

Evidence for Neolithic and Bronze Age activity at Ashford Hospital

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with contributions by

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Archaeological investigations at Ashford Hospital revealed evidence for Neolithic and Bronze Age activity in the form of features cut into the river terrace gravel. At least three pits may date to the Neolithic period. One produced three large well-made flint scrapers, possibly placed as votive offerings. The others respectively yielded two potsherds and a single-platformed blade core. The few residual Neolithic artefacts from later features included a sherd of Peterborough ware. Early Bronze Age activity is represented by two pits containing burnt flint and charcoal, which were respectively dated by radiocarbon assay to 1970–1520 and 2030–1520 Cal BC. A waterhole cut by one of the pits was also probably of Early Bronze Age date. The position of the two pits suggests that the features may represent an event marking the abandonment and replacement of the waterhole with another 0.60m to the north and also the construction of a field (probably a stock enclosure). Ditches defined the northern and eastern sides of the enclosure and its corner entrance. The latter was shaped like a short funnel that could have been closed at both ends to allow livestock to be inspected and sorted. An undated waterhole close to the entrance may have been roughly contemporaneous with the enclosure. The enclosure and a third ditch to the north formed part of a co-axial field system. All three ditches contained sherds of flint-tempered pottery, some decorated in Deverel-Rimbury style, and struck flints. The date of the pottery suggests that the ditches were allowed to silt up either towards the end of the Early Bronze Age or more probably during the Middle Bronze Age. The finds were mainly concentrated in the eastern enclosure ditch suggesting the presence of a nearby settlement in the lee of the enclosure. A few pits also produced single potsherds or struck flints dated to the Middle Bronze Age.

Introduction

SITE LOCATION

The site at Ashford Hospital, Ashford, Surrey, is located to the west of Long Lane, and bounded to the north and west by properties fronting onto Holywell Way and Viola Avenue respectively (fig 1). The OS grid reference for the centre of the site is TQ 06368 73151.

GEOLOGY AND TOPOGRAPHY

The site lies on gravel of the Kempton Park (flood plain) terrace in an area bounded by the rivers Colne and Crane, 3km to the west and 5km to the east respectively, and within a great meandering loop of the Thames (British Geological Survey 1999). The latter comes within 3.25km of the site to the south-west, but then sweeps southwards away from the site. The nearest extant watercourse is the river Ash, which is a relatively minor stream less than 2km to the south.

River terrace deposits revealed during the excavation of the site comprised compact yellow/brown clayey sandy gravel exposed at 15.34–16.18m OD. The gravel was poorly sorted and consisted of fine to coarse flint pebbles. The material did not drain well, and during heavy rain areas of the site quickly became flooded.

The local landscape is fairly level, although the ground rises very gently to the Taplow Gravel terrace, the edge of which lies less than 1km to the north. Almost imperceptible breaks of slope and localised areas of slightly higher ground on the gravel terraces appear to have

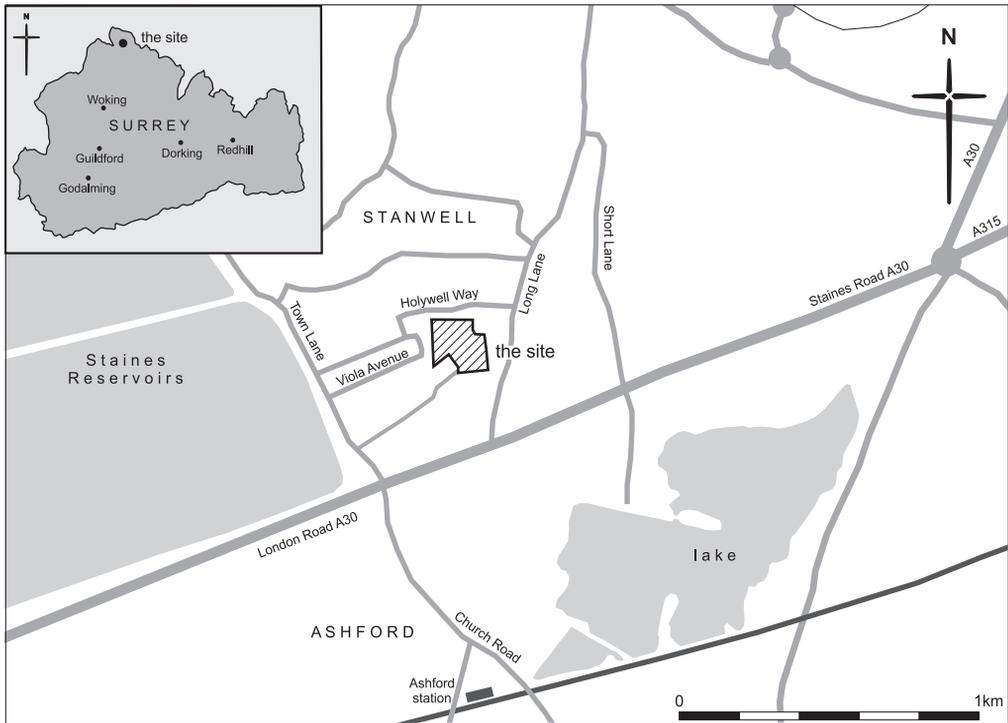


Fig 1 Ashford Hospital. Site location.

influenced the siting of burial mounds and other earthworks in what would otherwise have been a fairly flat and featureless landscape (Lewis & Welsh 2004, 105).

CIRCUMSTANCES OF THE FIELDWORK

Archaeological investigations were undertaken on the site by the Museum of London Archaeology Service (MoLAS) before and during redevelopment, which entailed the demolition of hospital buildings and the construction of houses, flats and hospital accommodation. The site was investigated as a condition of planning consent. Prior to redevelopment the site mainly comprised grassed open space and overgrown waste ground, with a few hospital buildings located towards the southern and eastern edges of the site.

Following the recommendations of Surrey County Council Planning Department an evaluation was undertaken in October 2002, when eight trenches were excavated (fig 2; Cowie 2002; Howe *et al* 2003, 356). These revealed pits and ditches cut into the surface of the Kempton Park Gravel. Two prehistoric struck flints were recovered from a root-hole and a small pit. The archaeological features appeared to be concentrated in the north-east corner of the site. An excavation was duly undertaken in this area during the four weeks leading up to Christmas 2002, when the weather was often extremely wet. An area of 2338m² (Area 1) was subsequently opened exposing numerous features cut into the terrace gravel. The features mainly comprised pits, postholes and natural hollows, although ditches, gullies and two waterholes were also found.

