

PRE-CONSTRUCT ARCHAEOLOGY LTD

**EXCAVATIONS AT THE FORMER BEXLEY HOSPITAL,
DARTFORD HEATH, KENT**

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EXCAVATIONS AT THE FORMER BEXLEY HOSPITAL, DARTFORD HEATH, KENT

BARRY JOHN BISHOP

INTRODUCTION

The site is located within the grounds of the former Bexley Hospital situated to the south of Old Bexley Lane on Dartford Heath and centred on NGR TQ 5125 7275 (see Fig 1). Following an application to redevelop the site for housing, an initial phase of field evaluation followed by excavation was conducted by Pre-Construct Archaeology across the western and central parts of the site during June and August 2001. A further phase of field evaluation followed by excavation was conducted across the eastern part of the site during August and September 2002. Concurrent Archaeological Evaluations investigating the potential of the site for Palaeolithic remains were undertaken by Francis Wenban-Smith, Martin Bates and Gil Marshall; no organic remains from this period were encountered although a single Palaeolithic handaxe or core was recovered from the second phase of evaluation, and the geological implications for the Pleistocene succession in the area will be reported on separately.

The earliest evidence of human activity at the site consisted of numerous tree-throw hollows, one of which contained the broken head of a Mesolithic tranchet axe. Other recorded features included three pits containing partially refittable Mesolithic/Early Neolithic flintwork. Later activity in the form of a ditch and numerous pits and postholes was also identified. These are thought most likely to represent later prehistoric settlement although little dating material was recovered and their interpretation remains problematic. Although possibly potentially forming part of an agricultural landscape during the prehistoric and Roman periods, the relatively remote and open heathlands that the site was situated within appear to have been only sporadically utilized throughout much of the historical period, such as for pasturage and sand quarrying. The earliest documentary records indicate that the site was incorporated as part of the estate of 'Baldwyns' manor house by the early 19th century, and by the end of that century had been acquired as part of the former Bexley Hospital, with substantial buildings occupying the northern and central parts of the site, but much of the rest remaining as open parkland forming the hospital grounds. The completed archive will be deposited in an appropriate archival storage facility under the site codes OBH 01 and KOBH 02.

GEOLOGY, TOPOGRAPHY AND VEGETATIONAL HISTORY

The site lies on what is now part of Dartford Heath, an area of acid grassland situated at a relatively elevated location between the valleys of the rivers Cray and the Darent. Although the vegetation history of Dartford Heath is largely unexplored, evidence from other parts of the country suggests similar heathlands would originally have been fertile and with viable agricultural soils. Localized degeneration of soils in these areas may have begun as early as the Mesolithic, where repeated burning may have led to the formation of podzols and heathland (Ellaby 1987, 58). A major extension of heathland in southern England during the Bronze Age has also been suggested, caused by repeated deforestation, burning, and in some cases, agricultural activity (McPhail and Scaife 1987, 42-43, 45).

The geology at the site comprised Pleistocene Boyn Hill/Orsett Heath (Bridgland 1994; British Geological Survey 1998) or Dartford Heath Gravel Member sands and gravels (Gibbard 1994) up to 5m thick, overlying Tertiary Thanet Sands. Across the southeast corner of the site, a stiff fine-grained clayey deposit, between 0.10m and 2m thick, overlay the sands and gravels. Although marked as “Head” deposits on the British Geological Survey map (1998), this most likely represents partially disturbed Pleistocene low-energy alluvial deposition (F. Wenban-Smith pers comm.). Topsoil across the site varied between c.0.20 and c.0.50m deep, its occasional impressive depth probably owed more to the looseness of the underlying deposits than any extensive ploughing of the site.

The site was generally flat, sloping down from the southeast to northwest from approximately 44.2m OD to 36.5m OD, and with the exceptions of large depressions scattered around the site caused by the demolition of hospital buildings, no prominent topographical features were present.

