Further Archaeological Investigations at the Heathfields Estate near Duxford Airfield Cambridgeshire

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Non Technical Summary

Mitigation excavation was carried out on land adjoining the Heathfields Estate, near Duxford Airfield, Cambridgeshire. Previous evaluation work had revealed a low background density of flint with a concentration of worked and burnt pieces at the north-west end of the field. This spread appeared to have been cut by a later Neolithic pit filled with highly decorated sherds of pottery derived from six or seven vessels. An unrelated large linear ditch, was located running roughly east-west across the south-western corner of the site. This feature could not be firmly dated.

The second phase of excavation revealed that the flint spread and feature were concentrated around a natural feature, probably a solution hollow, which had served as a source of raw lithic material and a focus for the primary reduction of that material from at least the early Neolithic. Similar activity had taken place in the later Neolithic. The spread of pottery around the pit already found suggested either domestic or middening activity around the same natural feature. Parallels were drawn with similar discoveries at nearby sites.

The large linear ditch produced some dating evidence. This suggested that the feature was certainly pre-conquest. The probable date was narrowed down to the Roman or Saxon periods, but ambiguity in identification of the pottery types meant a determination could not be made between the two.

In the course of investigating the line of the ditch the discovery was made of a large subterranean structure dating to the end of the Second World War or shortly afterwards. The feature was probably an air-raid shelter.

The excavation confirmed the importance of the general Duxford Airfield area in a rich archaeological landscape which records several periods.

Introduction

A programme of archaeological evaluation was commissioned by the clients of Cowper Griffith Brimblecombe Associates prior to the redevelopment of land at Heathfields, Duxford, Cambridgeshire (Figure 1, centred on NGR TL455 463). Initial fieldwork was carried out by the Cambridge Archaeological Unit (CAU) in the middle of March 1997 (see summary below). The localised concentration of worked flint and sherds of prehistoric pottery around a small pit to the north of the field and the discovery of a large unrelated ditch to the south prompted further investigation to mitigate the archaeology in order to satisfy the planning requirements.

Site Description

The evaluation area is a little under 2 ha. and lies to the east of the M11 and approximately 150m to the north of the A505 (figure 2). The Heathfields estate backs onto the south and west of the site, and the residential zone of Duxford Airfield is immediately to the east. Whilst the land directly to the north is arable, the site itself has been under grass for many years. The site was formerly owned by the MOD and was part of the Duxford Airfield residential zone. It is known that by 1939 two H-block barracks were situated in the northern part of the site and that these were only demolished in the mid 1970s, having been vandalised (one was badly damaged by fire) after the land was sold.

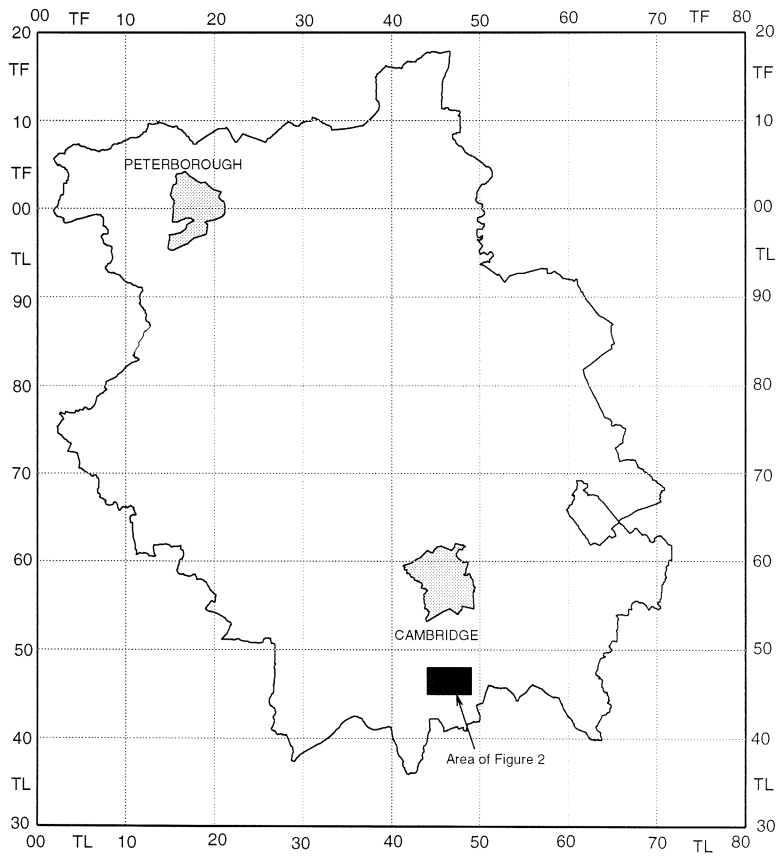

Figure 1 Location of Site in Cambridgeshire

The ground is generally fairly flat, lying at *c.* 28m OD, sloping slightly upwards to the north. The underlying geology is middle chalk.

Archaeological background

A detailed desktop study (produced as part of an assessment of the wider landscape) describes in detail specific sites recorded in the vicinity of the evaluation area (Dickens 1995) and is discussed in the earlier report on this stage of work (Dodwell 1997). Prehistoric activity in the immediate area of the site is represented both by stray finds of flint and pottery and flint scatters. The site lies close to the ancient trackway, the Icknield Way, one route of this major east-west braided trackway is now broadly occupied by the A505 to the south of the site (Fox 1923:143-147). Scatters of Roman pottery and a villa complex have been recorded to the immediate north of the site. Cropmarks associated with the villa (SAM 255) extend to the north and south, but none are visible in the immediate vicinity of the evaluation area.

The initial phase of fieldwork revealed a low background density of flint, with a concentration of worked and burnt pieces at the north-west end of the field. This spread appeared to have been cut by a later Neolithic pit filled with decorated sherds of pottery derived from six or seven vessels. A large linear ditch, running roughly east-west across the south-western corner of the site, was located in two of the test pits. No dateable material, other than a small number of undiagnostic flints, was recovered from the feature leaving its date uncertain. Comparison with similar features elsewhere may suggest that it pre-dates the medieval period. The potential importance of these two elements prompted the request for further investigation to better understand their character and place in the general landscape.

Several brick foundations and services were also revealed. These related to part of the domestic area of the Airfield, demolished in the 1970s.

Method of Investigation

The mitigation programme was designed to deal with two separate and quite different archaeological questions: firstly the nature and extent of the finds scatter around F.1 in the north of the field and secondly the character, orientation and date of the large ditch to the south. These two question will be considered separately. Excavated features were planned at 1:20 and sections drawn at 1:10. Both black and white record photographs and colour slides were taken. As in the evaluation phase of this project the recording followed the CAU adapted version of the Museum of London system. Context numbers (e.g. [001] in the text) and feature numbers (F.1) follow on directly from the evaluation phase. All features observed including modern features were recorded.

Figure 2 Location of Site

Flint Scatter and Feature F.1

In order to determine the nature and extent of the flint scatter, its relationship to the Neolithic pit (F.1) and to investigate the presence of any associated features, an area (Area 1) *c.* 15m x 15m was investigated, with the known feature approximately at its centre. The topsoil of this area was removed by machine to expose the upper surface of the sub-soil([evaluation context [010], now [013], see below). A series of two bucket (30 litre) samples were taken at five metre intervals at this level (sixteen samples in total). These were carefully hand-sorted for finds recovery. Approximately half the depth (*c.* 0.10m) of the sub-soil was removed by the machine and the sampling procedure repeated at the lower depth [014]. The purpose of the sampling programme was to track the distribution of finds around F.1 both horizontally and vertically. The level of the area was then further reduced by machine to the level at which the Neolithic pit had been observed in the assessment phase. Because the depth of the subsoil varied across the area, however, in some places the base of the second spit coincided with the level of natural.

