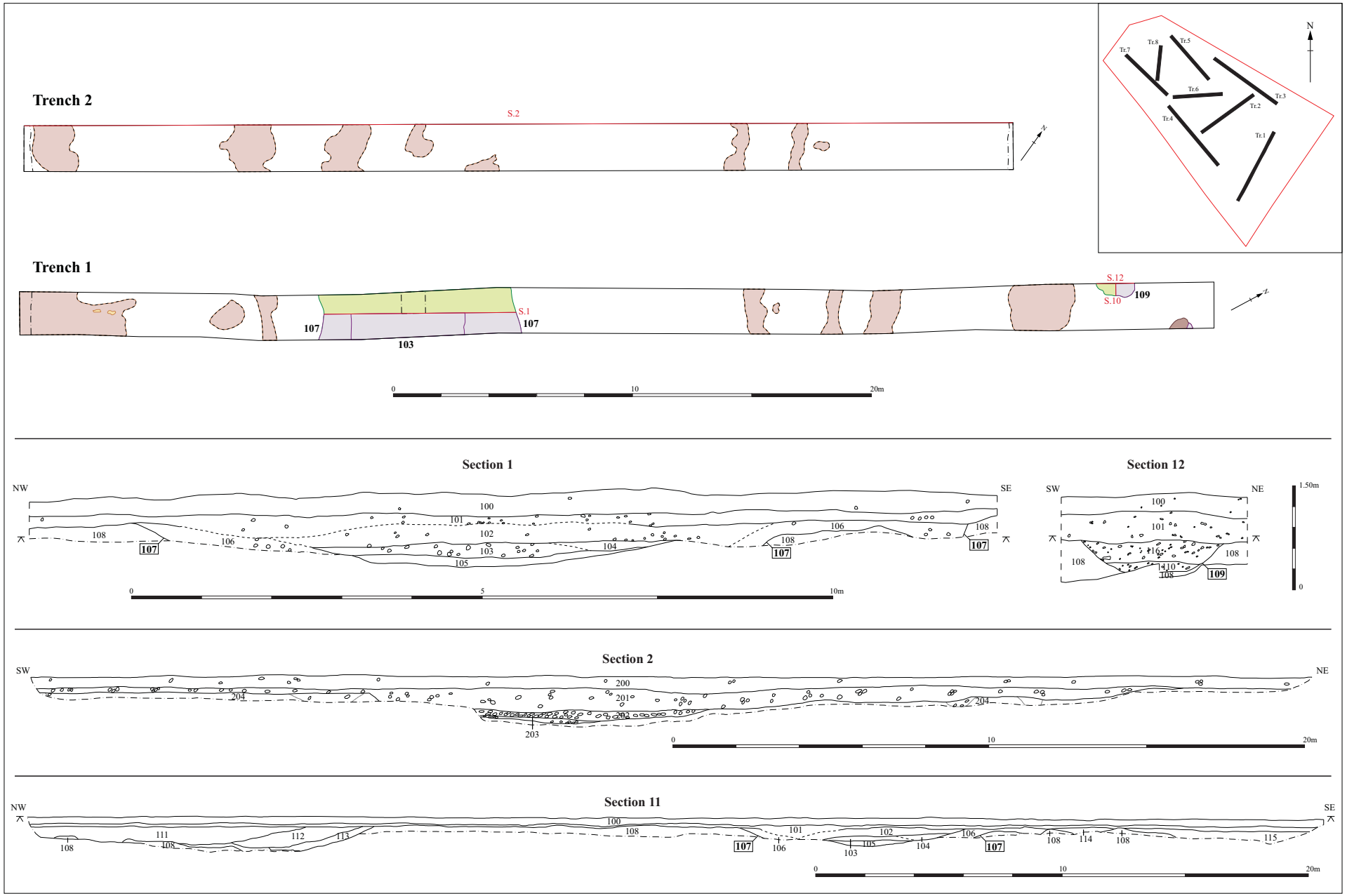


Figure 2: Trench plans and section drawings

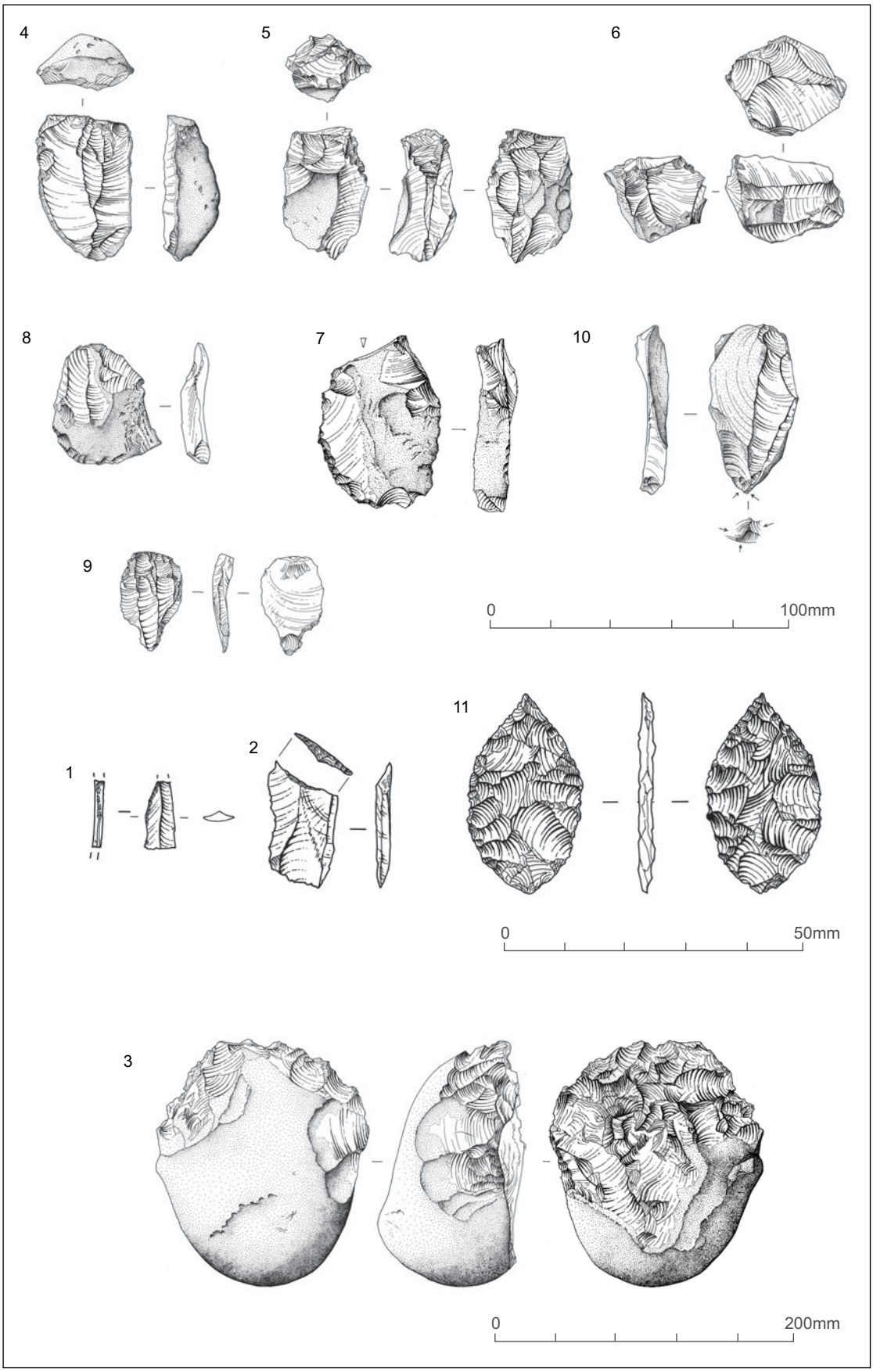


Figure 4: Flint SF numbers 1-11