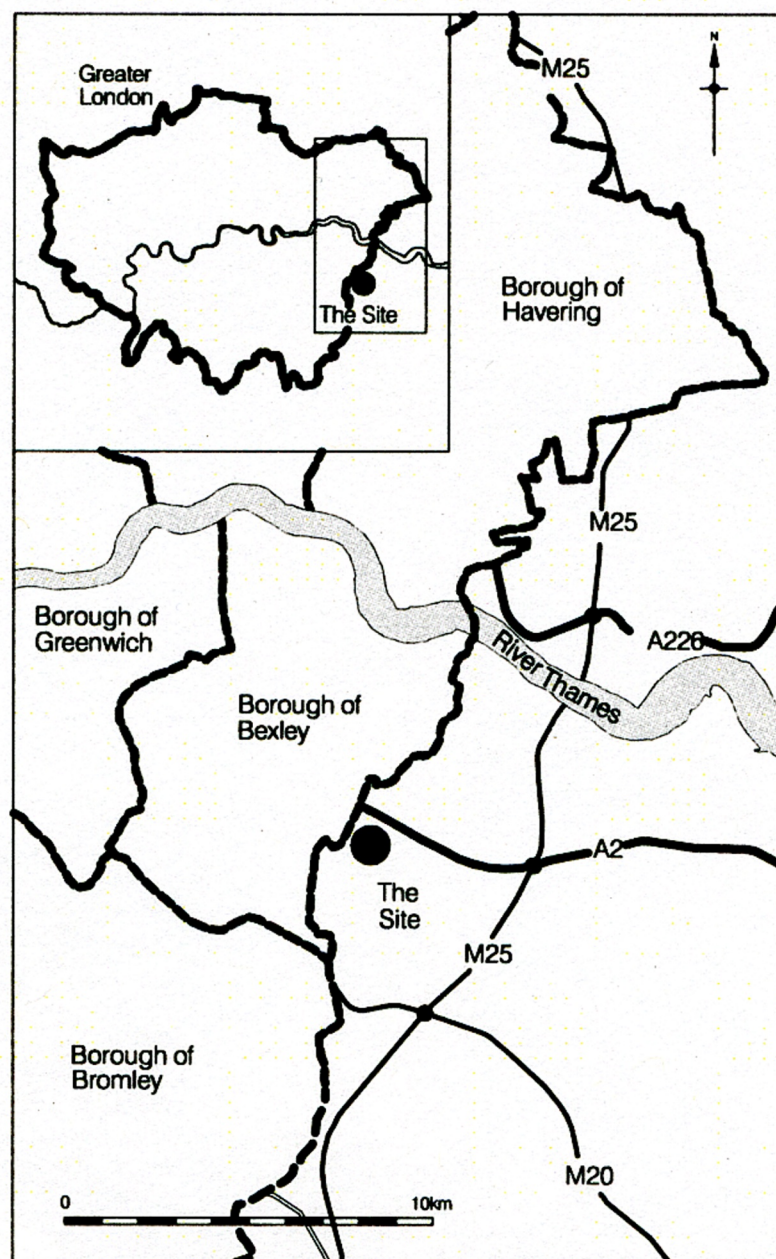


Fig. 1. Site location

METHODOLOGY

The first phase of archaeological investigations involved the excavation of thirty-two 2m wide and 20m long evaluation trenches located evenly across the western and central parts of the proposed redevelopment area. Although sporadic cut features of indeterminate function and date were identified within many of the trenches, there was a notable concentration of features, including those containing dateable artefacts, in the southern central part of the site. Accordingly, an Archaeological Excavation of an open area of c.2000m² (the western excavated area), centred on the concentration of features revealed during the Field Evaluation, was conducted. The second phase of investigation involved excavating twenty-two 2m wide and 20m long trenches across the eastern part of the proposed development. Archaeological features were identified within a north-south aligned evaluation trench, in the southwestern part of this area and a further excavation (the eastern excavated area) was conducted, approximately 150m east of the initial excavation and consisting of an open area of c.1050m² (Fig 2). Much of the northern, eastern and central parts of the site had been severely disturbed during the construction of the hospital and its subsequent expansion, resulting in the removal of all archaeological deposits in these areas.

A comprehensive environmental artefactual sampling program was undertaken; subsequent assessment of the environmental samples demonstrated that with the exception of occasional charcoal fragments no organic remains had survived the soil conditions.