In addition to finds retrieved from the controlled sampling, the soil removed during the machining of the spits was hand sorted for finds recovery and

Figure 3 Excavation areas in relationship to the evaluation trenches

their approximate position in relation to F.1 recorded.

The Ditch F.2

A double width trench (Area 2; *c.* 3m wide) was machined at right angles to the line of ditch between former Test Pits 6 and 3, down to the level of the natural. In order that any evidence of a bank, berm or other associated features could be seen, the trench was extended approximately five metres either side of the ditch edge. A one metre wide slot was excavated by hand. To increase the potential of recovering dateable artefacts from the ditch a further trench (Area 3; *c.* 1.5m wide) was machined to the level of the natural, again at right angles to the ditch between Test Pit 3 and the double width ditch. The ditch fills were excavated by hand. To confirm the alignment of the ditch two further small trenches (Areas 4 and 5) further trench were machine excavated to the east of Test Pit 3 towards the edge of the site.

Results

Area 1

Sampling Programme

Finds recovered from the bucket sampling are summarised in Appendix 1. A total of one hundred and fifty struck flints were recovered (one hundred and twenty-one from [013] and twenty-nine from [014]), fourteen burnt flints (seven from [013] one of which is worked and seven from [014]) four of which are worked. A total of ninety-five grammes of later Neolithic pot, a mixture of sherds and crumbs, were recovered from [013], twenty-one grammes of crumbs from [014]. No pottery was recovered in the 30 litre samples at either level.

Features

Two post holes (F.4 and F.5) were recorded in the north east of the area. Both were visible once the upper spit of subsoil [013] had been removed, at approximately the same level to which F.1 had been truncated (27.05m OD).

Feature Descriptions

F.4 (post hole)
015, 016

Fill [016]; moderately compact, mid grey brown sandy silt with occasional small to medium gravel pebbles and frequent small and medium (>50mm) chalk fragments. One decorated pottery sherd and one worked flint.
Cut [015]; a shallow sub-circular, 0.14x 0.16m wide and 0.15m deep; sides smooth and steep, 80°, U-shaped profile, break of slope at base is gentle, base slightly concave. Lower part cuts natural chalk

F.5 (post hole)
017, 018

Fill [018]; moderately compact mid brown orange sandy silt with occasional small and medium flint pebbles and moderate small and medium chalk fragments which increase in frequency towards the base. A single small flint chip was recovered).
Cut [017]; a shallow sub-square cut, 0.25m wide and 0.15m deep; sides smooth and steep, 70°, U-shaped profile, gentle break of slope at base, base slightly concave

F. 3
A large natural (solution?) hollow was recorded in the central part of the area. Despite having a distinct north eastern edge where it 'cut' the chalk the other

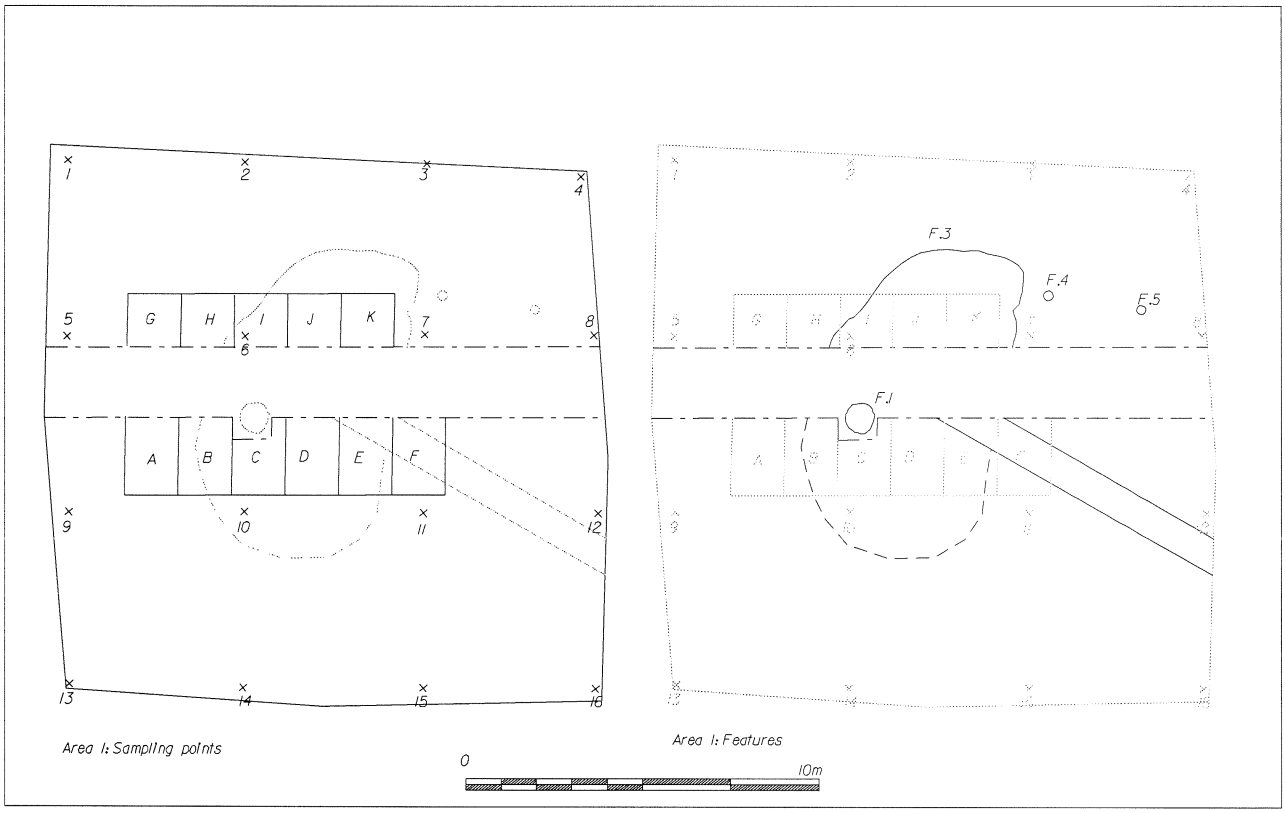

Figure 4 Area 1 Sampling points and features

'edges' were impossible to define. The cut or depression was filled with a moderately compact red brown sandy silt [030]. It was very clean with rare small stones and chalk flecks. Three small sherds of later Neolithic pottery were recovered. The sides of the 'cut' sloped at c. 50° although the edges were very irregular and pitted. The maximum depth was 0.33m

Modern Feature
A 1m slot was excavated through a modern ditch, aligned northwest-southeast and containing barbed wire, tarmac, glass bottle fragments and plastic. The ditch was 1.10m deep from where the cut was first observed just beneath the topsoil. No context numbers were allocated to this feature because of its modernity. It was excavated primarily to examine the character of the underlying natural. The sections through the natural confirmed the