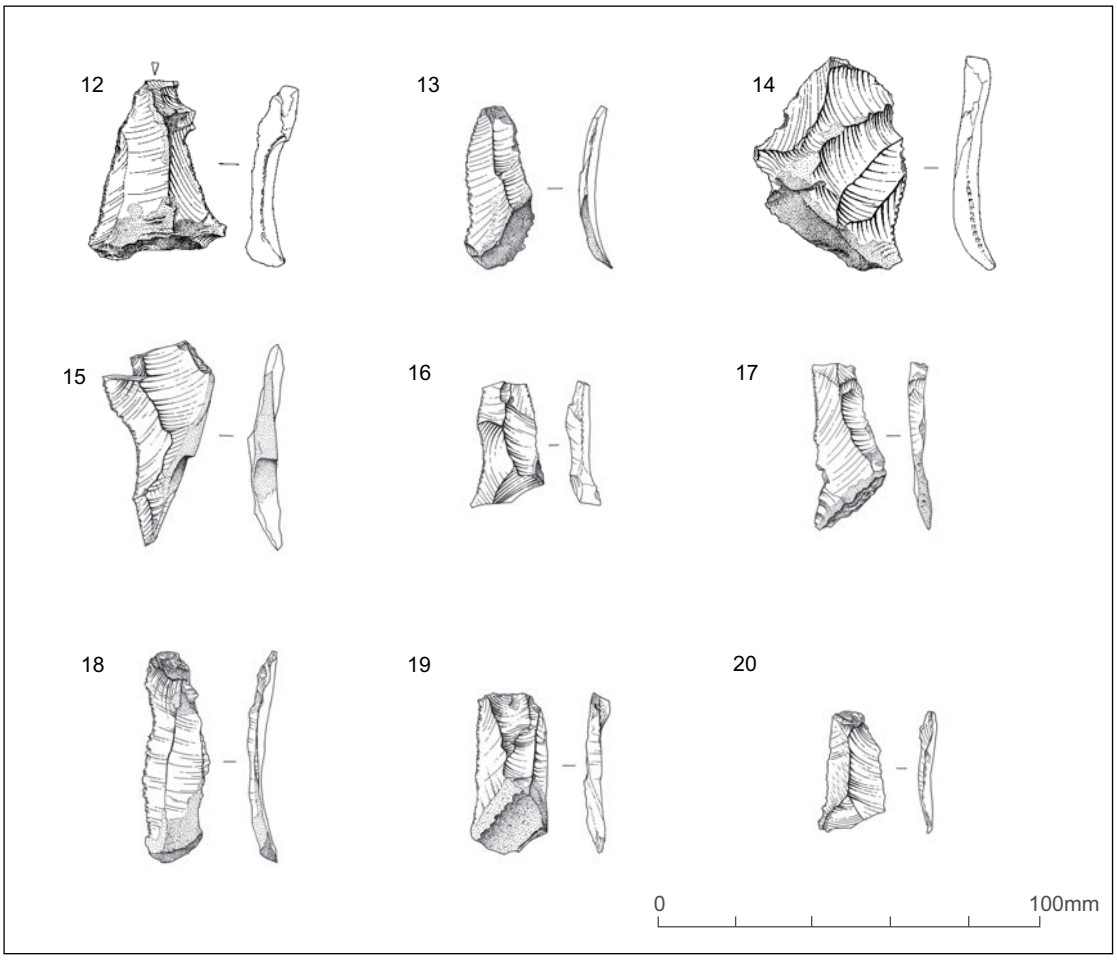
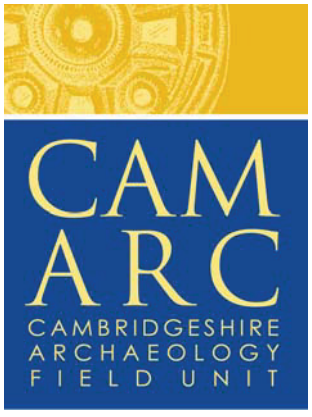


Figure 5: Flint SF numbers 12-20



CAM ARC,
Cambridgeshire County Council,
15 Trafalgar Way,
Bar Hill,
Cambridgeshire,
CB3 8SQ

General Enquiries: 01954-204191
Fax: 01954-273376

http://www.cambridgeshire.gov.uk/archaeology