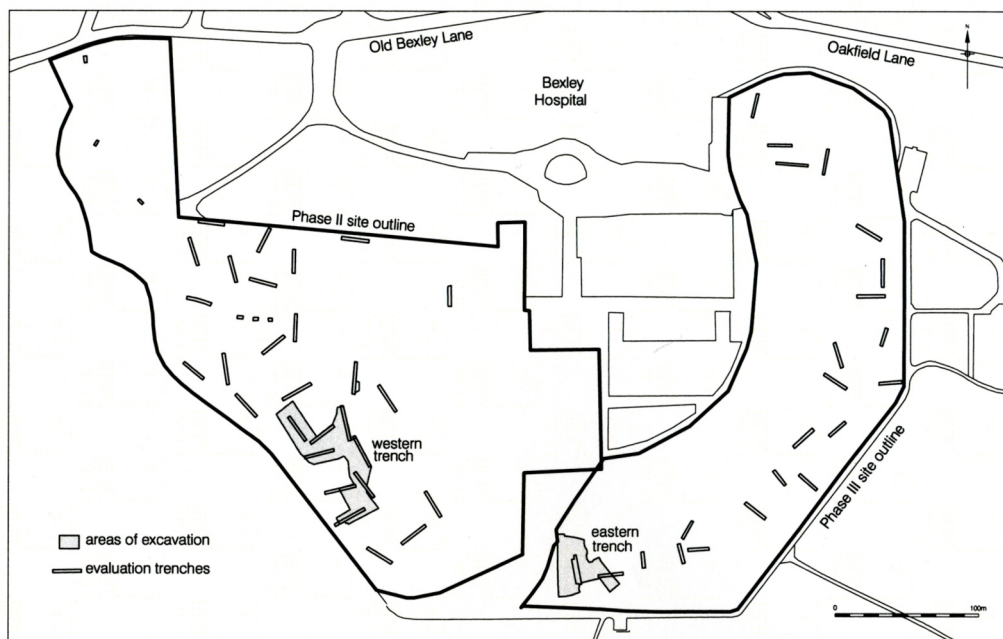


Fig. 2. Trench locations

THE ARCHAEOLOGICAL SEQUENCE

A total of 185 cut features were recorded within the excavation areas. The greatest problem encountered in attempting to interpret these results stemmed from the paucity of stratigraphic relationships and the general lack of dating material produced. The majority of features produced no cultural evidence at all, and only three features produced sufficient quantities to allow any confident dating.

Vegetation clearance

Thirty-nine amorphous features with irregular and poorly defined edges and bases were recorded, scattered across the area of excavation (Fig 3). They varied from less than 1m up to 6m in width and could be traced for up to 0.75m in depth. They have all been interpreted as hollows created by fallen trees, whilst some of the smaller ones may represent disturbance to the sub-soil caused by shrub clearance.

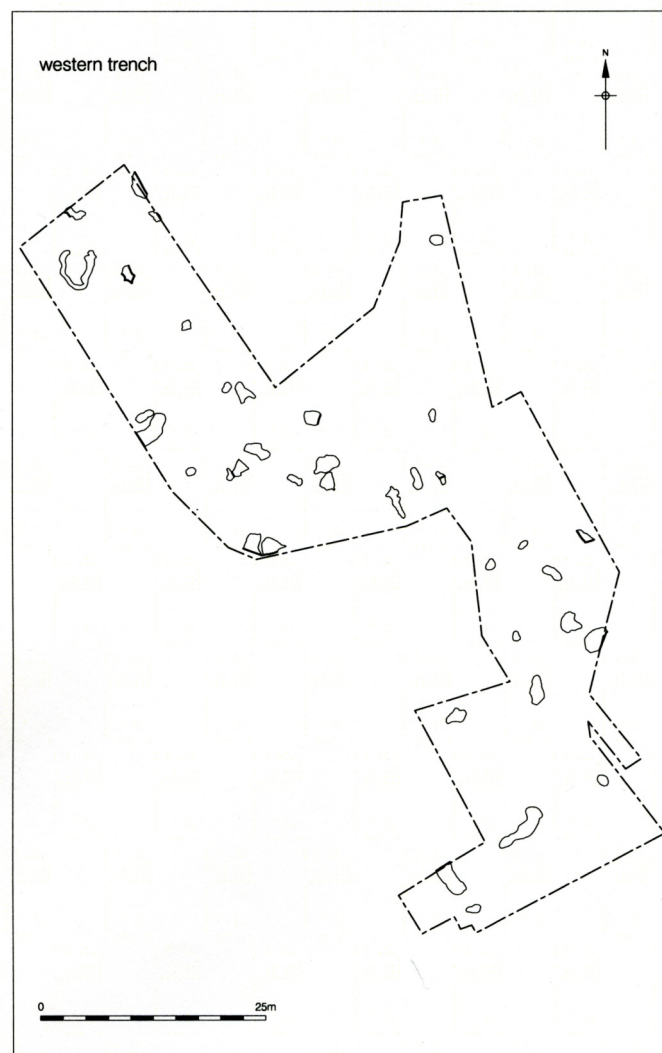


Fig. 3. Vegetation clearance

Finds

Three of these features contained small quantities of burnt flint, nine contained charcoal, although none in any significant quantity, and no evidence of in situ burning was identified. Two produced single struck flints; a core rejuvenation flake (Fig 5, f1), most characteristic of Neolithic or earlier industries, and the broken head of an unpolished tranchet axe (Fig 5, f2). This was 57mm wide and 30mm thick, being comparable to the Thames examples (Field 1989). It was bifacially worked with a lozenge shaped cross section and sinuous side edges. There was a slight gloss to the cutting edge but it had not experienced any heavy use-wear.

Discussion

It could not be established whether these hollows were created by deliberate land clearance or natural up-rooting. Their fills were similar to the underlying geological deposits, although the presence of occasional burnt and struck flint indicated that cultural activities were occurring in or near them, and it has been suggested that such features may have formed important 'landscape markers' and settlement foci in the thickly wooded environment of the Early Neolithic (Evans et al. 1999), although the small quantities of artefactual evidence recovered do not suggest extensive settlement, as has been suggested at some sites (*ibid.*). It would be very tempting to associate the broken axe-head with deliberate attempts to clear tangled roots from the tree-throw hollow, attempts which led to the breaking and discarding of the axe, although any such interpretation must remain speculative.