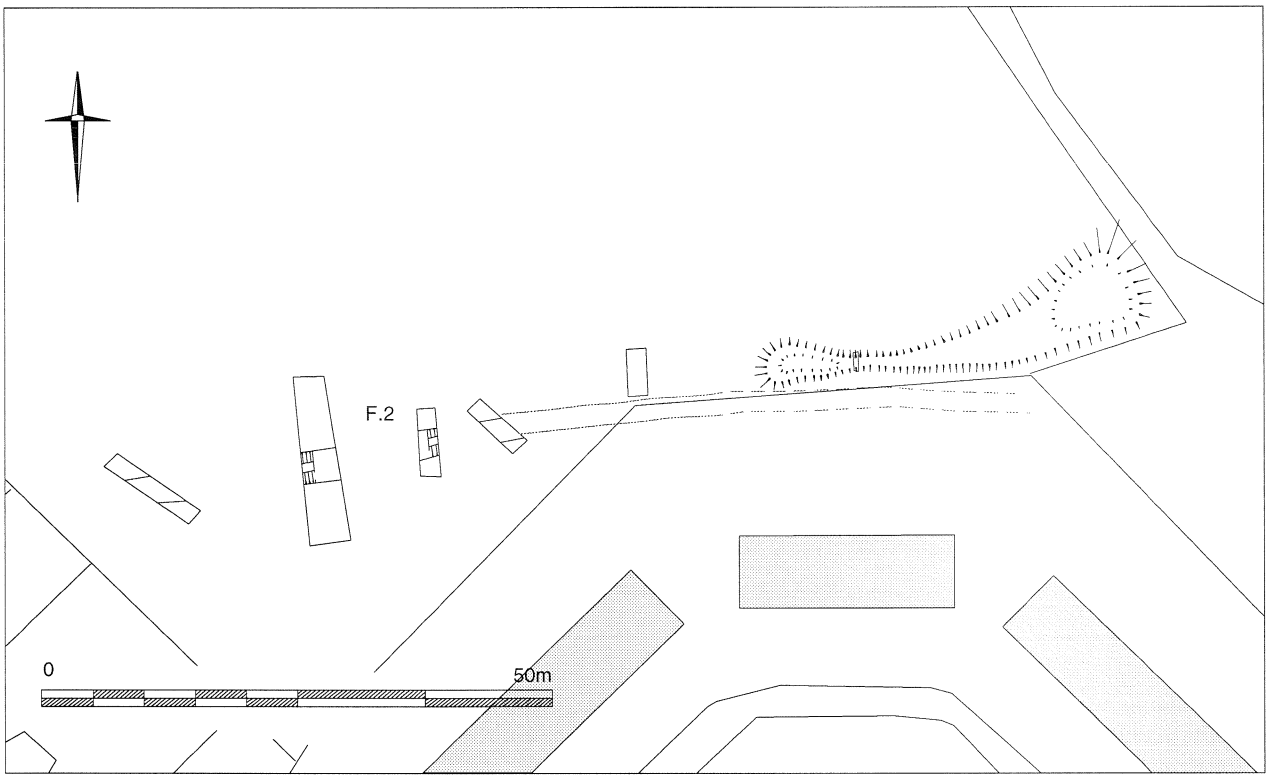

Figure 5 Projected line of ditch F.2

diverse nature of the natural which was noted in the earlier evaluation phase. Below the subsoil a deposit of loose rubbly probably coombe chalk overlay a band of compact, bright yellow sand with occasional chalk inclusions, which in turn sealed a clean, very compact chalk. Bands and patches of soft, marl /degraded chalk were also recorded above the yellow sand.

Areas 2, 3, 4 and 5

The Southern Ditch

A large linear ditch, aligned almost due east-west in the southern part of the site. This ditch was discovered in Test Pits 3 and 6 during the evaluation phase of the project but no dateable finds were recovered at that stage.

Two new trenches (Areas 2 and 3) were machined at right angles to the projected ditch line. The cuts and their fills were similar to each other and to the two previous slots (Dodwell 1997: 9-11).

Area 2

019, 020, 021, 022, 023, 024, 025, 026

Fill [019]; upper fill of ditch extending over the edges of the cut. A mid brown clay silt matrix with occasional small stones and small chalk fragments, flecks of charcoal. A concentration of

chalk fragments in the north which may represent the collapse of a bank. Maximum depth of 0.9m, base sloping towards the centre of the ditch

Fill [020]; moderately compact, pale orange brown clay silt with moderate fragments of chalk. Maximum depth of 0.30m, confined to the south of the feature and is slumped down towards the centre of the ditch.

Fill [021]; uncompacted, mid brown, sandy silt with occasional chalk fragments and charcoal flecking and rare small and medium stones. Maximum depth of 0..35m and only recorded in the centre of the ditch. Possibly the same as [038] in Area 3

Fill [022]; fine clay silt as [021] but a lighter brown with slightly more chalk. Occasional charcoal flecks. In north of ditch.

Fill [023];light - mid brown clay silt with a high clay content and c. 10% chalk inclusions. Also contained large piece of sandstone c. 0.20m in dia. Occasional charcoal. Flint core and blades recovered.

Fill [024];deep mid brown clay silt with a high clay content. Few stones, 5 - 10%, occasional charcoal flecks. Flint core, blade and burnt flint.

Fill [025]; light brown clay silt with much degraded chalk.

Cut [026];wide flat bases broadly V-profile of linear F.2, cut into natural chalk and sand. Edges are generally gentle but quite uneven. Width at top of natural 3.40m, depth 1.50m.

Area 3

027, 028, 029, 031, 032, 033, 034, 035, 036, 037, 038, 039

Fill [031]; clean mid brown orange sandy silt with occasional small fragments of chalk. Maximum depth of 0.20m. Confined to the southern part of section, cut on its south by a modern intrusion/disturbance

Fill [027]; pale creamy white. moderately compact chalky silt with occasional rounded flint pebbles, occasional fragments of bitumen and frequent chalk inclusions. Becoming more mixed and silty towards the top. Maximum depth of 0.50m. Could represent collapsed bank material. If the recut [029] is genuine then this is its primary fill. Sherd of pottery

Recut [029]; possible recut of ditch. Also aligned approximately east to west, 2.30m wide at top, 0.65m at base and 0.52m deep. Both sides slope steeply, *c.* 60°, although the southern side steps in and flattens out for 0.65m before sloping down gently to the true base.

Fill [032];pale creamy yellow sandy silt, moderately compact with occasional chalk inclusions. Similar to [036] except with fewer inclusions. Maximum depth of 0.30m, only 0.50m north to south, is confined to the northern part of the cut, is truncated by the recut [029], slopes down towards the centre of the cut.

Fill [033]; compact, pale creamy white silty chalk with moderate chalk inclusion (fewer than [027]), confined to the centre of the ditch, maximum depth of 0.18m, truncated by recut [029].

Fill [034]; mid brown, clean, moderately compact silt with occasional small chalk fragments and small stones. Maximum depth of 0.30m, confined to the southern side of the ditch, slopes down towards the centre of the cut, truncated to the north by modern intrusion and recut [029].

Fill [028]; mid orange brown, sandy silt with occasional chalk fragments and rare small and medium stones. Very soft and uncompacted especially towards the southern edge where the

deposit becomes darker and siltier with more frequent inclusions. Maximum depth of 0.40m and 2.50m wide. Slopes down towards the centre of the ditch. Pottery rim sherd and worked flint. Possibly the same as [021] in Area 2.

Fill [035]; mid creamy brown compact, sandy silt with frequent small fragments of chalk and moderate medium size rounded pebbles. Maximum depth of 60mm and confined to the centre of the ditch. Pottery rim sherd found at interface with [037].

Fill [036]; pale creamy yellow sandy silt with frequent small and medium chalk fragments. Basal fill located on the northern side of the ditch, sloping down towards centre of feature with a maximum depth of 0.25m.

Fill [037]; soft, pale yellow clayey silt with rare small chalk fragments. Maximum depth of 0.20m, concentrated in the south of the ditch, sloping down towards centre, basal fill.

Fill [038]; soft, grey white marl, degraded chalk. Very smooth, maximum depth of 0.10m, restricted to upper part of southern edge. Possibly same as [021] in Area 2.

