Excavations at Duffield House, Woodley, Berkshire

by Alan Hardy
with contributions by A Barclay, P Bradley and R Gale

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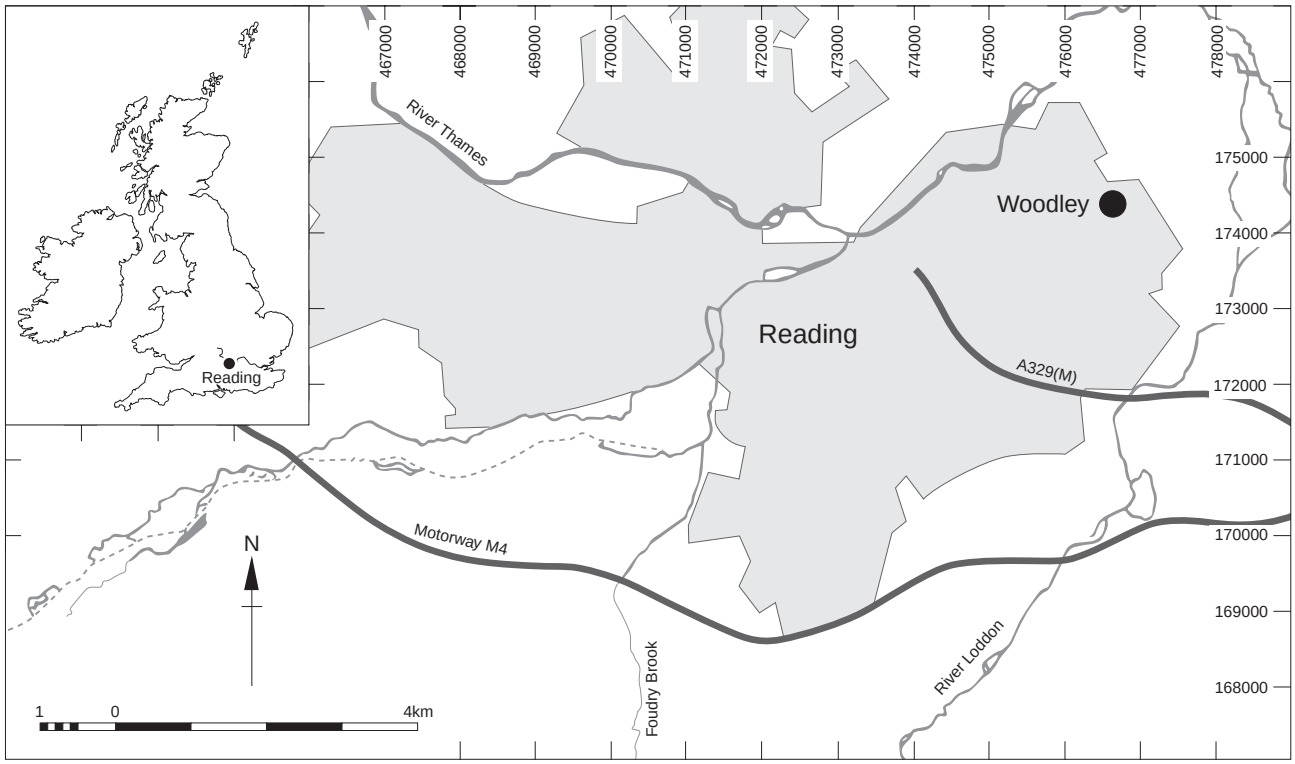

Figure 1 Site location

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SUMMARY

Excavations by the Oxford Archaeological Unit on the site of a proposed development in the grounds of Duffield House, Woodley, Berkshire, revealed a small area of Bronze Age activity. This comprised a spread of burnt flint with associated gullies and pits that probably related to a settlement in the near vicinity. Post-medieval field boundaries were also uncovered in addition to further evidence of recent landscaping, resulting from the construction of the railway to the west and to the building of Duffield House itself.

INTRODUCTION

The Oxford Archaeological Unit (OAU) carried out an excavation in the grounds of Duffield House, Woodley, Berkshire in March 1995. The excavation was undertaken on behalf of Bewley Homes plc as a condition of Planning Application No. 42699, on the advice of Babtie Public Services (consultants for Berkshire County Council). The work followed an archaeological evaluation of the site by the OAU in November 1994 which suggested that certain areas might contain significant archaeological deposits, warranting full excavation and recording prior to development.

Location and topography *(Figure 1)*

The site lies on the gravel terrace approximately 1.2 km to the south of the river Thames, on the eastern outskirts of Reading (centred at SU 766 744). Evidence of Palaeolithic, Mesolithic and Neolithic activity has been recorded in the general area, and probable Bronze Age burial mounds have been identified 1 km to the north (Gates 1975; Ford 1987). There was no recorded development of the site until the 1930s when Duffield House itself was built with adjoining landscaped gardens. The gardens covered an area of approximately 1 hectare in 1995 and backed onto a cutting of the Great Western Railway to the west. The general topography of the gardens was level at 52.60 m OD, although the western end had been lowered by approximately 0.70 m.