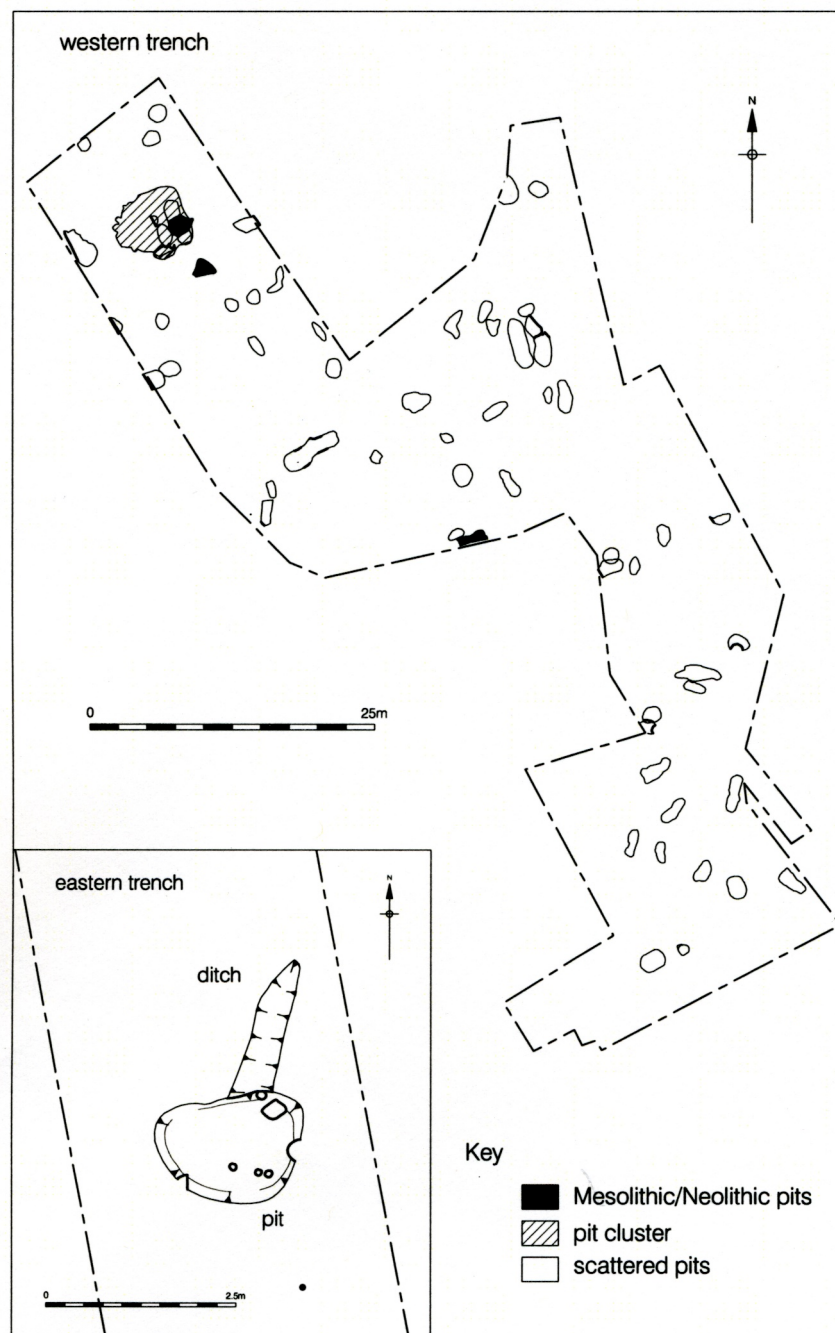


Fig. 4. Mesolithic/Early Neolithic pits

Mesolithic/Early Neolithic Pits

Three pits found in the western area of excavation were notable for the presence of relatively large quantities of struck flint recovered from their fills, and their shape in plan also differed from the mostly oval shaped pits recorded elsewhere on site (Fig 4). Pit [628] was roughly rectangular in plan, measured 2.30m long by 1.55m wide by 0.71m deep, and produced an assemblage of 120 struck flints. It was truncated by a number of later pits that produced an additional 134 struck flints, most, if not all of which were clearly redeposited from it. Pit [609] was triangular in plan, measuring 1.82m by 1.74m by 0.39m deep and produced an assemblage of 186 struck flints. Pit [428] produced 31 pieces of struck flint although as it continued beyond the edge of excavation it could only be partially excavated. It was most likely to also have been roughly rectangular in plan, measuring at least 2.50m long and 0.74m deep. All appeared to have been backfilled fairly rapidly with no evidence of natural silting observed and, unlike many of the other pits recorded, contained no burnt flint or charcoal. As a group they stratigraphically post-dated the tree-throws but were earlier than the other pits and postholes recorded.