The rest of the site was the subject of a watching brief undertaken during construction work, which began on the site early in 2003. MoLAS closely monitored the contractor's excavations for building foundations, roads, parking areas and services between February and November 2003, and recorded several features including pits and possible ditches. Those areas in which features were discovered were designated as Areas 2–8 (fig 2).

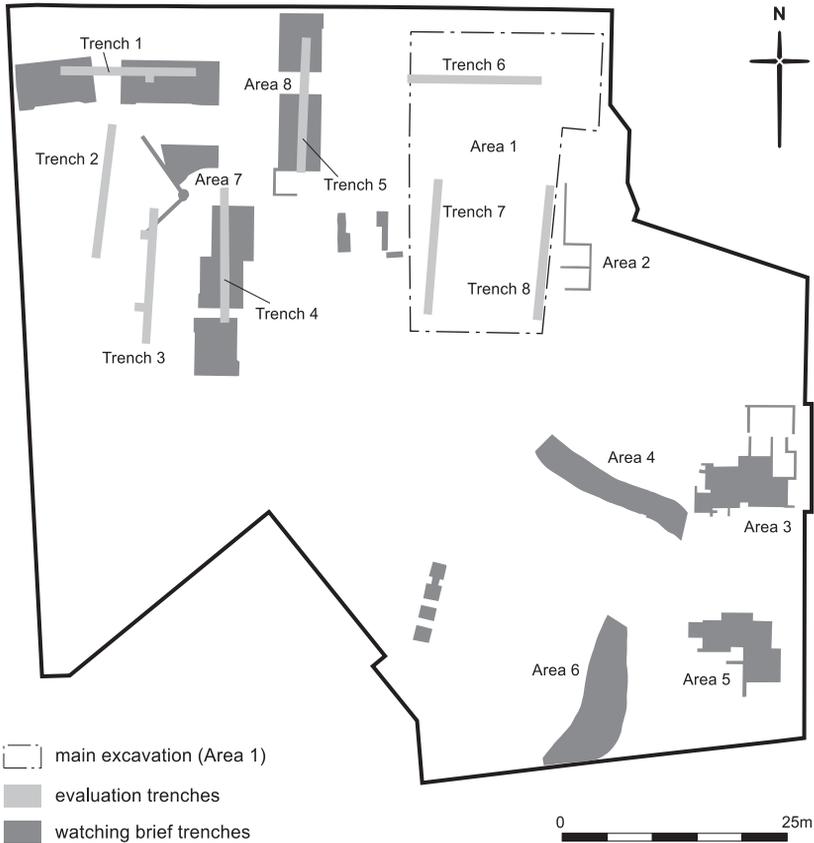


Fig 2 Ashford Hospital. The site showing evaluation trenches 1-8, excavation Area 1, and watching brief areas 2-8.

The site finds and records will be deposited in Spelthorne Museum, Staines (site code SU-ASH02).

METHODOLOGY

During the evaluation and subsequent excavation modern soil was removed by 360° mechanical excavators equipped with ditching buckets in order to expose archaeological features cut into the terrace gravel. Most features, including pits and postholes, were half-sectioned. At least half of each ditch was excavated in 2m-long stretches.

Site sequence

The archaeological excavations and subsequent building work revealed numerous cut features, mainly comprising pits, postholes and natural hollows, but also ditches and waterholes (figs 3 and 4). They had all been truncated by later cultivation and/or soil formation processes, and generally survived to depths of between 0.10 and 0.40m, although a small number of features were shallower or deeper than this. The features were mainly filled with grey/brown silty clay or fine sandy clay.



Fig 3 Ashford Hospital. Prehistoric features in excavation Area 1.



Fig 4 Ashford Hospital. View of prehistoric features in excavation Area 1, looking north.

NEOLITHIC

At least three features (84, 136 and 319) may date to the Neolithic period. The dating evidence consists of a small number of artefacts, including objects made of high-quality flint that probably date to the Early to Middle Neolithic.

Feature 136, near the north-east corner of Area 1, can be dated with the greatest confidence as it yielded three large well-made flint scrapers that had probably been deliberately placed (fig 9; see *Discussion*, below). It consisted of an elongated pit measuring 3.60m long, 0.90m wide and 0.25m deep. It was on the same alignment as nearby ditch 1004, although this was probably coincidental as the latter was dated to the Bronze Age.

Pit 84, in the south-east corner of Area 1, was up to 1.17m across and 0.15m deep. It produced two sherds of pottery, probably from the same vessel. The exterior surface of one had impressed decoration.

Pit 319 was 1.90m long, 0.95m wide and 0.20m deep. It contained a single-platformed blade core (fig 9).

Other Neolithic objects came from features dated to the Bronze Age. They comprised a sherd of Peterborough ware with bird bone impressed decoration from pit 96 and a used tertiary blade from field ditch 1002.

EARLY BRONZE AGE

Waterhole

A large roughly circular pit (106), which was up to 3.00m across and 1.90m deep, was interpreted as a waterhole (figs 5 and 6). Its sides were cut at moderate to steep angles into the natural sandy gravel, some of which had collapsed. The fills mainly consisted of clayey silt.



Fig 5 Ashford Hospital. Waterhole 106.

Feature 182, in the central part of the waterhole, was 1.15m across and 1.35m deep. Its earliest fills, comprising sandy gravel (181) and silty clay (180), probably accumulated during the use of the waterhole. The middle and upper fills, 178 and 179, consisted of sandy gravel and clayey silt (177). These later fills were probably dumped into the putative shaft in order to level-up the ground, perhaps in preparation for the digging of pit 103 (see below). The feature was initially interpreted as a recut, although it probably represented a lined shaft (fig 6). In any case, even if it were a recut its steep to vertical sides would almost certainly have required some form of lining for support.

Although the waterhole did not yield any artefacts, it was initially assumed that the feature was contemporaneous with a nearby Bronze Age field, the entrance to which lay only 5m to the north-west. However, its latest fill was cut by pit 103, which was subsequently dated to the Early Bronze Age providing a slightly earlier *terminus ante quem* for the waterhole than had been anticipated (see below).

Pits containing burnt flint

Pits 103 and 126 contained distinctive fills that included small fragments of charcoal, waterlogged seeds and considerable quantities of burnt flint pebbles. It seems very likely that the features were associated because of their proximity to each other (they were only 5.6m apart), the similarity of their fills and their contemporaneity (see below).

Pit 103 lay in the centre of the infilled waterhole 106, and was 1.54m across and 0.55m deep (fig 5). Its primary fill produced seeds of *Chenopodium* spp. (goosefoots etc), *Urtica* spp. (nettles) and *Juncus* spp. (rushes). Charcoal from the pit gave a calibrated radiocarbon date of 1970–1520 Cal BC (table 1).