The evaluation

The evaluation in 1994 consisted of six trenches, each measuring approximately 25 m in length and 1.5 m in width (OAU 1994). The trenches were machined to the first archaeologically significant horizon under direct archaeological supervision and samples of 50 litres of soil were hand-sieved through 25-mm mesh from both ends of each trench. Six linear features and three postholes were identified. The linear features were interpreted as enclosure ditches, possibly Bronze Age in date, although the dating evidence was limited. A layer of burnt flint, with a maximum depth of 0.3 m, was revealed approximately 7 m to the north-east of the postholes and 2.5 m to the north-east of ditch 615 = ditch 747 in the excavation.

The excavation *(Figure 2)*

Four areas were detailed for initial investigation, and a fifth area, partly under the footprint of Duffield House itself, was designated. This would be investigated after the demolition of the house. Areas 1–4 targeted the linear features and the flint mound identified in the evaluation. Each area was stripped of topsoil and subsoil to the level of natural gravel or to the highest significant archaeological horizon. The resulting surface was then manually cleaned where necessary. Archaeological features were identified, half-sectioned or fully excavated as appropriate, planned and photographed. Environmental samples were taken from five contexts and these are reported on below. All excavation and recording was carried out in accordance with standard OAU procedures.

Once it became apparent that the significant archaeological deposits were confined to a small area in the west of the garden, and after consultation with Chris Moore, Assistant County Archaeologist with Babtie, Areas 2 and 5 were abandoned and Area 1 was considerably reduced in size.

ARCHAEOLOGICAL DESCRIPTION

Bronze Age activity *(Figures 3 and 4)*

Evidence of Bronze Age activity was confined to the eastern half of Area 4 and the north-western corner of Area 3, an area of approximately 140 m^2. The surface of the orange/brown natural gravel (714) varied from 52.05 to 51.85 m OD. This was overlain by a layer of fine pale yellowish brown sandy silt (757), up to 0.15 m