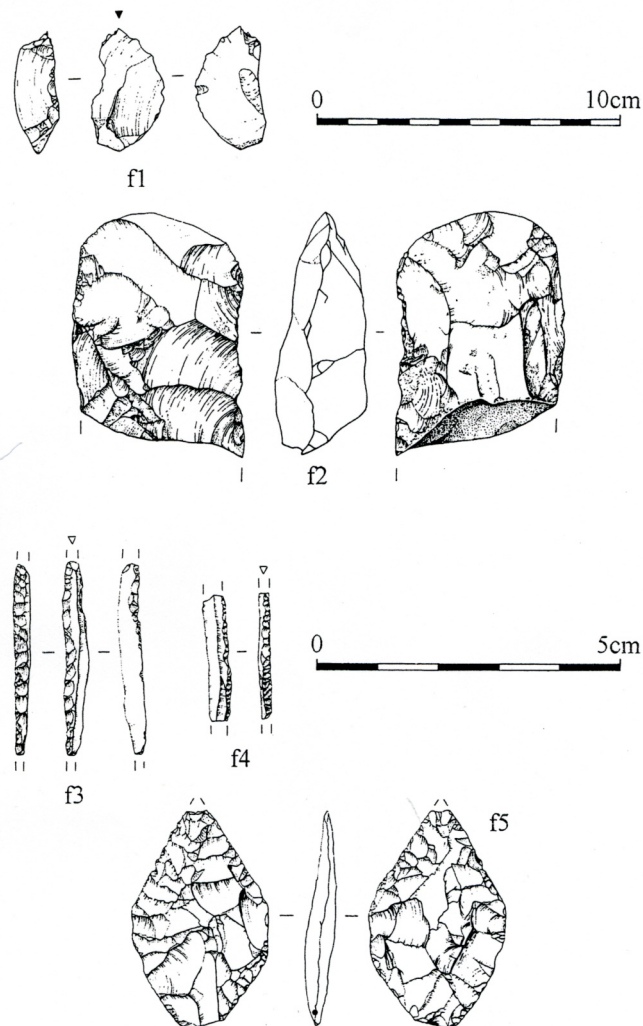
The Flint Assemblage

With a very few exceptions, the assemblages from these pits were in a good, often sharp condition, suggesting almost immediate deposition after manufacture. The raw materials mostly consisted of good knapping quality mottled translucent black/opaque grey flint with a slightly weathered chalky cortex, and a refitting nodule of 'bullhead bed' flint was also recovered from pit [628]. Both types may typically be found within derived deposits commonly encountered around the North Downs, and whilst unlikely to originate from the actual site, could have been procured close-by. The assemblages from pit [609] and [628] each derived from two nodules, with a single nodule producing the assemblage from pit [428]. Only a small proportion of the total products from any of the cores were present and it would appear that useful items, including any potential tools or useable flakes and blades, had been removed. Although no systematic attempts at refitting were undertaken, with little effort 17 refitting groups involving up to six sequentially removed flakes were recognized. No cross refitting between the pits was evident and difference in raw materials suggested that the material from each pit represented discrete knapping episodes with no intermixing occurring. Many refits from the pits that truncated pit [628] were present, demonstrating the redeposited nature of the assemblages from these later pits.

Technologically, the assemblages were indicative of primary core reduction activities, being dominated by core preparation and shaping flakes with exhausted or fragmented cores, broken flake fragments, chunks and small trimming chips. A few potentially useable flakes and blades were present, although the majority were either broken or had pronounced dorsal scars or other deficiencies, which would suggest that they may have been rejected for use. Their presence did demonstrate that the objective of the knapping strategy was to produce regularly shaped blades and narrow flakes. The limited attempts at refitting demonstrated that this was achieved by the removal of often large cortical and mass reduction flakes until a suitable striking platform and core face was produced on a part of an otherwise largely unmodified nodule. This was then worked until it was no longer viable, usually due to problems with platform angles or hinge fracturing and thermal shattering. Sometimes these deficiencies could be remedied by removing a few flakes from a different angle, including the removal of core tablets, and followed by resuming production on the same platform. If rejuvenation was not possible, a completely new striking platform was created elsewhere on the nodule. The initial size of the raw material allowed the removal of blades in excess of 100mm long, although these decreased to less than 30mm long as the cores diminished in size. Although limited platform edge trimming was undertaken throughout the reduction sequence, it was only when the core was being worked for

systematic blade and narrow flake production that the striking platform/core face angle was extensively modified, often by fine trimming or abrasion to the edge and, occasionally, actual faceting of the platform.

Such reduction methods are most characteristic of Mesolithic or Early Neolithic industries. A single rod-like microlith was recovered from pit [628] (Fig 5, f3) and a similar example from the pit cluster (Fig 5, f4) may also have originated from this pit. These are diagnostic Later Mesolithic artefacts and may indicate the actual date for the assemblages as a whole. The example from pit [628] was noticeably more abraded than the bulk of the rest of the assemblage, and as no other in situ chronologically diagnostic artefacts were present, the possibility that the microliths were residual must be considered. A leaf-shaped arrowhead (Fig 5, f5) was recovered from another pit, suggesting some activity continuing at the site during the Early Neolithic (Saville 1990, 154, contra Green 1980, 94-97). With both Mesolithic and Early Neolithic activity indicated, it is not possible to confidently further refine the dating of the pits within those periods.