Pit 126 lay across the entrance of a ditched field (see below). It was 1.60m in diameter and 0.14m deep. Its fill produced various seeds, including *Chenopodium* spp. and *Galium* spp.

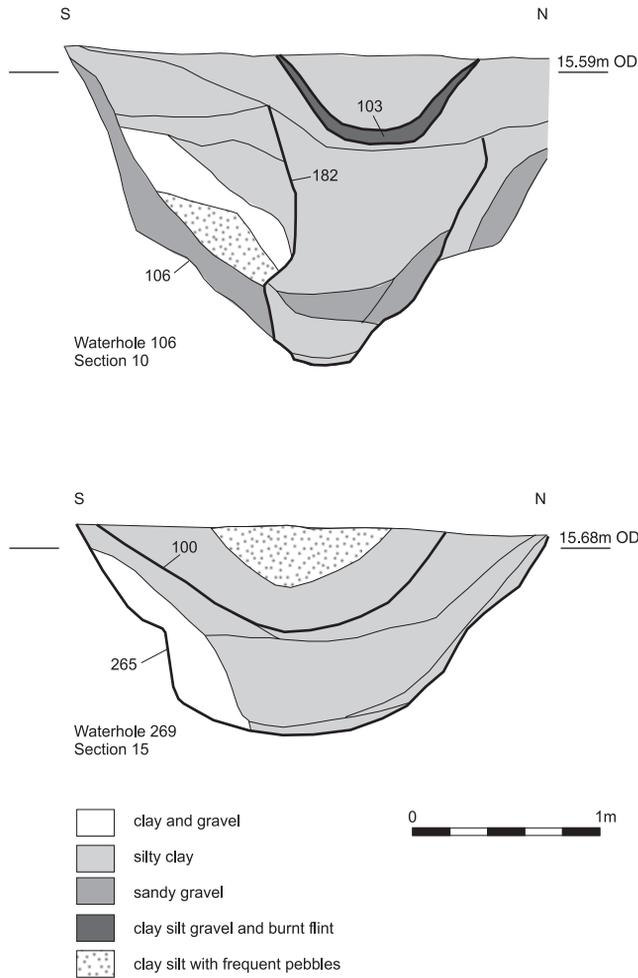


Fig 6 Ashford Hospital. Sections through waterhole 106 and pit 103 and waterhole 265.

(bedstraw), and a tiny potsherd, possibly with a fabric of Neolithic type, but the fragment was too small and in too poor condition for certain identification. Charcoal from the pit provided a calibrated radiocarbon date of 2030–1520 Cal BC (table 1).

EARLY/MIDDLE BRONZE AGE

The field system

Ditches 1001 and 1002 respectively represented the northern and eastern sides of a field with a corner entrance (fig 3). They were up to 0.28m and 0.68m deep respectively, but in many places they survived to much shallower depths (fig 7). A third ditch, 1004, to the north was on roughly the same alignment as ditch 1002, and was up to 0.30m deep. Together the three ditches evidently formed part of a co-axial field system with shared axes on south-south-west to north-north-east and west-north-west to east-south-east alignments.

The ditches were mainly filled with grey/brown silty/fine sandy clay, and produced worked flints and sherds of flint-tempered pottery, some of which were decorated in Deverel-Rimbury style. Pottery of this type has been found at numerous sites in the surrounding area, and has

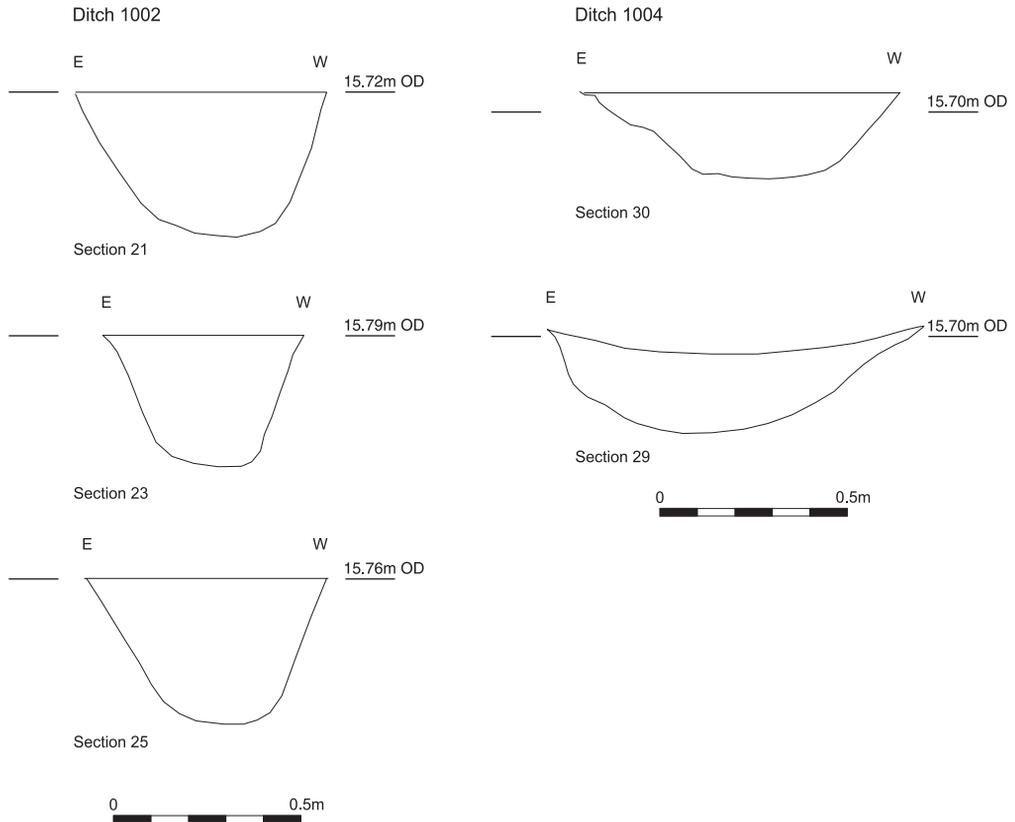


Fig 7 Ashford Hospital. Sections through Early/Middle Bronze Age ditches 1002 and 1004.

mainly been recovered from Middle Bronze Age features, but occasionally it has been found in Early Bronze Age contexts (Jonathan Cotton, pers comm). The laying out of the field probably coincided with the deposition of the burnt flint in pits 103 and 126 during the Early Bronze Age (see above).