Cut [039]; linear cut aligned approximately east to west, 3.50m wide at top sloping to width of 0.60m at its base and 1.00m deep. The base is slightly uneven but basically flat. The sides of the cut slope at *c.* 60°.

Two further slots were cut to the east to check the alignment of the ditch. The furthest east of these (Area 5), across a mound presumed to consist of demolition material, uncovered a subterranean construction of galvanised corrugated metal and wood (see below Subterranean Structure). The second (Area 4), machined almost up to the fence line, revealed no trace of the ditch suggesting that it was outside the field by this point. This slight curve, back towards the road, is consistent with the line of the feature visible in the 1918 aerial photograph.

The section in Area 2 revealed no obvious signs of any surviving bank or other associated features either north or south of the ditch line.

Subterranean Structure

The machine excavated trench opened to the east of the site to check the continuation and alignment of the ditch (Area 5) exposed a subterranean structure, possibly an air-raid shelter or military store. This may partially truncate the northern edge of the large ditch (F.2), but does not coincide with its alignment as the ditch curves gradually round to the south. The mound covering this modern feature was surveyed (Figure 6) and the interior of the structure investigated and recorded within the limits determined by safety considerations.

Description

Precise measurements of the length of the structure could not be made as in places the roof had collapsed and large quantities of rubble had been pushed in from each end. The mound, however, was approximately 50m in length and was aligned SE-NW, bending slightly to the north at its western end. The height of the mound above the present ground surface ranged from 0.83m to

1.22m. At the eastern end of the mound were large broken blocks of concrete, which may originally have been part of an entranceway.

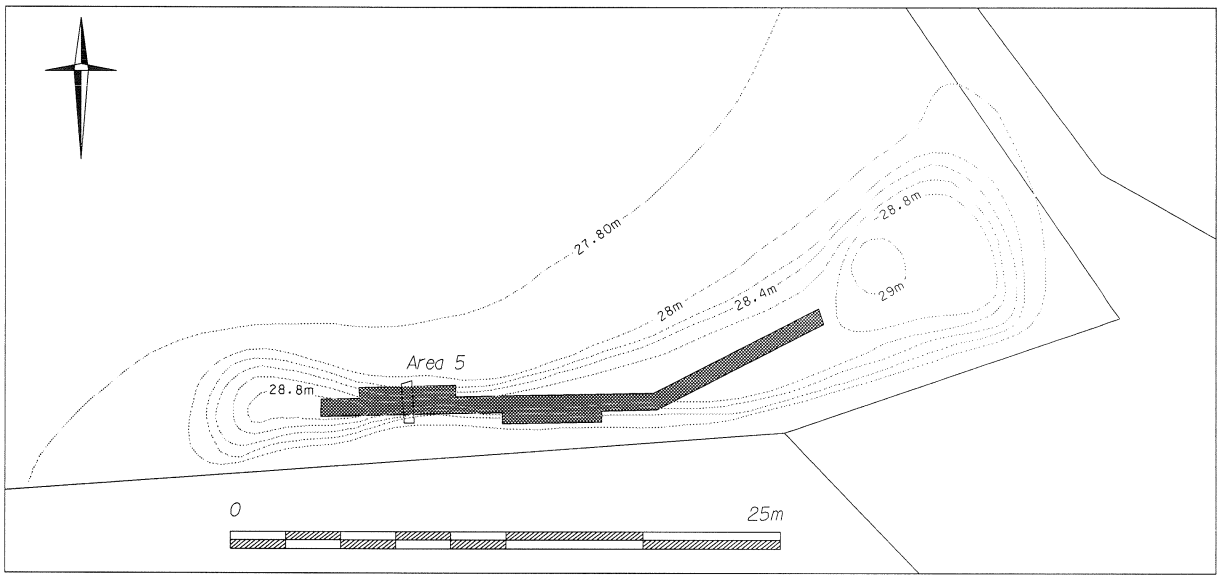

Figure 6 Contour survey of mound showing position of shelter

A brief investigation of the structure below the mound showed it to be constructed of galvanised corrugated sheet metal attached to a framework of wooden posts (see Figure 9). Approximately 0.60m of mound material (moderately loose, dark grey brown sandy silt) covered the sheet metal roof of the structure whilst the compacted earth 'floor' lay 2.15m below the roof. The width was only 0.82m although there were recesses 0.50m deep and 4.50m long on alternating sides of the 'tunnel', perhaps benches or storage areas. Horizontal beams, giving the impression of 'rails' ran along the floor of the structure at the base of the upright posts. Their proximity to the walls, however, suggests that they were structural, although they may have carried duck-board flooring. The structure may have narrowed and become shallower towards east, though this could not be determined. The roof had partially collapsed in places with much of the rubble appearing to have been pushed in from the original entrance at the eastern end. Rusted metal debris, including an ammunition box date stamped 1953 were observed, and a number of children's toys, including a plastic tank, ball and matchbox cars with the dates 1975 and 1976 stamped on them were recovered.

Discussion

Flint Scatter

The results from Area 1 show a moderately high concentration of flint and prehistoric pottery in the vicinity of the pit, F.1 as was anticipated. It is now apparent, however, that F.1 itself lies within a larger feature of natural origin, F.3. Although not exclusively enclosed within the boundary of F.3 the density