f1: core rejuvenation flake; f2: unpolished tranchet axe;
f3: microlith; f4: microlith; f5: leaf-shaped arrowhead

Fig. 5. Flintwork

Discussion

All three of these pits contained flintwork dateable to the Mesolithic or Early Neolithic periods representing deposition of selected waste from a limited number of discrete knapping sessions. With the exception of a few pieces of diagnostic flintwork recovered from features scattered across the excavated area, no evidence of any more extensive occupation during these periods was discovered, nor was any evidence for above-ground middening forthcoming, despite careful examination of topsoil deposits. Trial trenching also failed to locate any such activity within the site's boundaries and the paucity of evidence for the general exploitation of Dartford Heath has made it difficult to place these features into a comparative context. Undiscovered settlements may have existed close by, but the possibility remains that these features were relatively isolated and located away from any areas of more extensive activity.

The function of the pits also remains enigmatic, despite the actual circumstances surrounding the acts of deposition being reasonably clear. It would appear that a limited number of nodules, possibly as few as two per pit, were reduced and useable flakes and blades removed. A small selection of all types of the resultant waste products, from small chips and core shatter to large decortication and mass reduction flakes, was then collected and deposited into the pits. The lack of refittable pieces between the pits suggests that each episode of knapping and deposition occurred separately, the condition of the pieces suggesting deposition occurred soon after manufacture.

Although an obvious explanation may be that these actions simply represent the disposal of rubbish, certain problems remain. Each episode of deposition would appear to represent a very specific event, rather than general discard activities, and the pits may have been rapidly dug and backfilled. No associated evidence of occupation was identified and, although the soil conditions were likely to have precluded the survival of bone, no other artefact types, including charcoal or burnt flint, were present in any of the pits. If the contents of the pits were specially selected in some way, it might be possible to suggest a more ceremonial aspect to the deposition. Such practices appear widespread during the Neolithic, when the infilling of some pits involved a degree of spatial or compositional selection, sometimes of prestigious items but often involving what would nominally be regarded as rubbish, although it would usually be carefully selected in some way (eg Edmonds 1995, 42-45). Similar practices have also been claimed for the Mesolithic (eg Pollard 2000). Such acts of ritualised deposition appear to have been exercised both at monuments and within more 'domestic' type settlements. The lack of evidence for either here may even suggest that the actual area itself held some sort of special connotations (Bradley 2000).

Other Features

Pit Cluster

This group comprises a series of closely intercutting pits, occupying an area of approximately 7m by 6m in the north of the western area of excavation (Fig 4). At least five pits were identified although it was apparent that a mass of others were present but could not be distinguished due to intense intercutting and the almost identical nature of their fills. This also made it impossible to establish all of their original dimensions, although where this was possible they measured between c.1.30m and 2.00m long by 1.10m and 1.30m wide and survived to up to 0.62m deep, being mostly oval in shape with steep or vertical sides and flat bases. All contained small quantities of burnt flint and charcoal and larger assemblages of struck flint, although with the latter these were clearly redeposited from the Mesolithic/Early Neolithic pits.

Ditch and scattered pits

A small north-south aligned ditch with a rounded termination to the north was excavated in the eastern area of excavation. It measured 0.44m wide but only survived to a depth of 0.10m. No cultural material was recovered from its fills but it was truncated to the south by a later pit. Finds recovered from the fill include fragments of burnt daub and burnt flint, and an undiagnostic waste flake only dateable to the prehistoric period. Fifty-eight other pits were recorded, all of them (except for the aforementioned example in the eastern area of excavation) were scattered evenly across the western excavated area. Similar features recorded during the evaluation work may indicate that this pattern continued across much of the site. Although morphological variations were present, most formed a fairly homogenous group, being of similar shape to those of the pit cluster described above. They measured an average of 2.00m long by 1.27m wide and were up to 0.81m deep, with a few significantly larger than this, reaching over 5m in length, although these tended to be relatively narrow. Conversely, a few of the smaller pits may actually have represented weathered postholes. Most of the pits appeared to have been rapidly backfilled before any significant weathering had occurred, although a few had laminated or darker coloured and more clayey primary fills followed by more uniform secondary fills, suggesting that these may have been open for some time before backfilling.

Few of these pits were intercutting; those that were demonstrated that the pit digging was not conducted in a single operation and although it was impossible to estimate over how long a period it did last, their homogeneity suggested that most formed a group representing at least broadly contemporary activity.

The Finds

Approximately half of the scattered pits contained charcoal, although only 23 (39%) contained any cultural material, consisting of small quantities of burnt flint and/or struck flint. No pottery, bone or environmental evidence was recovered, although the pit excavated in the eastern area did produce a few fragments of burnt daub. Most of the struck flints were found singularly, and as at least some were likely to have been residually deposited, dating of the pits is very tenuous. The only chronologically diagnostic piece recorded consisted of a leaf-shaped arrowhead probably dating to the Early Neolithic: some of the other pieces consisted of blades or blade-like flakes, comparable to the material recovered from the Mesolithic/Early Neolithic pits. The rest of the material appeared more crudely produced, being more characteristic of industries dating to the Middle Bronze Age or after. However, with such a small assemblage this identification must remain rather unreliable, although some support for later flintworking comes from an edge-trimmed flake that had been retouched after the flake had recorticated.