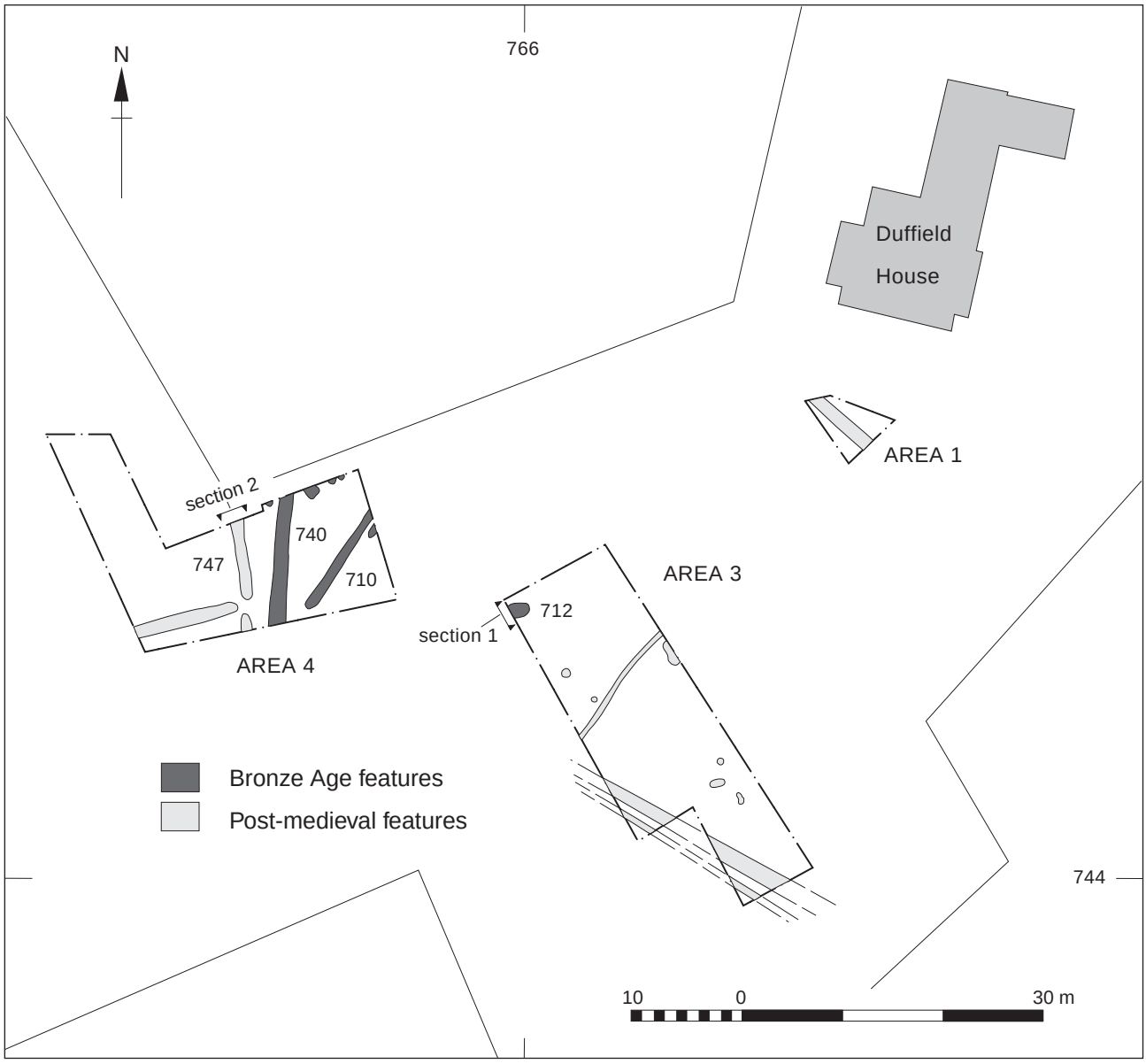

Figure 2 Plan of excavated features

deep. Inclusions of coarse pebbles and flint nodules were noted in this layer. All features were cut into layer 757.

Two linear features were identified. A shallow bowl-shaped ditch with a distinct slot in the bottom (740), passed across the site in a north-south direction (Fig. 4.6). A steep sided gully (710) oriented north-east – south-west terminated 0.80 m from the east side of 740 and within 0.40 m of the southern baulk (Fig. 4.3–5). The fill of both linear features was a grey sandy silt with a high gravel content in the primary silting, although distinct horizons within the fills were not apparent. The terminal of a possible ditch, or an irregular pit (730) lay approximately 0.8 m to the south-west of 710 with a similar alignment and depth. This feature contained a relatively large quantity of charcoal.

A dark grey layer (742) of shattered burnt flint and pebbles, mixed with charcoal, was partly revealed against the northern baulk. This 'burnt mound' deposit was up to 0.30 m deep and extended to 3 m west of 740, overlying the subsoil 757.

An apparently rectangular pit (734) was partly revealed against the northern baulk, on the east side of 740. This was oriented north-west by south-east and had a flat bottom and vertical sides, 0.35 m deep. The single fill (735) of this pit was a mix of shattered burnt flint and pebbles, and charcoal, indistinguishable from 742. In section (Fig. 4.6) it was observed that 735 formed a slight mound above the edge of the cut 734. Between the western edge of 734 and the eastern side of 740, was a layer of dark sandy silt with a high percentage of burnt