Based on more complete examples from Bronze Age sites it is likely that the field was roughly square or rectangular in plan. During the watching brief a trench dug a short distance to the west of Area 1 failed to reveal any evidence for the continuation of ditch 1001, which suggests that the west side of the field lay just outside the excavated area. Allowing for an internal bank and hedge the internal area of the field would probably have been at least 400m², although it could have been considerably larger as no evidence was found for the location of its southern boundary.

As ditch 1002 approached the corner of the enclosure it bent slightly in towards ditch 1001. This minor change in alignment was probably made either to conform more closely to the general layout of the field system, or to avoid a pre-existing feature (such as the waterhole), or to make the entrance between the two ditches narrower. If the latter was the case it would seem likely that ditch 1001 was dug first.

The positioning of an entrance in the corner suggests that the field may have been used for livestock. It would have allowed livestock to be more easily driven out of the enclosure, for the two sides of the field converging on the entrance would have channelled animals towards it (Pryor 1996, 318–19; 1998, 101). The entranceway was shaped like a short funnel with open ends that could have been temporarily closed off with hurdles and/or gates to enclose an area of up to about 12m². It is possible that this area was used for inspecting and/or

sorting livestock into different categories, as animals bunched in the corner of the field could have been filtered through the funnel in small batches.

Waterhole

Waterhole 265 lay only 0.60m to the north-west of waterhole 106. It was 2.50m across and 1.10m deep, and filled with sandy gravel and silty clay. It did not produce any artefacts or datable material. Nevertheless, its location arguably provides some indication of its date. First, it seems extremely unlikely that both waterholes were open at the same time as this would have served no obvious practical purpose and, if anything, would have hindered access. However, their closeness was probably not coincidental and suggests that one replaced the other. This probably occurred soon after the filling of the first waterhole – or at least within living memory of this event. Secondly, as waterhole 265 is slightly closer to the corner entrance of the Bronze Age field, only 2m away, it seems more likely to be contemporaneous with the enclosure and the replacement of waterhole 106.

Other features

Feature 22, pits 37, 82, 96, 319 and 367 and a gully/natural feature 150 produced single worked flints probably dating to the Bronze Age, while pit 80 yielded a potsherd dated to the Middle or Late Bronze Age.

PREHISTORIC

Four pits were cut by features dated to the Bronze Age, but did not contain any artefacts.

LATER ACTIVITY

Very little archaeological evidence was found for later activity on the site. Finds dating to the historic period included a Roman potsherd in a plain oxidised ware from feature 150 in Area 1, and very badly abraded pieces of tile or pot of Roman or later date from a soil horizon in Area 8.

UNDATED

There were a considerable number of undated features, which mainly comprised pits and postholes, but also included ditches. A prehistoric date might possibly be inferred for four undated pits from the presence of small pieces of burnt clay (see report below) in their fills, similar to fragments found in the field ditches. Some features were probably of natural origin and may have included tree-throw holes. Several were irregular in plan and section may have been caused by root disturbance or were perhaps hollows dug during the clearance of trees and shrubs.

The frequency of the pits varied across the site. Most of the larger and deeper pits lay to the east of a nominal line extending along and between ditches 1001 and 1004. This suggests that the Middle Bronze Age field system may have been still in use, or at least visible, when the pits were dug.

One severely truncated pit (275), which was 0.50m in diameter and 0.25m deep, was thought to contain an unaccompanied cremation burial (274) because a few small fragments of what appeared to be decayed bone were seen in its fill. The latter was duly sampled and found to contain frequent small fragments and flecks of charcoal and waterlogged seeds of *Chenopodium* spp., *Rubus fruticosus/idaeus* (blackberry/raspberry), *Ranunculus* spp. (buttercups), *Sambucus nigra* (elder), but no bone was recovered.

The largest undated feature consisted of two separate lengths of a shallow ditch or gully 1003/1005. It had an irregular outline suggesting that it had become badly eroded before it finally silted up. Its fill was lighter in colour than those of other archaeological features on the site, suggesting that it might be relatively early in date. Intriguingly, it was parallel to the field ditch 1001 and had a gap, possibly an entranceway, through which ditch 1002 ran, which suggests that the feature may have been part of an earlier field or land boundary.

The pottery, by Charlotte Thompson

An assemblage of 102 prehistoric pottery sherds was recovered from eight features and has been recorded to current MoLAS standards, established in accordance with the guidelines outlined by the Prehistoric Ceramics Research Group (PCRG 1995).

The assemblage represents up to eleven decorated Middle Bronze Age Deverel-Rimbury style vessels and up to eight undecorated vessels with similar fabrics. It also includes a few sherds of Neolithic pottery. All the prehistoric sherds were made from flint-tempered fabrics and detailed examination of the fabrics distinguished five categories, which have been assigned a specific period:

FLIN1: Hard fabric with a dense matrix; moderately well-sorted common medium to very coarse (up to 4mm) crushed calcined flint; sparse very fine quartz inclusions. Thick-walled vessels. Middle Bronze Age

FLIN2: Hard fabric with slightly silty, micaceous matrix; ill-sorted moderate to common fine to very coarse (up to 8mm) crushed calcined flint; ill-sorted coarse rare quartz; rare dark (burnt organic?) inclusions; very rare coarse pink flint inclusions. One example contains rare coarse red (iron rich?) inclusions. Thick-walled vessels. Middle Bronze Age

FLIN3: Hard fabric with slightly silty micaceous matrix; moderately well-sorted moderate to common fine to very coarse crushed calcined flint; rare coarse sub-rounded quartz; occasional red (iron rich?) inclusions. Very similar to FLIN2 but FLIN3 is for thinner-walled vessels. Middle Bronze Age

FLIN4: Hard fabric with a dense, micaceous matrix; poorly-sorted moderate medium to very coarse (up to 7mm) crushed calcined flint; occasional very coarse (up to 6mm) pink flint; very rare rounded coarse quartz. Middle Bronze Age

FLIN5: Hard fabric with micaceous matrix (one example has silty matrix, other has dense); ill-sorted sparse coarse to very coarse (up to 6mm) flint; rare very coarse pink flint; very rare coarse rounded quartz inclusions. Neolithic

One of the three Neolithic sherds in FLIN5, <P1> from pit 96, is decorated with bird bone impressions, which is likely to be Mortlake-type Peterborough ware (fig 8). The two sherds from pit 84 are also likely to be Peterborough ware, and are almost certainly from the same vessel.