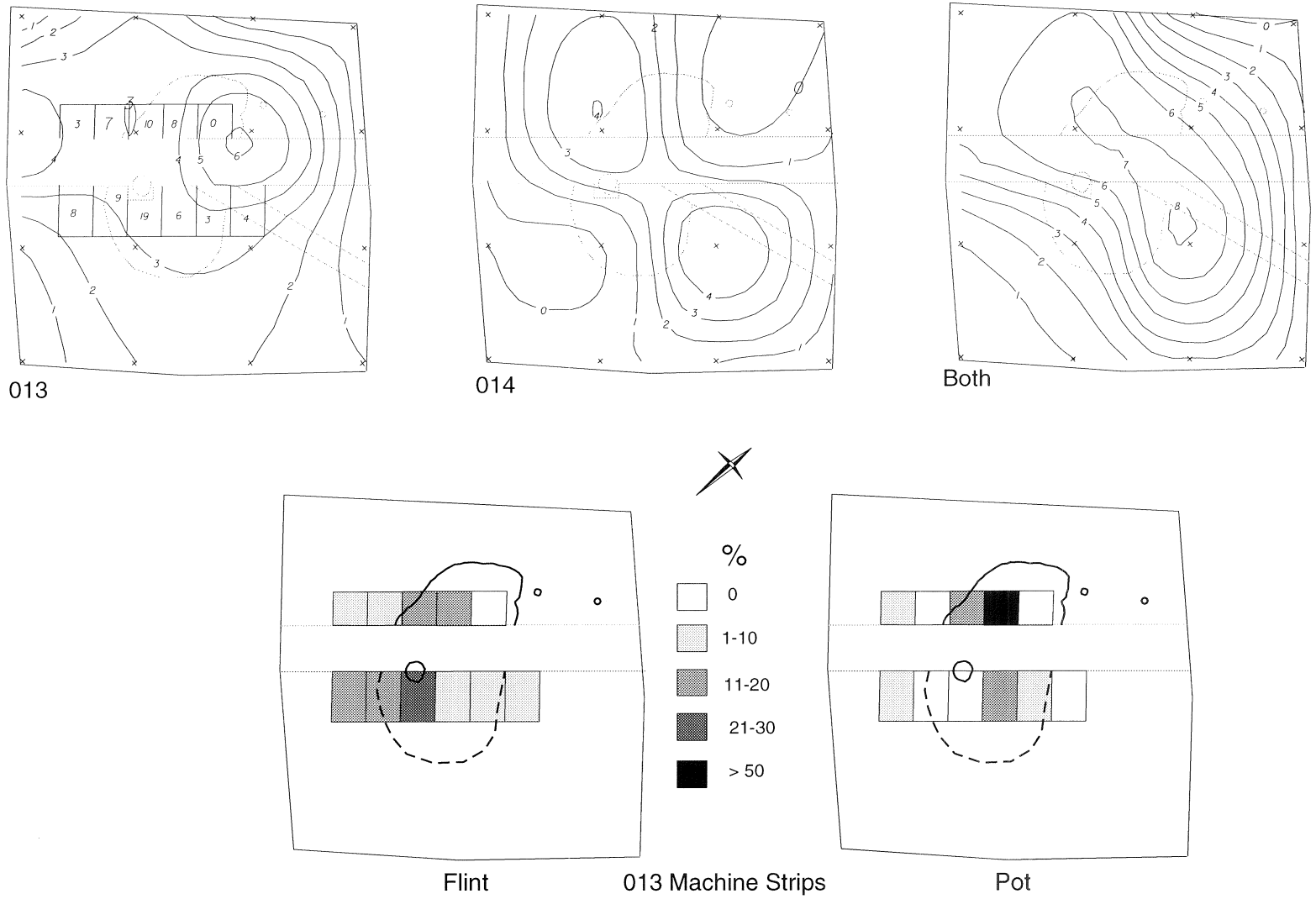

Figure 7 Distribution of flint and pottery in sample spits [013] and [014]

of flint declines markedly with distance from it. Use of natural features in the landscape is well attested in the general area. At the nearby site at Hunt's Road, immediately east of the M11, Evan's describes a feature he calls the "Great Hollow" (Evans 1991: 4-11; 29-31). This feature was rather larger than that at Heathfields, some 22m across and 0.50 - 0.90m deep. It was filled with mid brown/grey clay silts, the base was chalk interbedded with clay and flints. The discussion concluded that it was a feature of natural origin enhanced by human activity related to the procurement of flint. Much of the worked flint recovered related to the procurement and initial production of cores suggesting that flint working must be taking place in the immediate vicinity, either in hollow itself or close enough nearby to have weathered into it. Analysis of the flint from Heathfields (White, Appendix 2), whilst mostly later than the Early Neolithic date suggested for the Hunt's Road material, is similar in terms of the phase of reduction that is reflected. Most of the Heathfields flint is the result of primary reduction, suggesting that the hollow served as a source of raw material or a place in and around which primary reduction was carried out. The early Neolithic element in the assemblage suggests that at least at the outset this activity was broadly contemporary with that at Hunt's Road. Most of the Heathfields flint, however, dates to the later Neolithic or Early Bronze Age and is again broadly contemporary with the pottery assemblage (Appendix 3). This suggests that whilst the early attraction of the hollow as a source of raw material remained, the area was also the focus of other activity which resulted in the deposition of the pottery in and around the pit F.1. This may have been middening or more general domestic activity. The use of natural features as a focus for middening was observed at Hinxton Quarry, some three kilometres east of the Heathfields site, where a tree-throw produced a substantial assemblage of earlier Neolithic pottery and worked flint (Mortimer & Evans 1996). In that case, however, the worked flint represented all stages of working, a typical domestic assemblage, suggesting that it was part of the midden material rather than created *in situ*. as seems to be the case at Heathfields. If the pottery assemblage at Heathfields is interpreted to be associated with general middening activity then there is no necessity to explain the distribution around F.1 by presuming severe truncation of the earlier land surface by later activity. That some truncation has occurred is evident, but the spread of pottery around the feature does not need to originate from the pit itself if a middening spread is accepted. It is probable that the pit and the middening activity are contemporary though whether both are part of the same activity is debatable.

In summary the natural feature, probably a solution hollow, acted as an attractor in the landscape from at least the earlier Neolithic providing an easy and ready source of raw material for flint working. The lesser occurrence of early material suggests, however, that it as not heavily exploited. In the later Neolithic and perhaps Early Bronze Age it played much the same role, a raw material source and the focus of primary reduction activity. Ultimately this use was superseded by either general domestic or middening activity during which pottery was lost or discarded and at least one pit was dug, perhaps associated with the two small post holes. Other investigations in the wider

landscape show that this usage of natural features was not uncommon at different times in prehistory. The known spread of material dating from at least the earlier Neolithic to the Roman period that has been recorded in the fields immediately surrounding the Heathfields site (Dickens 1995) indicate a rich archaeological landscape in which the evidence has survived despite centuries of intensive agricultural activity.

Southern Ditch

Several possibilities for the origins and purpose of the large southern ditch were discussed at length in the evaluation report (Dodwell 1997: 13-15). In essence those discussions remain similar now, though are better informed in terms of form and dating evidence from the additional excavation. There now seems little doubt that the ditch revealed by excavation is the same feature as that shown on a single aerial photograph taken of Duxford air base shortly before its completion in July 1918 (Bowyer 1987: 64; RAF Museum Ref. no P3735). A broad pale line curves across the picture, taken from the west of the airfield, crossing the area of the investigation, at that time under arable or flower cultivation. No continuation of the feature is apparent to the east beyond the airfield, but the photograph is very oblique and the copies of it seen are not very clear. Unfortunately, as noted in the earlier report, this does not help to date the ditch, although it does indicate that it was completely ploughed out by 1918.

Four likely interpretations remain, the probabilities having varied slightly with the new artefact evidence:

Prehistoric

There is no immediately apparent context in the landscape in which to place a prehistoric feature of this scale. That the main category of artefact recovered from the fills was struck flint has little bearing on dating arguments as the evaluation demonstrated a 'background noise' of flint in the top and subsoil. This material would become incorporated in the fill of any large feature regardless of when it was constructed. As mentioned in the evaluation report the ditch does bear a passing resemblance to broadly similar features of an Iron Age date excavated at Haddenham (C. Evans pers comm) to the north of Cambridge. There is, however, no evidence within or around the ditch to support such an interpretation at this stage.

Roman

A Roman date for the feature has always been a possibility given the proximity of the villa complex (SAM 255) 1.1km to the north. Perhaps the simplest interpretation for the ditch is that it was a boundary ditch of the villa estate . A Roman rim sherd was recovered from context [035], towards the base of the Area 3 ditch section. This cannot be considered conclusive dating evidence but is significant given the general scarcity of material in the ditch as a whole. The question still remains open as to precisely what it was Neville