Discussion of the pits

Ascribing a function or date to the pits was difficult as they contained little or no artefactual evidence. They were numerous and evidently represented a major undertaking, although it was uncertain over what duration that this was accomplished. Pit digging was an ubiquitous activity during the later prehistoric period, pits often forming the most common feature type found in settlements, indeed, prior to the Middle or Late Bronze Age, they are frequently the only surviving structural evidence of settlement (eg Brück 1999; Pollard 1999). Large numbers of artefact-sterile pits are perhaps most commonly associated with later prehistoric settlement sites, usually dated to the Middle Bronze Age or after (eg Moore and Jennings 1992; Guttman and Last 2000).

Numerous comparably shaped and sized pits were recorded at Reading Business Park, many containing little or no artefactual material (Moore and Jennings 1992). It was suggested here that many were used, at least primarily, for grain storage, with environmental evidence suggesting some were utilized for flax retting (*ibid.*, 122). Similar pits recorded at Burghfield were also considered to have primary function as grain stores prior to being utilized for the disposal of rubbish (Bradley et al. 1980, 221-228). The very limited artefactual material recovered from the pits here would seem to exclude a rubbish pit function, although this is difficult to assess as no organic remains survived the adverse soil conditions. The pits may have served as grain stores, although no clay-linings, often suggested as a good indicator of such practices, were evident. The easily drained natural deposits may have permitted a storage use, although the evidence from their fills and the steepness and lack of erosion to their sides would indicate that they were backfilled shortly after they were dug. Other potential functions could include a use as quarries, and interestingly the fills of many of the pits were much finer-grained than the natural deposits that they cut. Gravel, used for hard standing and trackway consolidation, would have been a desired product during later prehistory (eg Meddens 1996; Williams 1997; Bishop 2002), although the natural deposits here were still predominantly composed of sand, with more gravel rich deposits almost certainly available in the vicinity. No environmental evidence was forthcoming to either suggest or refute a more specialized function, and such usages here must remain speculative.

Postholes

Sixty-three postholes were recorded in the western excavated area, mostly scattered across the excavation area but tending to concentrate towards the north, at least five were truncating part of the pit cluster (Fig 6). As with most of the cut features excavated on the site, the majority of the postholes were stratigraphically isolated with no relationships available to demonstrate either the general chronological development or their precise phasing. In the eastern excavated area a further eight were recorded, varying from 0.15m to 0.40m in diameter and concentrating within a 4m² area around and, in most cases, truncating the pit. These consist of stakeholes, and although probably representing some form of structure, it is unclear from their layout what this may have been.

Virtually all of the postholes recorded in the western excavated area were ovoid or circular, measuring an average of c.0.60m in diameter, with steep or vertical sides and flat or slightly concave bases. No postpipes were seen although depressions in the bases of some of the postholes may represent the compaction of the soft underlying deposits, suggesting that the original posts varied from between c. 0.25m to 0.45m in diameter. A few exhibited a sloping ramp-like depression to one side which has been interpreted as damage caused when the post was inserted, toppled or was extracted. A few were quite large and these tended to have more irregular edges; probably caused by sides slumping, either during initial construction or when the posts were subsequently removed.

Discussion of postholes

As with the pits, it was difficult to date the postholes, relate them to each other or suggest any chronological developments. Although some of the postholes must have represented substantial structures, no obvious building plans could be identified from their distribution. Some two-post structures may have been present and a linear arrangement of three postholes in the northern part of the western excavated area may have represented a sturdy fence-line or boundary. Many potential patterns could be postulated, including several circular or oval arrangements, but none were particularly convincing (see Fig 6). Such arrangements are normally interpreted as roundhouses,

usually dated to within the Bronze and Iron Ages. The diameter of these arrangements postulated here varied from between c.10m and c.15m. This would be large for typical roundhouses, which tend to be less than 12m and can be as small as 5m in diameter. In no cases were complete rings of postholes present nor were any structural elements, such as porches, drip gullies or obvious internal features, identified.