A plain upright rim with fingertip decoration on the top of the rim <P2> from ditch 1001, a decorative feature that also appears on <P3> from ditch 1002: this is a typical trait of lower Thames area Deverel-Rimbury urns (Barrett 1973, 123). In addition, <P3> also has an applied horseshoe lug on the exterior wall, which has been made by pinching the clay, giving it a similar appearance to fingertip decoration. This type of horseshoe decoration can be paralleled at the nearby cremation cemetery at Ashford Common, Sunbury (*ibid*, 114, no 1). Three base sherds are also from ditch 1002 (as are the remaining illustrated sherds in this report) and show that some of the vessels were straight sided at the base <P4>, whereas the lower walls of <P5> and <P6> are more convex.

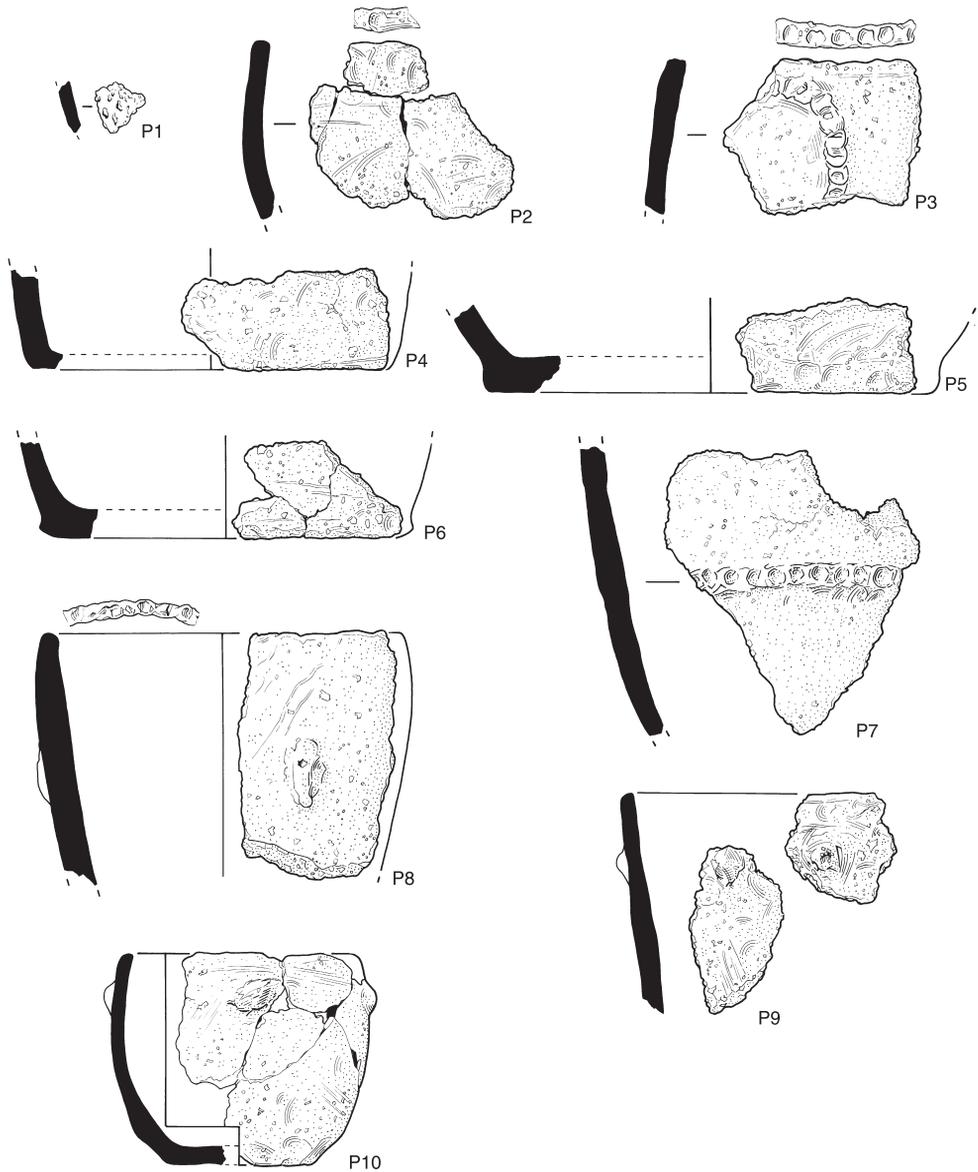


Fig 8 Ashford Hospital. Prehistoric pottery (scale 1:4): <P1> part of bird-bone impressed Peterborough ware bowl, probably Mortlake type, FLIN5; <P2> four joining sherds of the rim and wall of an urn with fingertip decoration on the rim, FLIN2; <P3> rim sherd with fingertip impressions on rim and applied horseshoe with pinched decoration, FLIN2; <P4> and <P5> bases of urns, FLIN2; <P6> three joining sherds from the base of an urn. Possibly base of <P7>, FLIN1; <P7> body sherd from an urn with applied horseshoe with fingertip decoration, FLIN1; <P8> rim and wall of urn with vertical applied lug/boss on exterior, FLIN2; <P9> rim sherd and wall sherd of urn with round applied bosses on exterior, FLIN4; <P10> complete profile of smaller urn with round applied bosses on the exterior, FLIN3. <P1> and <P2> are respectively from pit 96 and ditch 1001, all others are from ditch 1002.

A vessel from ditch 1004 (not illustrated), made from FLIN1 has a substantial cordon which may have fingertip impressions on it, although owing to the crumbly nature of the fabric it is not certain that the cordon is decorated. However, <P7> has an applied cordon on the exterior that is clearly decorated with fingertip impressions.

Applied lugs are another common decorative feature of Deverel-Rimbury-style pottery, and can be seen on <P8>. The rim has fingertip decoration on the top and a small vertical lug under the rim. The more typical round applied bosses are seen on <P9>, which are applied *c* 40mm below the rim. This type of decoration is also paralleled at Ashford Common, Sunbury (Barrett 1973, 114, no 7).

The complete profile for <P10> survives; it is *c* 110mm tall and has a row of small rounded bosses below a plain rim. It is made from FLIN3 and although it is smaller and thinner-walled than other vessels in the assemblage, there is some variation in the scale of Deverel-Rimbury-style urns (Erith & Longworth 1960, 180). The vessel differs from the globular urns from Ashford Common as they have thinner walls (3–5mm at Ashford Common, 6–15mm at Ashford Hospital), and the globular urns from this site are narrower at the neck with a wide body, and have diagonal incised line decoration (Barrett 1973, 121 and figs 15 and 16). However, <P10> is of a similar scale to an undecorated vessel found at Ashford Common (*ibid*, 115, no 18).