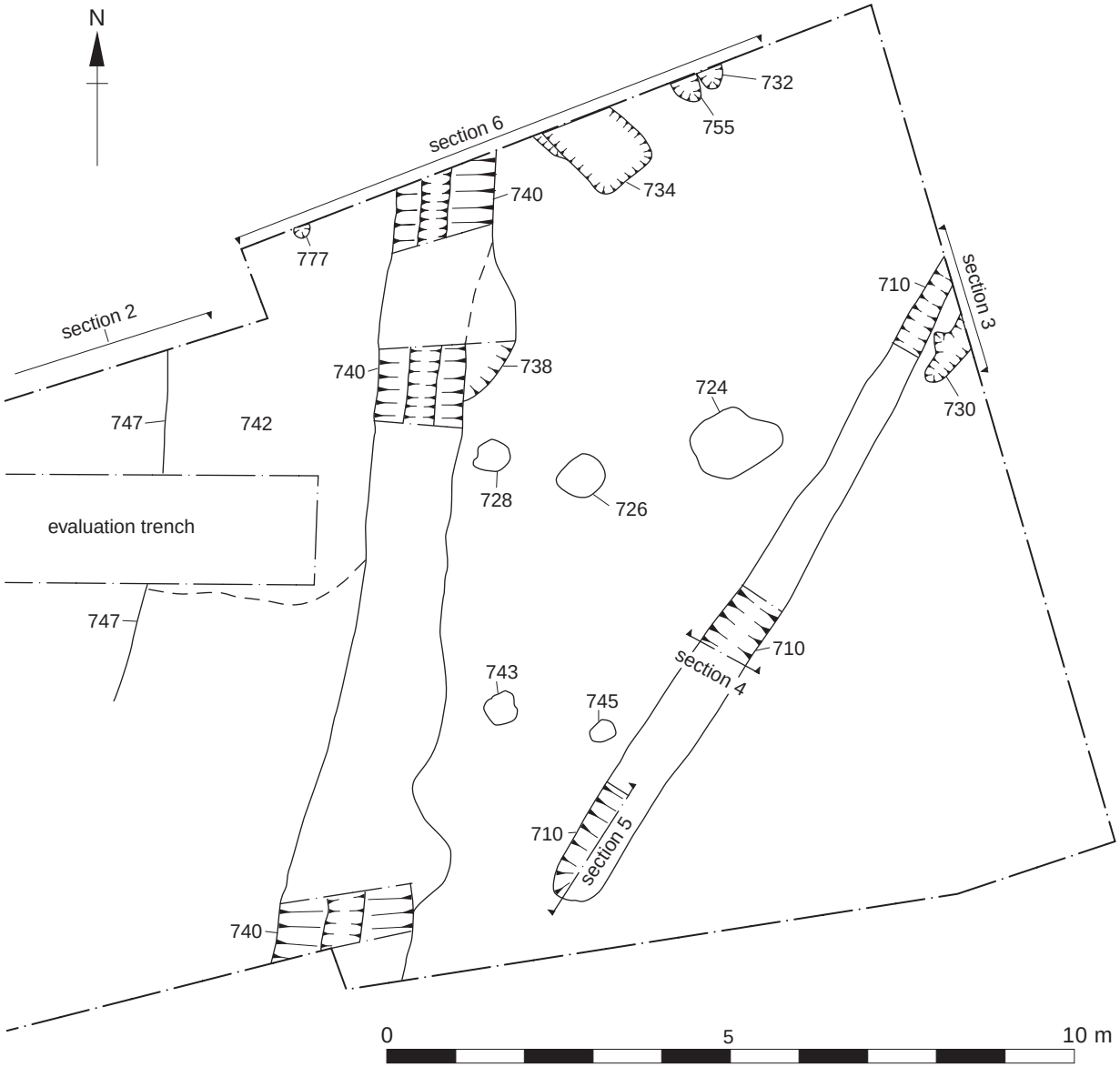

Figure 3 Area 4: Bronze Age features

flint, apparently spillage from the mound of material within 734. A further small deposit of mixed burnt flint and charcoal was found in a small depression on the east edge of gully 710. The features were, therefore, open when the burnt mound was in use and subsequently the burnt material was deposited in the features.

No bone was found within any of the burnt flint deposits, and the only ceramic dating evidence was one small fragment of Bronze Age pottery found against the south side of pit 734. All the burnt flint deposits were sampled.

In the triangle formed by 710, 740 and the northern baulk was a scatter of shallow sub-circular features (724, 726, 728, 732, 743, 745 and 755), none more than 0.10 m deep. One definite posthole (777) was located, partly revealed against the northern baulk, approximately 1.5 m to the west of 740 and sealed by the burnt layer 742 (Fig. 4.6).

A further small area of the sandy silt layer 757 was revealed in the north-west corner of Area 3, cut by a steep sided feature (712) that represented either a pit or the east terminus of a west-east aligned ditch (Fig. 4.1). No dating evidence was recovered but the character of the fill was similar to the features in Area 4, suggesting a possible Bronze Age date for 712.

All of the features were sealed by a relict topsoil (709) with an average depth of 0.12 m. No dating evidence was recovered from this layer. A later, probably medieval, ploughsoil (776) and modern landscaping and topsoil (702 and 701) sealed layer 709.