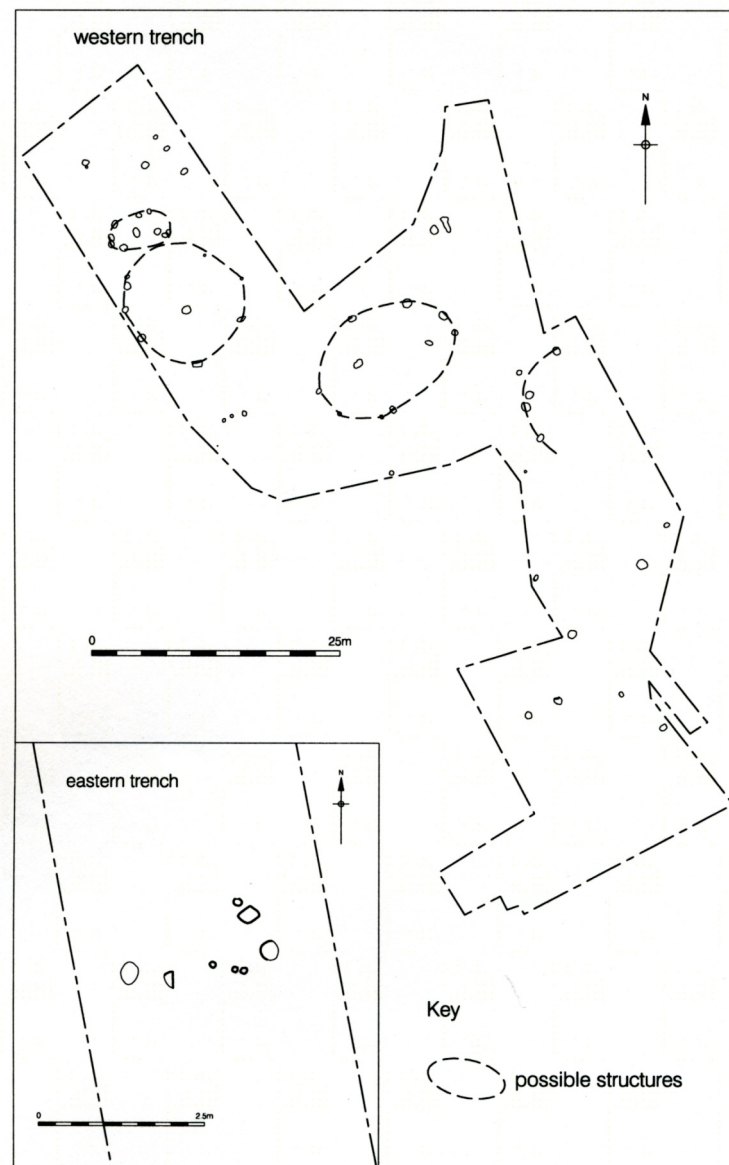


Fig. 6. Postholes

Discussion of the 'settlement'

Generally, the pits and postholes were spread relatively evenly across the western excavated area, with a cluster of both concentrated in the north-west. Dating evidence was limited to a small, abraded sherd of Iron Age pottery (Malcolm Lyne pers comm.), a few sherds of Medieval Earlswood Ware pottery dateable from c.AD 1200 to 1400 (Chris Jarrett pers comm.) all recovered from the subsoil, and occasional struck flints possibly dateable to the Middle Bronze to Iron Age periods present in the cut features. The activity represented by these features could therefore potentially date to anywhere from the Mesolithic/Early Neolithic into the historical period. Features associated with the 'Baldwyns' manor house and the subsequent former Hospital were excavated and all could

be easily distinguished as they truncated a sub-soil horizon which otherwise sealed all other features considered here: they could easily be differentiated by their looser, darker and more humic fills, and they invariably contained quantities of ceramic building material.

These features taken as a whole are most closely paralleled with the more intensive and permanent type of settlement evident from the Middle Bronze Age and throughout the Iron Age (eg Richmond 1999; Yates 2001). If they did indicate some form of settlement, there is very little additional evidence for it in the form of material culture. Much of the evidence, such as bone and possibly even poorly fired pottery, may not have survived the adverse soil conditions at the site. Even the quantities of durable material such as burnt flint, normally abundant on later prehistoric settlement sites, was hardly indicative of any intensive or long-lived occupation. The evidence may therefore represent a more specialized occupation, possibly seasonal or involving low-density occupation over a relatively long period, or possibly even some form of specialist activity, traces of which are no longer archaeologically visible.

Without knowing when the onset of heath formation took place, it is difficult to place this site within its contemporary landscape setting. The area around Dartford and Bexley has a reasonable density of prehistoric settlement, although the evidence so far would suggest that this was largely riverine, focussing on the rich agricultural soils of the Cray and Darent alluvium, as well as the fertile grazing of the marshes bordering the Thames. Numerous prehistoric artefacts have been found on the heathlands, although these tend to be rather specialized, and include prestigious stone and flintwork dating from the Mesolithic to the Bronze Age (eg Tester 1955; Tester 1959; Tester 1985), as well as Bronze Age metalwork, such as the impressive gold and bronze hoards from Wansunt Pit, 1km to the north (Tester 1957; Tester 1985). Traces of possible Late Iron Age settlements have been recorded at Cold Blow, less than 1km to the northwest, although the nature of the occupation there is unclear. The absence of settlement evidence, combined with the unusual nature of the artefacts that have been found, suggest that both Bexley and Dartford Heaths may have been considered remote and marginal during at least the latter parts of the prehistoric period, and it may be that the features recorded here are associated with some form of seasonal movement or involve the quest for some other resource, away from the main settlement foci and not involving the discard of any appreciable quantities of material culture.

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