Other groups of Deverel-Rimbury-style pottery found in the lower Thames valley are characterised by the presence of large bucket urns and a scarcity of finer globular urns (Cotton 1981, 21), and this certainly describes the assemblage from Ashford Hospital. A number of Middle Bronze Age cremation cemeteries have been found in the lower Thames valley, and at Ashford Hospital there is a possible unaccompanied cremation in feature 275. However, there are also examples of probable Middle Bronze Age domestic sites in the area (*ibid*, 21).

Burnt clay, by Charlotte Thompson

A total of 91 pieces (198g) of burnt clay were recovered from the two Bronze Age field ditches and four pits (128, 170, 172 and 327). Although the pits did not contain any datable artefacts the presence of burnt clay in their fills suggested that they might have been roughly contemporaneous with the field.

The burnt clay pieces are all made from a soft silty/sandy fabric that is powdery to the touch. Almost all the pieces have rare to sparse coarse crushed 'pink' (uncalcined) flint inclusions; very occasionally the fabric contains organic inclusions and this gives the matrix a vesicular appearance. No piercing typical of clay weights or impressions of wattle suggesting use as daub were noted; however, given the abraded nature of the pieces it is more than likely that such indications have simply not been preserved. A piece from ditch 1002 has a marbled effect from clays being poorly mixed. This indicates that certain clays and additives were chosen and then wedged, presumably to attain a particular consistency or hardness or colour.

The flint artefacts, by Ian P Brooks with Tony Grey

A total of 29 flint artefacts were found. They include two unstratified finds and two from soil horizons, but the rest are from pits and ditches dated to the prehistoric period. Of particular note is feature 136, which contained three of the four scrapers found.

METHOD

A macroscopic evaluation of the flint artefacts was carried out. Technological aspects of the tools were described following Inizan *et al* (1992). The colour of the flint was defined using the Geological Society of America's *Rock-color Chart* (Goddard *et al* 1948)

DESCRIPTION

The assemblage comprises five scrapers, seventeen flakes or flake fragments, three worked lumps, two cores and two barely modified lumps or burnt fragments. Two of the flakes, or flake fragments, have either edge damage or limited retouch suggesting a degree of use. Visually the assemblage can be divided into two groups reflecting the artefact types, quality of knapping and flint type used.

The first is a small group of probably Early to Middle Neolithic tools. The finds are distinctive in the high quality of the flint and in the quality of the knapping strategy employed. Five of the eight artefacts in this group are of a semi-translucent, dusky brown (5 YR 2/2) flint with a fresh cortex suggesting a direct chalk source. They comprise three large scrapers from pit/ditch 136, a utilised tertiary blade from field ditch 1002 and a single platformed blade core from pit 319 (fig 9). The others comprise a small convex side/end scraper of grey flint from soil horizon 398, an unstratified tiny, fully utilised flake core of black flint with two opposed platforms. All the scrapers are well made on large tertiary flakes or blades.

The second group is probably broadly Bronze Age in date and may be contemporary with the Middle Bronze Age activity on the site. It consists of 21 artefacts that are much more variable in appearance and in the raw materials used. The flint varied between an opaque light grey (N7) and a translucent pale yellowish brown (10 YR 6/2), while the cortex was generally worn or pitted. This would suggest that a derived flint source was being exploited, possibly a gravel or Clay-with-flints deposit. The flakes tend to be cruder and smaller than those used for the artefacts already discussed and there are a small number (three) of roughly worked lumps of flint. This would suggest a more *ad hoc* approach to the knapping strategy. Only one scraper, from pit 96, could be assigned to this group. This was formed by minimal retouch along the distal end of a primary flake.

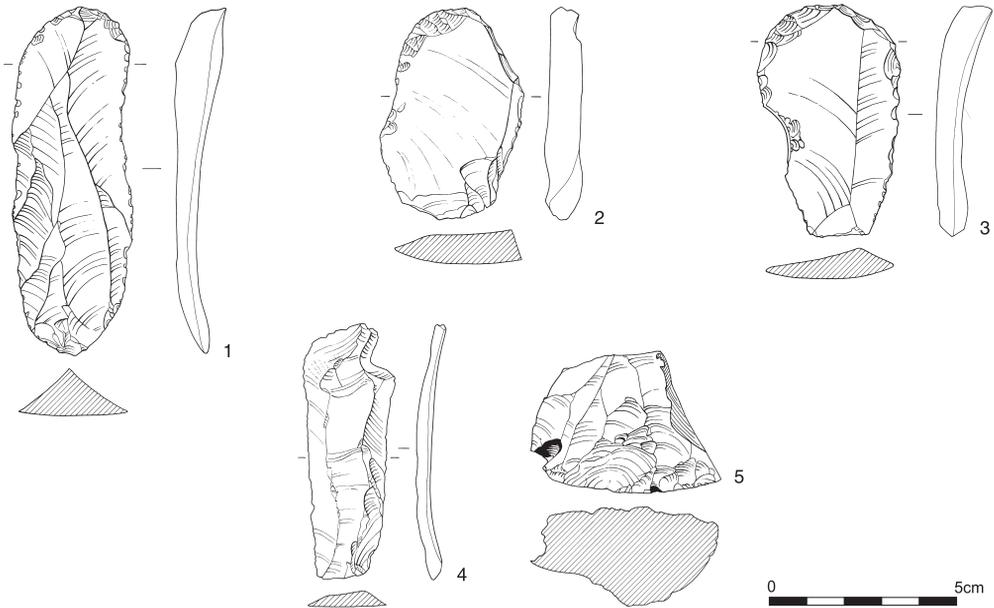


Fig 9 Ashford Hospital. Neolithic flint: scrapers from feature 136 (1–3), a tertiary blade from enclosure ditch 1002 (4), a core from pit 319 (5). (Scale 1:2)

The plant remains, by John Giorgi

METHOD

Samples of between 5 and 30 litres of fill were collected from seven pits, two postholes, a ditch and a pit suspected of containing a cremation burial for the recovery of plant and animal remains. Three features (ditch 150 and pits 103 and 126) were dated to the Bronze Age. The others were undated, but were also probably prehistoric.

The samples were processed on a modified Siraf flotation tank with sieve sizes of 0.25mm and 1mm for the recovery of the flot and residue respectively. Nine of the eleven samples produced flots, which were scanned using a binocular microscope and the item frequency and species diversity of all biological remains was recorded and entered into an Oracle database. The residues were sorted for biological remains and artefacts.

CHARRED PLANT REMAINS

The charred remains in the flots and residues consisted of small quantities of very fragmented charcoal, present in seven of the flots. The quantities, however, were small, with the exception of large amounts (more than 50 items) in the samples from pits 103 and 126. Some of the flecks and very small fragments of charcoal may be intrusive, possibly travelling down the soil profile in cavities left by decaying roots and burrowing insects. Nevertheless, radiocarbon dating suggests that the larger quantities and fragments in samples from pits 103 and 126 were contemporaneous with the deposits.