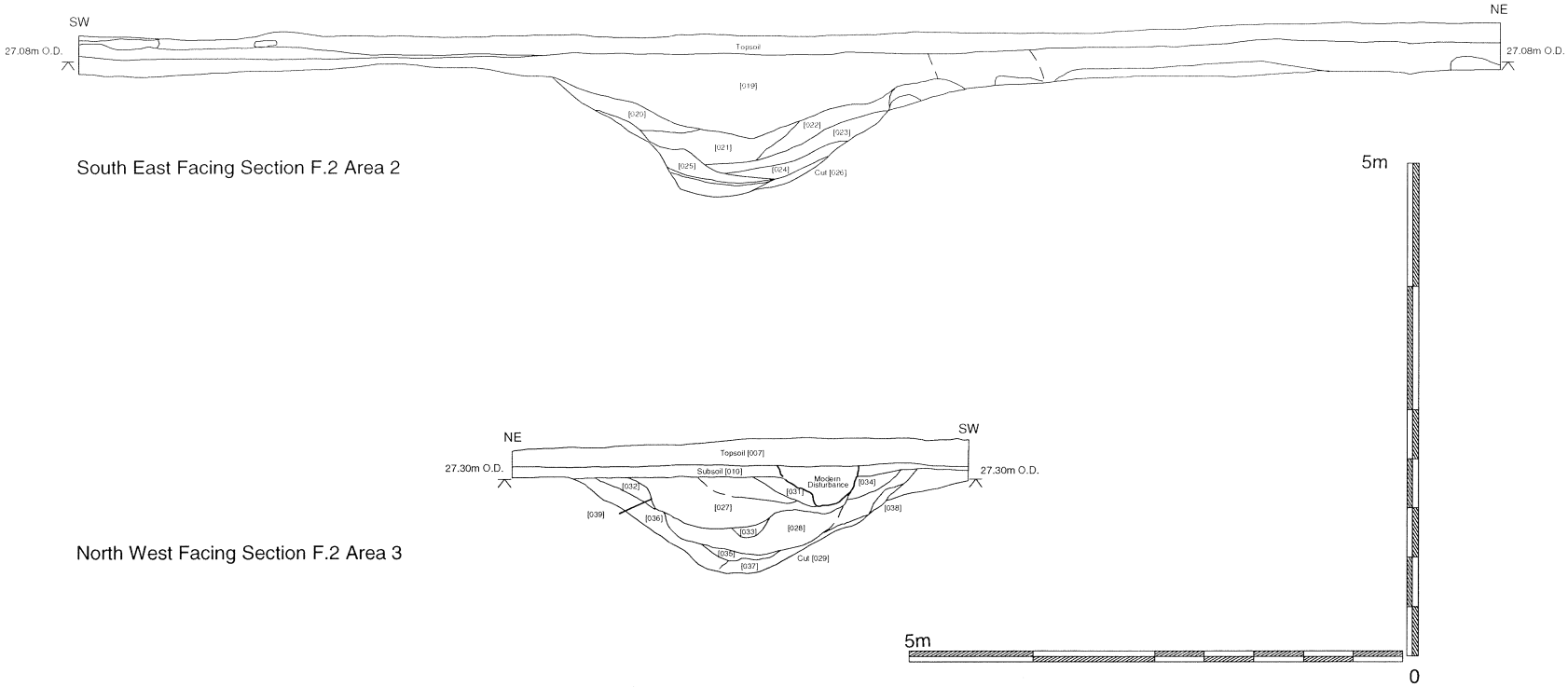

Figure 8 Feature 2 sections

was referring to in his reference to "a very Roman looking branch westwards to Triplow" in his discussion of Roman roads in Cambridgeshire in the Archaeological Journal of 1854. No other references to such a road have yet been found. An extension of the Duxford ditch eastwards and westwards would join the two villages of Duxford and Thriplow on the correct alignment. There is no question of the Duxford ditch being part of a road, but it may have been the feature to which Neville was referring although this must remain speculation.

Saxon/Saxo Norman

The possibility that the ditch was associated with the four, presumably Saxon, ditch and bank systems aligned roughly south-east to north-west across southern Cambridgeshire (Fox 1923, map 5), was considered in the evaluation report (Dodwell 1997: 13-15). Whilst the east-west alignment of F.2 differs to that of the Saxon dykes, sections excavated through the Bran's Ditch at Heydon Grange (White 1996) showed broadly similar dimensions, profiles and sequences of deposition. Whilst in all probability the resemblance is superficial, and the Duxford ditch is certainly of overall smaller dimensions than those recorded for the Bran's Ditch and others, a cross element in a system of ditches designed for control or defence is not improbable. A large moderately abraded rim sherd of possible pre-conquest date, was recovered from context [028], just above the Roman sherd from [035] (see above). This combination is a strong indicator that the ditch is pre-conquest in origin even if a more concrete dating is not possible.

Medieval/Post-medieval

It now seems unlikely that the ditch is medieval or later in its origin, although a sherd of 15th century pottery high in the section in context [027] does suggest that it remained open into the later medieval period (and later still if the Neville observation does refer to this feature, see above). One would tend to expect ditched field boundaries of a Medieval or post Medieval date to be far less monumental in size, with less sterile fills and a far greater number of artefacts. Apart from occasional intrusive elements, introduced by modern disturbance, nothing was found within the ditch which dated later than the 15th century. This strongly supports the proposal that the ditch is not a late arrival in the landscape.

In conclusion the mitigation work has provided more information about the ditch and, whilst a definitive interpretation cannot be made, it has allowed the elimination of certain possibilities which were under consideration. The ditch is unlikely to be prehistoric and is certainly not medieval or later in date. The evidence tends to indicate a date earlier than the Norman conquest but, given the sparse and ambiguous dating evidence, it is not possible to attribute it conclusively to the Roman or to the Saxon periods, but the probability is that it does belong to one of these

Subterranean Structure

The unexpected discovery of the metal and wooden subterranean structure at the south end of the field is a curiosity, but not of any great significance (Figure 9). If the concrete slabs at the eastern end are the remains of blast protection, then use as an air-raid shelter is a possibility. Plans of the site from the RAF Museum show nothing in that area up to 1944. Although the plans were top secret they are now declassified and do show air-raid shelters at other points on the site. This structure may then have a post-War date, certainly in place by 1953 if the stamp on the ammunition box can be taken as a guide, whether its function was storage, access, shelter or otherwise. Given a lack of any external evidence a definitive function for the structure remains difficult to determine, however its similarity (apart from scale) to the domestic Anderson shelter suggests that air-raid shelter remains the most probable explanation. The children's toys as an assemblage are typical of the mid 1970s

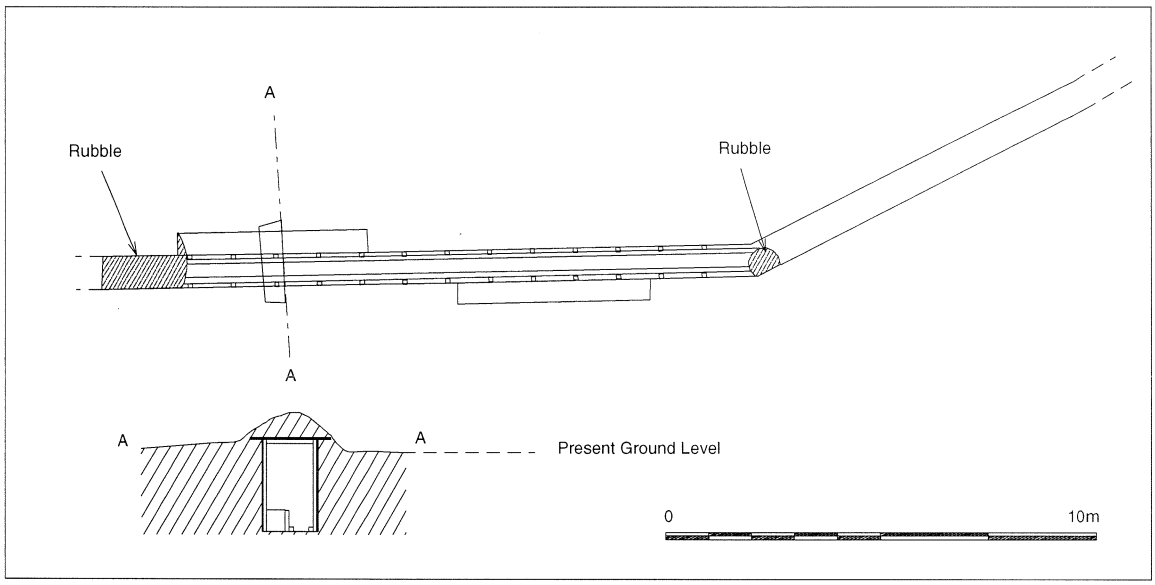

Figure 9 Plan and section of subterranean structure

and their introduction almost certainly took place at the time of the demolition of the surface buildings within the field. Presumably this structure was briefly accessible at that time but not before (other than in its 'legitimate' capacity) or since given the limited range of artefacts within it.