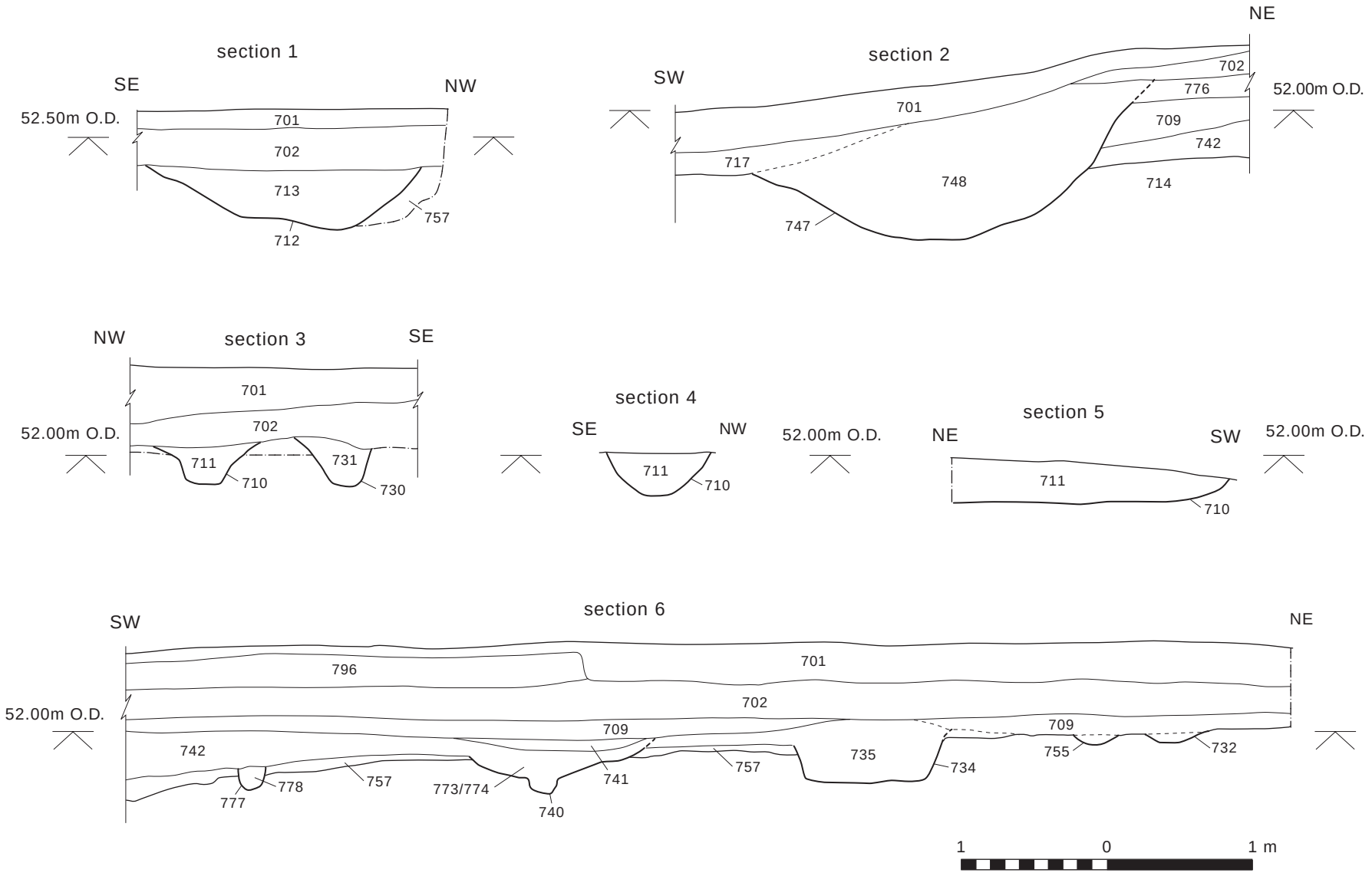

Figure 4 Sections

Post-medieval activity *(Figure 2)*

All the linear features located by the evaluation trenches were revealed and partially excavated. These consisted of ditch 703 in Area 1, parallel ditches 705 and 707 in Area 3 and ditches 715, 747, and 766 in Area 4. All were cut through the ploughsoil (702). The dark brown silty loam fills of these features were noticeably different from the fills of the Bronze Age features. Fragments of post-medieval roof tile were present in modern ditches 703 (Area 1) and 705 (Area 3) and in modern suboval feature 749 (Area 4).

THE FINDS

The pottery *by Alistair Barclay*

The excavations produced two sherds of pottery with a combined weight of 23 g. One of the fragments came from a secure context.

Pit 734 *(fill 735)*: later Bronze Age, plain body sherd (14 g). Thickness 8 mm. Fabric: common fine angular flint (< 2 mm). Colour: exterior: light brown, interior and core: grey.

Layer 700 *(finds reference for machining) SF 21*: medieval, base sherd (9 g). Thickness 7 mm. Fabric: abundant coarse quartz sand (< 1 mm). Colour: exterior: buff, core: grey; interior: buff.

Discussion

The flint-tempered sherd from pit fill 735 is not closely datable as this type of fabric was manufactured during both the middle and late Bronze Age (*c.*1800–700 cal BC). The recovery of this sherd from a burnt mound deposit is an important association. The sherd is neither burnt nor refired and, therefore, may not be contemporary with the mound. The sherd most probably was incorporated into the deposit after whatever firing activity had taken place. It could be redeposited and perhaps only provides a *terminus post quem* for the pit deposit.

The worked flint *by Philippa Bradley*

An assemblage of 43 pieces of worked flint and 455 pieces of burnt unworked flint was hand-retrieved from a series of features and a burnt spread. In addition, almost 15 kg of burnt unworked flint and stone was recovered from sub-samples of fills from selected contexts. The assemblage is summarised in Table 1 and selected artefacts are illustrated in Figure 5.

Raw material

The flint is orange brown in colour with a thin brown cortex. The flint has some cherty inclusions giving it a speckled appearance. Cortication was generally light. This material was probably obtained locally from river gravels.

Burnt unworked flint and stone

Sub-samples taken during the flotation programme were sieved to retrieve artefacts and burnt unworked flint and stone. All the residues, except the 4–2 mm ones, were scanned by the writer for artefacts. Two unburnt chips were found but no burnt artefacts were identified. Samples of the burnt flint and stone from a selection of contexts were retained and these have been held in the archive. The material consists of relatively small, spherical or sub-spherical pebbles and larger shattered fragments of flint, sandstones and quartzites. The pebbles weighed between 35–67 g, the shattered fragments weighed between 46–67 g. The material is generally very heavily calcined although there was some slightly less heavily crazed material. The flint and stone varied in colour from grey, white, bluish-grey to several shades of red.