WATERLOGGED PLANT REMAINS

Varying quantities of plant remains preserved by waterlogged conditions were present in all of the samples, although these mainly consisted of rootlets and very fragmented wood and were possibly intrusive. Small numbers of fruits and seeds were also noted in all nine flots, but with a very limited species diversity consisting mainly of plants of disturbed (including cultivated) ground and waste places, particularly goosefoots etc (*Chenopodium* spp.) and also nettles (*Urtica* spp.), bedstraw (*Galium* spp.), buttercups (*Ranunculus* spp.), elder (*Sambucus nigra*) and blackberry/raspberry (*Rubus fruticosus/idaeus*). Rushes (*Juncus* spp.), wetland plants, were represented in the sample from pit 103. The richest waterlogged plant assemblage in terms of fruits and seeds (more than 50 items – listed in the site archive) was from the sample from pit 126. While the waterlogged seed remains from these two pits might be contemporaneous with the features it seems more likely that they are intrusive.

Radiocarbon dating

Radiocarbon dates were successfully obtained from samples of charcoal from pits 103 and 126, which were sent to Beta Analytic Radiocarbon Dating Laboratory, Florida, for dating (table 1). As both samples were small the analysis was undertaken with extended counting for enhanced precision.

Table 1 Radiocarbon dates for charcoal samples from pits 103 and 126

Feature	Material	Laboratory code	Radiocarbon Age BP	¹³ C/ ¹² C ratio	Calibrated date range (95% confidence)
Pit 103	charcoal	Beta-193984	3450 ±90 BP	–25.2 0/00	Cal BC 1970–1520
Pit 126	charcoal	Beta-195870	3460 ±100 BP	–25.0 0/00	Cal BC 2030–1520

Discussion: the site and its environs in the Neolithic and Bronze Age

The site lies in an area rich in prehistoric (and later) remains, which have been revealed by large-scale excavation in advance of development and gravel extraction, and by fieldwalking and aerial photography (Brown & Cotton 2000; Cotton 2000; 2004; Lewis 2000; Needham 1987; Thompson *et al* 1998, 78–84, 88). The following discussion compares the evidence from the site with that from its environs.

NEOLITHIC

During the Neolithic tracts of woodland on the gravel terraces in the locality of the site were apparently cleared for farming and the construction of large earthwork monuments. Pollen recovered from sediments at Runnymede Bridge, Staines Moor and Perry Oaks, respectively about 4.5 and 3.5km to the west and 2.5km to the north, suggest that the scale of local deforestation varied considerably at this time (Keith-Lucas 2000, 92; Lewis & Welsh 2004, 107–8; Needham 2000, 194–5) – perhaps indicating a still largely wooded landscape with isolated, but extensive, clearings. Evidence for the settlements of local farming communities is ephemeral and mainly comprises pits and finds of pottery and struck flints, although traces of a few structures have been found (Cotton 2004, 24–6; Field & Cotton 1987, 74–9).

The earliest activity on the site at Ashford Hospital dates to the Neolithic period and is represented by a handful of potsherds and well-made flint artefacts, most of which were recovered from just three features. The raw material for the flint artefacts was probably obtained from a chalk source. The limited range of the flint artefacts and their quality and large size suggest that they may have been selected for deposition. In particular, the concentration of three scrapers in feature 136 suggests that they had been deliberately placed, perhaps as votive offerings. Similar deposits of fine flint artefacts and pottery have been recovered from pits and ditches at nearby sites, such as Imperial College Sports Ground, Harlington, Cranford Lane and possibly Nobel Drive (Crockett 2001, 297; Elsdon 1997, 11–12).

Although the evidence for possible ritual activity on the site was on a modest scale, possibly involving only a small group of people or an individual, it should be seen against a backdrop of a local landscape dotted with major earthworks, reflecting communal activity on a much larger scale. Such earthworks have been mapped from crop marks recorded by aerial photography and in many cases investigated by excavation and fieldwalking. The largest was the Stanwell cursus, which comprised two parallel ditches, 22m apart and over 3.6km long, with a central bank between them that possibly served as an elevated causeway or ‘processional route’ (Lewis 2002; Lewis & Welsh 2004). The cursus has been mapped intermittently on a north-north-west to south-south-east alignment from its terminal near Bigley Ditch to a point 1.5km north of the site, where it disappears beneath the built-up area of Stanwell (Barrett *et al* 2000, 196–8; O’Connell 1986; 1990, 9, 25–9, 33–5; Poulton 1978).

Other major foci close to the site included a causewayed enclosure at Yeoveney Lodge, 4km to the west (Robertson-Mackay 1987), a horseshoe-shaped earthwork at Perry Oaks, and hengiform monuments at Ashford Prison, and possibly Perry Oaks and Mayfield Farm (Barrett *et al* 2000, 196, 198; Carew *et al* 2006, 17–21; Cotton 2000, 17). The earthworks at Mayfield Farm, 1.5km to the east, are known from crop marks that form two concentric circles. They have been variously interpreted as a possible Neolithic causewayed camp, a hengiform monument or a Late Bronze Age defended settlement (Brown & Cotton 2000, 73; Cotton *et al* 1988; Lewis 2000, 71; Palmer 1976, 186). The latter now seems unlikely, however, as it appears that the inner ditch had probably silted up by the Late Bronze Age.

EARLY BRONZE AGE

Hitherto, little archaeological evidence in the locality has been assigned to the Early Bronze Age apart from nine ring ditches between Stanwell and West Bedfont, which probably mark the position of round barrows dating to this period. These would appear to represent a barrow cemetery strung out along the edge of the Taplow terrace, which would have been clearly visible against the skyline from the Ashford Hospital site (Brown & Cotton 2000, 85; Needham 1987, 106).

Pits containing burnt flint

At Ashford Hospital the two small pits containing burnt flint played an important role in dating elements of the site sequence. Their positioning, in the entrance of the field represented by ditches 1001 and 1002 and the middle of backfilled waterhole 106, appears to have been both deliberate and significant. It suggests that they were connected with the laying out of the field and the abandonment, and possibly the replacement, of the waterhole. If this were the case then it would appear that the field system, and others like it in the surrounding area, might have their origins in the Early rather than the Middle Bronze Age. This would significantly narrow the apparent Early Bronze Age hiatus in activity in the region.