Conclusions

Investigations at the Heathfields site have given valuable information about the nature of one small area of a rich archaeological landscape, and demonstrated that even in such an intensively utilised area survival can be expected to be good. The flint and pottery spread around the solution hollow has added detail to the emerging picture of prehistoric activity in the surrounding area, a well used and important landscape. Surface evidence of this use in the form of surface material scatters increases to the north of the

site, so future development may allow further detail to be recovered and the wider picture better understood. The major ditch feature was an unexpected discovery. Whichever of the two main possibilities for its date are eventually shown to be most likely it is new information. If Roman it may indicate the boundary of a villa estate, something rarely, if ever, observed in Britain. If Saxon it may alter the perceived understanding of the north-south dyke system and consequently how the system worked and its purpose. The work has even discovered the modern unknown - an airfield structure not on the plans, an air-raid shelter apparently built after the war to which it use would have been most appropriate.

Further exploration of the broader questions raised here are beyond the scope of this report but they should be born in mind during any future development in the general area.

Acknowledgements

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References

Bowyer, M. J. F. 1979 *Action Stations. Wartime Military Airfields of East Anglia 1939-1945* PSL Northants.

Bowyer, M. J. F. 1987 *Action Stations. Military Airfields of Cambridgeshire* PSL Northants.

Dickens, A. 1995 *The Archaeology Around the Duxford Airfield, Cambridgeshire: a Desktop Study* CAU report **124**

Dodwell, N. 1997 *An Archaeological Evaluation at the Heathfields Estate near Duxford Airfield, Cambridgeshire* CAU Report **210**

Evans, C. 1990 *The Duxford Archaeological Assessment* (Pt I-Background Research and Fieldwalking) CAU. Report **1**

Evans, C. 1991 *Archaeological Investigations at Duxford, Cambridgeshire* (Pt II- The Trial Investigations) CAU. Report **40**

Evans, C. and Knight, M. (forthcoming) *Excavations at Barleycroft Farm, Bluntisham, Cambridgeshire 1995.* CAU, Cambridge

Fox, C. 1923 *The Archaeology of the Cambridge Region.* London

Maynard, G. N. nd. *Volume 1 of the 'Maynard Collection ' Consisting Of Vestiges Of The Ancient History, Antiquities etc. Of The Hundred, Parish and Neighbourhood Of Whittlesford, Cambs.* Unpublished Manuscript CRO R58/5/1

Mortimer, R. And C. Evans 1996 *Archaeological Investigations at Hinxton Quarry, Cambridgeshire: The North Field* CAU Report **168** (2 volumes)

Neville, R. C. 1854 Ancient Cambridgeshire *The Archaeological Journal* **XI**, 207-215

Pollard, J. (forthcoming) Worked Flint and Pottery Assemblages in Evans, C. and Knight, M. *Excavations at Barleycroft Farm, Bluntisham, Cambridgeshire 1995.* CAU, Cambridge

Pollard, J. 1994 Worked Flint and Pottery Assemblages in Evans, C. Archaeological *Investigations at Barleycroft Farm, Bluntisham, Cambridgeshire 1994* Barleycroft Farm/ARC Paper 1 CAU report **132**

Spence, C. 1990 *Archaeological Site Manual* Museum of London

White, L. A. 1996 *Archaeological Investigations at Heydon Grange, Cambridgeshire. The Bran's Ditch.* CAU Report **181**

Appendix 1
Summary of Material Recovered from Sampling in Area 1

Context 013

Sample number	Struck Flint	Burnt Flint	Total	Pottery
1	0		**0**	
2	3		**3**	
3	0		**0**	
4	0		**0**	
5	5		**5**	
6	2	1	**3**	
7	5	1	**6**	
8	0		**0**	
9	1		**1**	
10	2	1	**3**	
11	3		**3**	
12	0		**0**	
13	0		**0**	
14	1	1	**2**	
15	1	1	**2**	
16	1		**1**	
A	8		**8**	5gms
B	9		**9**	
C	19		**19**	
D	6		**6**	11gms
E	3		**3**	3gms
F	4		**4**	
G	3		**3**	1gm
H	6	1	**7**	
I	9	1	**10**	7gms
J	8		**8**	34gms
K	0		**0**	
General	22	0	**22**	17gms
Total	121	7	**128**	**78gms**

Context 014

Sample number	Struck Flint	Burnt Flint	Total	Pottery
1	0		**0**	
2	3		**3**	
3	0		**0**	
4	0		**0**	
5	0		**0**	
6	3	1	**4**	
7	0		**0**	
8	1		**1**	
9	0		**0**	
10	0		**0**	
11	1	4	**5**	
12	1		**1**	
13	1		**1**	
14	0	1	**1**	
15	1		**1**	
16	0		**0**	
General	18	1	**19**	21gms
Total	**29**	**7**	**36**	**21gms**

Appendix 2
The Flint Assemblage
M. White

General Characteristics

A total of one hundred and eighty lithic artefacts were recovered, comprising one hundred and sixty-four worked pieces and sixteen burnt flint. A summary of the lithic density and characteristics from the various contexts is presented in Table 1.1:

Context	Burnt Flint	Cores Flake:Blade	Blades	Flakes	Retouched pieces/tools	Other Debitage	TOTAL
[013] samples 1-16	5	0:0	1	14	1	7	**28**
[013] A-J	2	4:0	8	46	3	12	**75**
[13] general finds	0	1:1	7	16	0	0	**25**
[014] samples 1-16	6	0	3	5	0	3	**17**
[014] general finds	1	3:1	3	8	1	2	**19**
F.2	2	3:1	3	4	0	1	**14**
[016]	0	0	0	1	0	0	**1**
[018]	0	0	0	0	0	1	**1**
TOTALS	**16**	**14**	**25**	**94**	**5**	**26**	**180**

Table 2.1 Summary of Lithic Distribution by Type

Area 1
(F.1 and contexts [013] and [014])

Excluding the burnt flint, there is no statistical difference between the two main contexts around F.1 (X^2 = 9.00, p=>0.05, 4df) in terms of typology or technology. While the inclusion of the burnt flint does produce a significant difference (X^2=19.90, p=0.005, 5df), there being far fewer pieces in the higher context, this is considered to be a reflection of the plough zone, the brittle burnt flint in the upper context having been destroyed by plough action. The division between [013] and [014] was arbitrary and the material assemblage reflects that. No simple stratigraphic/temporal division can be upheld. Material from the two contexts also exhibits similar surface condition, the vast majority from both zones showing white to blue-white patination.

The collection shows a clear dominance of relatively crude flake-based technology, with numerous short, squat flakes and eight relatively unsophisticated multiple-platform cores. Although there are no diagnostic tool forms in this element, the general technological features would seem to imply a later prehistoric date, probably later Neolithic - Bronze Age. This

suggestion is not inconsistent with the few formalised tools recovered - a small, almost thumbnail scraper, and a putative blank for a tanged arrowhead.

A small part of the collection shows very different technological characteristics, being based around the production of prismatic blades. This might provide evidence for an earlier phase of activity at the site, blade technology of the type found at Heathfields is most often associated with the earlier Neolithic. The cores from this element all show parallel blade removals from a single platform, with the debitage mostly represented by secondary and tertiary blades. An earlier date would also find support from the end-scraper on a large blade with steep retouch, and a single intensively worked micro-blade core, which might even testify to a late Mesolithic presence. The latter is also in a different condition to the other artefacts, retaining its original black colour without staining or patination.