Table 1 Flint assemblage composition

Context	Flakes	Chips	Irregular waste	Cores, core fragments	Retouched forms	Total	Burnt unworked flint*
Pits, postholes, gullies and ditches	11	-	-	2 (both core fragments)	1 (piercer)	14	404
Burnt spread	1	2	-	-	-	3	1
Topsoil, subsoil, machine cleaning etc.	20	-	2	2 (1 multi-platform flake core, 1 tested nodule)	2 (1 piercer, 1 retouched flake)	26	50
Total	32	2	2	4	3	43	455

* Hand-retrieved; 14.95 kg burnt unworked flint and stone was recovered from sub-samples from selected contexts

Table 2 Burnt flint weights and densities

Cxt No.	Context type	SS No.	Vol (l)	Burnt Flint Weight (kg)		Burnt Flint Density (kg/l)		
				>10 mm fraction	10-4 mm fraction	>10 mm fraction	10–4 mm> fraction	4 mm fraction
742	burnt mound	7	8	1.95	1.20	0.24	0.15	0.39
731	fill of pit 730	5	10	2.50	1.90	0.25	0.19	0.44
735	fill of pit 734	6	10	2.50	2.35	0.25	0.24	0.49
773	fill of ditch 740	9	12	0.92	1.63	0.08	0.14	0.22

Description

The assemblage contains no diagnostic artefacts for dating purposes. However, some information can be gained from the technology of this small assemblage: flakes are mostly hard-hammer struck and there was no evidence for platform preparation. One or two blade-like flakes were recovered although these were again hard-hammer struck and, therefore, may not be intentional products. The cores and core fragments have been irregularly worked. Incipient cones of percussion were noted on some pieces, and this is an indicator of loss of control during knapping (Brown 1992, 92; Montague 1995, 22). The technology of this small flint assemblage and the quantities of very heavily calcined unworked flint and stone would suggest a mid-late Bronze Age date. The fill of pit 734 contained two flakes and a quantity of burnt unworked flint in addition to a single sherd of later Bronze Age pottery (fill 735).

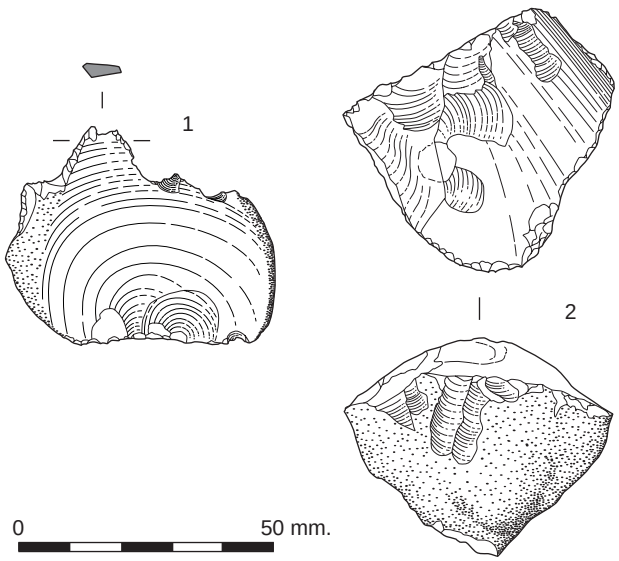

Figure 5 Flint

Discussion

The decline in flintworking skills during the later Bronze Age is now well established (Ford *et al.* 1984). The technology of the flint is classic of this period with little concern for platform preparation or maintenance. Few retouched forms are present and there are quantities of burnt unworked flint and stone. The retouched forms present are very minimally retouched and form part of an expedient toolkit, providing pieces which would carry out the required task more efficiently than metal tools.

Apart from superficial contexts, burnt flint and stone were recovered from a limited number of contexts across the site: the burnt spread 742 (2 pieces hand-retrieved and a minimum of 3.15 kg from flotation), ditch 740 (65 pieces and a minimum of 2.55 kg), pit 734 (a minimum of 4.85 kg), ditch 710 (62 pieces) and possible ditch 730 (a minimum of 4.4 kg). Table 2 details burnt flint weights and densities. Burnt unworked flint was relatively thinly distributed from the evaluation contexts apart from ditches 615 and 617, which each produced 116 pieces. Burnt unworked flint and stone appears to be particularly common on later prehistoric settlements. This material has been associated with various activities including cooking, saunas or the preparation of temper for pottery (Hodder and Barfield 1990).

Mid-late Bronze Age flintwork has been recovered from a variety of sites in the Reading area, for example, Reading Business Park (Brown 1992), around Burghfield (Butterworth and Lobb 1992) and Bray (Montague 1995). Burnt 'mounds' or spreads have been frequently found by old stream channels, for example, at Anslow's Cottages, Burghfield (Butterworth and Lobb 1992) and Reading Business Park Phase 2 (Brossler and Early in preparation).