The pits also have wider significance when placed in the context of the growing body of evidence for ritual activity in the Early Bronze Age landscape, which included the carefully placed dismembered remains of an aurochs, found with six barbed-and-tanged arrowheads in a pit at Holloway Lane, near Harmondsworth (Brown & Cotton 2000, 83, 86; Cotton 1991, 153–4; Cotton *et al* 2006).

Exactly what the activities were at the Ashford Hospital site is unclear. Similar pits filled with burnt flint have found at sites around Heathrow (eg Perry Oaks), and it has been suggested that they may have been associated with some form of crop processing, or possibly sweat lodges or saunas (Barrett *et al* 2001, 224). None of these pits, or the features at Ashford Hospital, contained burnt bone, so they do not appear to be associated with funerary practice or feasting. One possibility is that the pits at Ashford Hospital represent a ceremony or event marking an important stage in the development of the field system. At sites such as Perry Oaks, Cranford Lane and Phoenix Wharf, Southwark, burnt flint deposits appear to be associated with early phases of 'land grab' prior to an intensification of agricultural activity (Sidell *et al* 2002, 31).

EARLY/MIDDLE BRONZE AGE

Waterholes

Two types of waterholes have been found at nearby sites: very large ones with access ramps and slightly smaller ones with very steep sides (Barrett *et al* 2001, 23–4; O'Connell 1990, 40–43). The two at Ashford Hospital fall into the latter category. Water could only be obtained from this type by either drawing it up in a container on a rope or by climbing down into the waterhole, perhaps by using a log ladder, such as those found in waterholes at Imperial College Sports Ground and Perry Oaks. The water was probably used for domestic purposes in the putative settlement on the east side of the enclosure. It may also have been used for watering livestock in the field, although a waterhole with an access ramp may have been a more effective way of achieving this. No artefacts were recovered from the excavated halves of the waterholes at Ashford Hospital, but at other excavation sites waterholes have yielded a range of objects that had almost certainly been deposited as votive offerings (Cotton 2004, 29). It is also evident that some Bronze Age waterholes remained in use for hundreds of years (Brown & Cotton 2000, 88). As the two at Ashford Hospital were probably successive it seems likely that their combined span of active use would have been considerable.

The field system

The archaeological evidence shows that during this period the local landscape changed dramatically as large tracts of land were divided and enclosed by so-called ‘Celtic’ fields, which generally shared two common axes. Today these co-axial field systems are mainly visible on excavation sites as ditches marking the boundaries of fields (Brown & Cotton 2000, 88–89; Cotton 2000, 20–21). Very occasionally evidence survives for banks and hedges (the latter suggested from pollen) alongside field ditches (Barrett *et al* 2001, 223), although none was found at Ashford Hospital. Environmental data is scarce, but pollen from Staines Moor and Runnymede Bridge, and increased alluviation at the latter, suggests that major clearance of woodland occurred at about the time the field systems were laid out (Keith-Lucas 2000, 92; Needham 2000, 201).

Some fields in the locality were probably used for arable farming, but others appear to have been designed to hold livestock at least occasionally. For example, the corner location and the shape of the entrance to the field at Ashford Hospital strongly suggest that the field was used as a stock enclosure. In particular, the funnel-shaped configuration of the entranceway, which was capable of holding only a small number of animals, would have facilitated the inspection and sorting of livestock. Likewise, at other sites of this period features such as corner entrances, narrow droveways and waterholes with access ramps, might be taken as indicators that such field systems were designed for the management of large herds of stock (Pryor 1996; 1998, 100–108). The remains of co-axial field systems have also been recorded nearby (within 1.6km) at Stanwell, Ashford Prison and Hengrove Farm (Carew *et al* 2006, 31–9; Hayman 2005; Knight 1997, 13–14; O’Connell 1990, 36–7). Similar evidence has been found further north at numerous sites around Heathrow Airport (Yates 2001, 67–9). Interestingly, the fields at the Ashford Hospital site were apparently on similar alignments to those at Ashford Prison and Hengrove Farm (Carew *et al* 2006, 38; Hayman 2005). The extent and regularity of the field systems in the area imply a considerable degree of social cohesion and organisation.

Settlement

Most of the pottery from the site and several struck flints were found in field ditch 1002, which suggests the presence of a settlement site immediately to the east of the enclosure. A settlement in this location would have been conveniently close to the waterhole and enclosure entrance, and may have been partially protected from the prevailing wind by the enclosure bank and hedgerow.

Other settlement sites have been identified with varying degrees of confidence within field systems in the surrounding area from the presence of pits, waterholes, scatters of pottery and other artefacts and, very occasionally, from traces of buildings and structures. They include occupation sites at Hengrove Farm and Stanwell (Hayman 2005; O’Connell 1990, 37–9), and others in and around Heathrow Airport (Close-Brooks 1993, 330–31; Elsdon 1996; Farwell *et al* 1999, 13–17).

Cremation burial

Although a considerable number of cremation burials had been discovered in the surrounding area none were found at Ashford Hospital. The most important burial site in the locality was the large cremation cemetery at Ashford Common, 4.25km to the south-east, where at least 72 urns were recovered during excavations in the 19th century (Barrett 1973, 111–16; Roberts 1871). Another cemetery may have been located about 3km to the south-east of Ashford Hospital at Littleton Common, at the north-east corner of Queen Mary Reservoir, where a single urn containing a cremation and sherds from three other urns were found (Barrett 1973, 116). Other cremation burials, with and/or without urns, have been found at several sites

to the north of Heathrow Airport (Brown & Cotton 2000, 89; Crockett 2001, 298; Elsdén 1996; Farwell *et al* 1999, 11–12).

Interestingly, some urns from Ashford Common displayed decorative features similar to those on pottery from Ashford Hospital. Therefore, it is possible that some pottery from the latter may have come from disturbed burial urns. However, considering its provenance it seems more likely that the pottery from Ashford Hospital derives from domestic vessels, especially as Deverel-Rimbury-type urns are also well represented at settlement sites in west London (Brown & Cotton 2000, 87).

FUTURE WORK

The archaeological evidence from the site provides information about elements of the local prehistoric landscape. The data will contribute to our understanding of how Neolithic and Bronze Age communities living in the area interacted with the environment and adapted it to their changing social and economic needs. Nevertheless, the site investigated at Ashford Hospital represents a relatively small area of the total excavated on the gravel terraces of the surrounding area, and should not be considered in isolation. To this end it is vital that the data from Ashford Hospital and other excavation sites in the area are eventually integrated, mapped and synthesised. Emphasis should also be placed on obtaining radiocarbon dates from Late Neolithic and Early Bronze Age sites in order to refine existing models of landscape change and ritual activity in the locality.

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