In summary, the lithic artefacts from Heathfields can be classified as a mixture of elements of both early Neolithic and Bronze Age date, with a dominance of the latter. It should be emphasised, however, that this conclusion does not imply continuity between the two periods. The two are now mixed together in the subsoil, a situation most probably enhanced by ploughing. The horizontal distribution of the artefacts, however, is more highly patterned and is unlikely to be the result of plough redistribution.

Horizontal Distribution

70% of the recovered material was found within a 6-7m radius of F.1, and some 90% was found within a 10-12m radius. This is equally apparent in both [013] and [014] (see Figure 8). There is a very clear correspondence between the distance from F.1 and the density of lithic artefacts, however all are within the immediate vicinity of F.3, the natural hollow. This pattern is particularly clear from the finds made through strip-area excavation of [013], where the units adjacent to F.1 yielded significantly greater numbers of artefacts. Clearly, F.1 represents either the original source of most artefacts, or is a feature associated with an otherwise important location around which activity was centred. The horizontal patterning has no obvious temporal significance, and there is no association between distance from F.1 and artefact age.

The horizontal distribution implies that this spot was used over extended, but probably discontinuous, periods of time. If discrete clusters ever existed, they have now been eliminated by extensive ploughing. The date of F.1 is difficult to establish, but is more likely to be later Neolithic based on the associated pottery assemblage.

Compared to the assemblage recovered during the evaluation phase (see M. White in Dodwell 1997: 17-18) the material found around the immediate area of F.3 shows no significant differences in terms of technology, typology or condition. In general the lithic material seems to represent part of a spread

across the landscape with higher concentrations in specific areas, a classic 'scatter and patches' pattern.

If this is a specific 'patch' then the technological characteristics of the collection may give some clues as to the nature of human activity in this place. It is clear that most of the debitage is relatively diminutive, and belongs to the primary and secondary stages of reduction. The cores are also mostly (although not exclusively) small and there is a high incidence of residual cortex, indicating that they had not all been intensively worked or exhausted before discard. Indeed, most show few removals, one being discarded after only four detachments. This pattern is reflected in the 1:7 ratio of cores:debitage, illustrating above average core frequencies and testifying to low overall levels of knapping intensity per core. It is also important to note that only four retouched pieces/tool forms were recovered, indicating that secondary working of blanks was not an important element of the activities carried out here.

The combination of these factors allow several broad inferences. Firstly, this area seems to have seen the primary exploitation of cores and/or raw materials with only minimal secondary working into tools. This suggests that either cores suitable for blank production, or the most suitable blanks themselves, were removed from the area for exploitation elsewhere. Given the diminutive size of most of the lithic materials, including the cores, the former might be the most appropriate explanation, with the larger elements removed from the sample and transported away from the site. Large flakes from those cores knapped at the site might also have been preferentially removed.

As discussed in the main text, F.1 is situated roughly in the centre of F.3, a hollow some 5m x 6m in extent, which may originally have been a tree-bole or solution cavity. In either case, the hollow might have presented an accessible source of raw materials, either cast up by a fallen tree, or exposed around the edges of a solution cavity. The raw materials used in the Heathfields assemblage shows a mixture of characteristics with flint from both fresh chalk and derived pebble contexts. As the hollow is incised into a gravel overlying chalk, this is precisely the type of mixture that might be expected given either of the above situations. Although this example is much smaller it is in many ways similar to the hollow (*c.* 22m in diameter) observed by Evans at a nearby site, immediately to the east of the M11 (1991: 4-11; 29-31; see discussion in main text).

In summary, the area around F.1 seems to have been a focus for the primary exploitation and assessment of raw materials. The natural feature which originally facilitated the accessibility of raw materials might have later been subject to direct human exploitation, culminating in the digging of the pit, F.1.

Post Holes [016] and [018]

The two post hole fills [016] and [018] produced only a chip and a single flake respectively. The material is completely undiagnostic, and offers no additional information to that provided by F.1 and the area around it.

Areas 2, 3, 4 and 5

F.2

F.2, a large ditch feature some 100m south of F.1, yielded fourteen pieces of worked flint and two burnt flints. Interestingly, this feature produced a higher relative proportion of blades than F.1, although the size of the sample clearly casts doubt over the significance of this fact. Moreover of the four core three are multiple platform types, suggesting a later date. The fourth core shows parallel removals from a single platform, producing wide flake-blades. This might show some affinities with the earlier period, although again the small sample precludes stronger conclusions. Given the small size of the collection, there are very few grounds on which to separate this material from the general scatter over the entire landscape. Moreover, the evidence presented in the main report suggests that F.2 is a much later feature, and it is therefore probable that the associated flint is the residue of a general prehistoric scatter.

Appendix 3
Pottery

Prehistoric Pottery
K. Gdaniec

A total of 123 grammes of later Neolithic pottery (20 sherds, the rest crumbs) and a lump of fired clay (22 gms) were recovered from the second phase of investigation. Most of this came from the machine strips in [013] (see Appendix 1).

013
A: All associated with one sherd. Abundant flint and sand temper, undecorated. Late Neolithic.

D: Two as one, badly abraded, flint temper; one flint temper. Late Neolithic.

E: Crumbs flint tempered prehistoric pottery.

G: Crumbs prehistoric pottery; soapy fabric, buff brown. Prehistoric pottery?

I: Very abraded, rolled and weather worn. Late Neolithic.

J: Four as one, very thick, coarse flint temper. Much abraded, surfaces gone. Late Neolithic. Also lump of fired clay.

013 "Immediately south of machine strip": Two as one, moderate flint temper, abraded. Possibly decorated with short incised strokes; possible organic temper with fine sand. Late Neolithic.

013 general: Includes cord impressed Peterborough, strong red surface with black interior, coarse flint grits, flint and sand tempered; flattened rim (two as one), flint and sand tempered. Late Neolithic.

014 general: All from one vessel, undecorated dark grey/black interior, pale orange buff surface. Frequent fine flint grits. Late Neolithic.

F.3 [030]: Scrap of prehistoric pot, chalk solution on it.

F.4 [016]: Soapy fabric, grog, different fabric and vessel from rest of assemblage. One distinct groove and smaller diagonal offset grooves to it. Late Neolithic/Early Bronze Age?

The pottery assemblage recovered is entirely consistent with the fragments recovered in the evaluation stage. Broadly they date to the later Neolithic, although the fragment from F.4 with the soapy fabric, may be a little later still. The assemblage is not inconsistent with a broadly domestic context.

Later Pottery
D. Hall & G. Lucas

Sherds from four vessels of post-prehistoric date were recovered, three from the large ditch F.2. In at least one case, [028], the pottery is problematic as it can be seen as either late Saxon/Saxo-Norman or early Roman, and another sherd ([035]) is no less ambiguous. This presents problems of course for dating the ditch as it is these sherds which are the most critical. As it stands this report will inevitably remain ambivalent as regards their date.

Context	Feature	Description	Date
[013]	-	rim from a medium sized jar with everted rim in a fine greyware (Hadham/ Essex)	2nd-4th century AD
[035]	F.2	joining rims from a beaded wide-mouthed jar/bowl in a reduced sandy fabric (local)	1st-2nd century AD?
[028]	F.2	rim from a bowl with grooved, angled rim/flange in sandy greyware	1st-mid 2nd century AD **OR** late Saxon/Saxo-Norman
[027]	F.2	body sherd from a ?jar in oxidised fabric (Essex)	15th century

Table 3.1. Summary of later pottery