Illustrated catalogue *(Figure 5)*

1. Piercer, on a hard-hammer struck flake. Context 711, SF 76.
2. Multi-platform flake core, few removals and some incipient cones of percussion. Sand-glossed. 130 g. Context 700 (cleaning layer), SF 12.

THE ENVIRONMENTAL REMAINS

The charred remains *by Rowena Gale*

Introduction

Excavations at Duffield House located deposits of charcoal associated with a ditch, a gully, a spread of burnt flint and pits. All of these features were thought to be contemporary and probably date to the Bronze Age. Charcoal samples were processed and examined to identify the wood. Evidence for specific uses of woodland resources and environmental information was sought.

Materials and methods

The samples consisted mainly of small quantities of charcoal, although those from features 730 and 734 were comparatively large. Fragments measuring >2 mm^2 in cross-section were examined; smaller pieces do not usually warrant examination since this can be time consuming and unproductive.

The charcoal from all contexts was poorly preserved and, frequently, reddish deposits had permeated through the cellular structure blocking vessels and obscuring diagnostic details on the cell walls. Some fragments had lost structure through burning at high temperatures.

The samples were prepared for examination using standard techniques. Fragments were fractured to expose fresh transverse surfaces and sorted into groups based on the anatomical features observed using a x 20 hand lens. Representative fragments from each group were selected for detailed examination. These were fractured to expose the tangential and radial longitudinal surfaces, supported in sand and examined using a Nikon Labophot incident-light microscope at magnifications of up to x 400. The anatomical features were compared to reference slides and the identified charcoal was bagged and labelled.

Results *(Table 3)*

The following taxa were identified; *Alnus* sp. (alder), *Corylus* sp. (hazel), *Fraxinus* sp. (ash), *Ilex* sp. (holly), Pomoideae, subfamily of Rosaceae which includes *Crataegus* spp. (hawthorns), *Malus* sp. (apple), *Pyrus* sp. (pear), *Sorbus* spp. (rowan, whitebeam, wild service). These genera are anatomically similar.

The main feature distinguishing hazel from alder is the number of bars present on the scalariform perforation plates in the vessel wall. The size of the cell wall pitting and presence of spiral thickening is also significant. In fragments where cell walls and perforation plates were heavily contaminated with extraneous deposits it was not possible to separate these genera. In some samples either hazel or alder, or both, were securely named.

Context 711: charcoal was sparse in the fill of the terminal of 710 (sample 1) and included gorse/broom and possibly oak. The single possible oak fragment was too small to allow the preparation of longitudinal surfaces and the identification was based on the transverse surface only. The fragment appeared to be from slow-grown heartwood.
Context 731: the fill (sample 5) of 730 included a large mass of charcoal which consisted mainly of oak (stem and heartwood), hazel and possibly alder although this last was not confirmed. Holly was also present.
Context 735: a large quantity of charcoal (sample 6) was retrieved from the fill of 734 but most of the fragments were small (< 2 mm^2 in TS). Oak (stem and heartwood) predominated; hazel, alder, ash and Pomoideae (hawthorns etc.) were also present.
Context 727: sample 8 from the fill of 726 consisted of a few pieces of very small fragments of charcoal. A single piece of oak was identified. A partially vitrified portion of herbaceous stem was also present.
Context 773: a few scraps of ash charcoal (sample 9) were found in the fill of 740

The use of woodland resources

The origin of charcoal excavated from features such as pits, ditches and gullies, with no evidence of *in situ* burning, is generally unknown but its presence can often be attributed to redeposited debris, for example, fuel from hearths. Alternatively, unrecorded wooden structures or barriers previously associated with, or close to, the ditch or gully may have given rise to the charcoal. Charcoal from the mound can be more confidently assigned to fuel residues.

The range of taxa identified was relatively narrow and mostly included woods with high calorific values, eg. oak and ash, holly, gorse, Pomoideae, hazel, and may indicate preferential selection of species. In contrast, alder wood is difficult to ignite and burns slowly when used in an open hearth. The mixture of heartwood and narrow stem/twig or branch implies that wood was gathered from oak trees of some maturity rather than from coppiced or pollarded trees. Charcoal from other taxa was mostly too fragmented to assess its origin from young stems, although some pieces of hazel and alder appeared to have narrow dimensions.

The environment

The relatively few taxa identified probably imply some preferential selection of species and, as such, are unlikely to represent the complete range of trees and shrubs occurring in the region. Assuming that wood or fuel was gathered very locally, the charcoal analysis provides a useful record of species growing close to the site. The number of samples examined was small, but nonetheless, indicates the presence of oak and ash, perhaps in mixed deciduous woodlands with hazel and holly as understorey. Marginal woodland or more open areas may have been colonised by gorse, hawthorn, holly and hazel. Alders grow in damp or boggy soils, sometimes growing densely as carr woodland.

The dominant species (oak and hazel/alder) were more or less consistent throughout the samples suggesting an element of preferential selection. Evidence of coppicing or woodland management was inconclusive.

Table 3 Charred remains

Context	Feature	*Alnus/Corylus*	*Fraxin*	*Ilex*	*Pom*	*Quercus*	*Ulex/Cytisus*
711	gully 710	-	-	-	-	?1	1
727	pit 726	-	-	-	-	1	-
731	?gully 730	66	-	1	-	89	-
735	pit 734	10	1	-	1	71	-
742	burnt mound	43	21	-	-	18	-
773	ditch 740	-	2	-	-	-	-

DISCUSSION

Bronze Age activity

The scarcity of evidence for domestic activity suggests that the area in question probably lay on the periphery of a settlement. Ditch 740 and the possible terminal 710 may define the south and west sides of an occupied enclosure extending to the north of the site. It is highly likely that if there were any archaeological deposits of this period surviving to the west, in the area lowered by modern landscaping, they would almost certainly have been destroyed. Truncation, either by medieval ploughing (a possible cause of the spreading of the burnt layer), or modern landscaping, is also evident in the south part of the site, but not to the same extent. This implies that features of a depth comparable to ditch 710 would have survived to some degree, had they existed.

The environmental analysis allows some tentative conclusions to be drawn about the environment of the area at this time. It appears to have been an area of fairly open mixed woodland, which suggests a low density of occupation in small settlements. The area of surviving Bronze Age archaeology at Duffield House is disappointingly small and can, therefore, shed little light on the character of any settlement of which it may be part.

The burnt flint deposits (742) and (735), and the associated ditch (740) and pit (734), clearly belong to the same phase of activity and possibly relate to a single purpose.

The interpretation of the derivation or function of burnt flint deposits or mounds in the Bronze Age has followed various lines of logic, mostly hampered by lack of clear evidence beyond the mound itself. Theories relating to metalwork (Ehrenburg 1990), and cooking, saunas, or the preparation of temper (Hodder and Barfield 1990) have been discussed. The proximity to water sources is often noted as being of significance. However, the burnt mound at Duffield House is, as far as can be ascertained, nowhere near a water source.

An excavation at Phoenix Wharf, Bermondsey, London in 1988 found a rectangular flat-bottomed pit that measured approximately 2 m in length and 1 m in width. It was full, indeed overflowing, with burnt flint and charcoal. As the pit was dug into sand, and showed no trace of a waterproof lining, it was suggested that the pit was used for the dry roasting of food, in contrast to the 'boiling pits' which have been found elsewhere (Bowsher 1990). The pit at Woodley, though only partly excavated, bears significant similarities to the one at Bermondsey. Given the proximity of ditch 740 to the pit 734, a reasonable estimation can be made of its maximum possible size, namely 2 m long by 1 m wide.

There were no signs of burning to the edges or bottom of the pit itself. As the single sherd of pottery within showed no signs of being subject to severe heat, it can be argued that the burnt flint and charcoal were initially fired elsewhere. The regular shape of the pit would appear to be deliberate. Two possible alternatives are worth consideration. Confining the heated stone to a pit of regular shape may conserve the heat in any contents. Alternatively a structure or framework may have been set within the pit. As there was no evidence of such a structure, such an interpretation must remain speculative.

A possible scenario is that the hot stone and charcoal are placed in the pit, and the food to be cooked placed on top. (A plausible explanation for the shape of the pit is that it was meant to accommodate a 'griddle' to keep the food clear of the stone.) More hot stone would then be piled on. This would account for the 'overflow' of the burnt material from the confines of the pit. Once the food is cooked it is taken elsewhere to eat and the stone and charcoal are emptied from the pit and thrown across the gully. In time, this activity would create a mound.

While such a hypothesis may be valid for the evidence on this site, and possibly that at Phoenix Wharf, it would appear less suited to examples of larger burnt mounds. A recent example uncovered in a Bronze Age context at Reading Business Park, approximately 6 miles to the south-west of Woodley, extends for some distance alongside a stream channel (Brossler and Early in preparation). The Reading mound was 85 m long, 25 m wide and up to 0.20 m in depth. No rectangular pits have been found in the vicinity. This suggests that the basic principle of heating stones or flint for the retention and subsequent gradual release of heat may have had numerous applications, the dry roasting of food being just one.

Post-medieval activity

The linear features appear to represent field boundary ditches. The parallel ditches 705 and 707 (Area 3) were oriented north-north-west by south-south-east and appeared to be converging upon the junction of 715, 747, and 766 (Area 4). This could represent a nodal point in a surrounding field arrangement.

THE ARCHIVE

The archive has been microfilmed and is currently held by the Oxford Archaeological Unit. The records and the finds from the excavation will be deposited at Reading Museum, Berkshire.

ACKNOWLEDGEMENTS

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