CHESSVALE BOWLING CLUB, CHESHAM, BUCKINGHAMSHIRE EXCAVATIONS 2003–2004

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In January 2003 an archaeological evaluation was undertaken at Chessvale Bowling Club (NGR 496035 201582) in advance of a proposed residential development. The evaluation was informed by previous excavations at Stratford's Yard to the south of the site, where in-situ Mesolithic and Neolithic deposits had been recorded in the 1960s, with some additional work taking place in the 1980s. A desk-based assessment undertaken in 2002 confirmed the historical and archaeological significance of the site. Three evaluation trenches were excavated by Birmingham Archaeology in 2003, the first of which produced Early and Middle Bronze Age ceramics, animal bone and flintwork from two pits. Subsequent area excavation recorded several pits clustering around a ring ditch, situated at the northern limit of the excavation area. A residual sherd of Middle Neolithic Peterborough Ware was recovered from the ring ditch. An in-situ Bronze Age Food Vessel was recovered from a pit, together with a flintwork assemblage from the site broadly datable to the Late Neolithic and Bronze Age. Four radiocarbon dates were obtained dating to between the Late Neolithic and Early Bronze Age. Two of the dates appear to have been from residual material found in later contexts. In addition, some residual Mesolithic material was recovered, although no associated buried soil horizons, such as those recorded at Stratford's Yard, were encountered. The lower western area of the site had been truncated by a number of large post-medieval features, while the higher ground to the east showed evidence of truncation by terracing below the original level of natural chalk.

INTRODUCTION

This report describes an archaeological excavation at Chessvale Bowling Club, Chesham, Buckinghamshire, by Birmingham Archaeology in March 2004. The work was undertaken on behalf of Hightown Praetorian Housing Association in advance of a residential development, and following the requirement for an excavation by the Buckinghamshire County Archaeologist in accordance with Planning Policy Guidance 16 (Radford 2003). The excavation was carried out according to the methods outlined in a Written Scheme of Investigation (Birmingham Archaeology 2003) agreed in advance with the Buckinghamshire County Archaeologist. The excavations followed on from an initial evaluation of the site involving the excavation of three trial trenches (Cuttler 2003). The results of the evaluation are also included in this report. A further watching brief phase undertaken in October 2004 during groundworks is included.

Location, Topography and Geology

Chesham is located within the Chilterns, Buckinghamshire (Fig. 1), occupying an area of the Chess Valley at *c.* 100m OD (NGR 496035 201582). The valley is orientated southwest to northeast and is surrounded by higher ground rising to 160m OD. The solid geology is Middle Chalk with gravels and alluvium characterising the superficial deposits on the valley bottom. The site at Chessvale Bowling Club lies at the eastern side of the valley on the chalk, towards the base of a terraced hillslope at *c.* 115m OD (Fig. 2). The site lies east of Chesham High St, is bounded by East Street on its west, a railway line to the east and residential properties to the north and south. The site has been previously levelled to form the Chessvale bowling green and was c. 2m above the level of East Street (Cuttler 2003). The natural break of slope rises sharply towards the eastern side of the site.

Archaeological Background

The significance of the site was informed by previous excavations *c.* 130m to the south, along East Street at Stratford's Yard (Fig. 2; Stainton 1989). Here, stratified deposits containing over 3000 worked flints and flintworking debitage, together with animal bone, were recorded in 1969 within six distinct layers overlying natural river gravels (*ibid.*

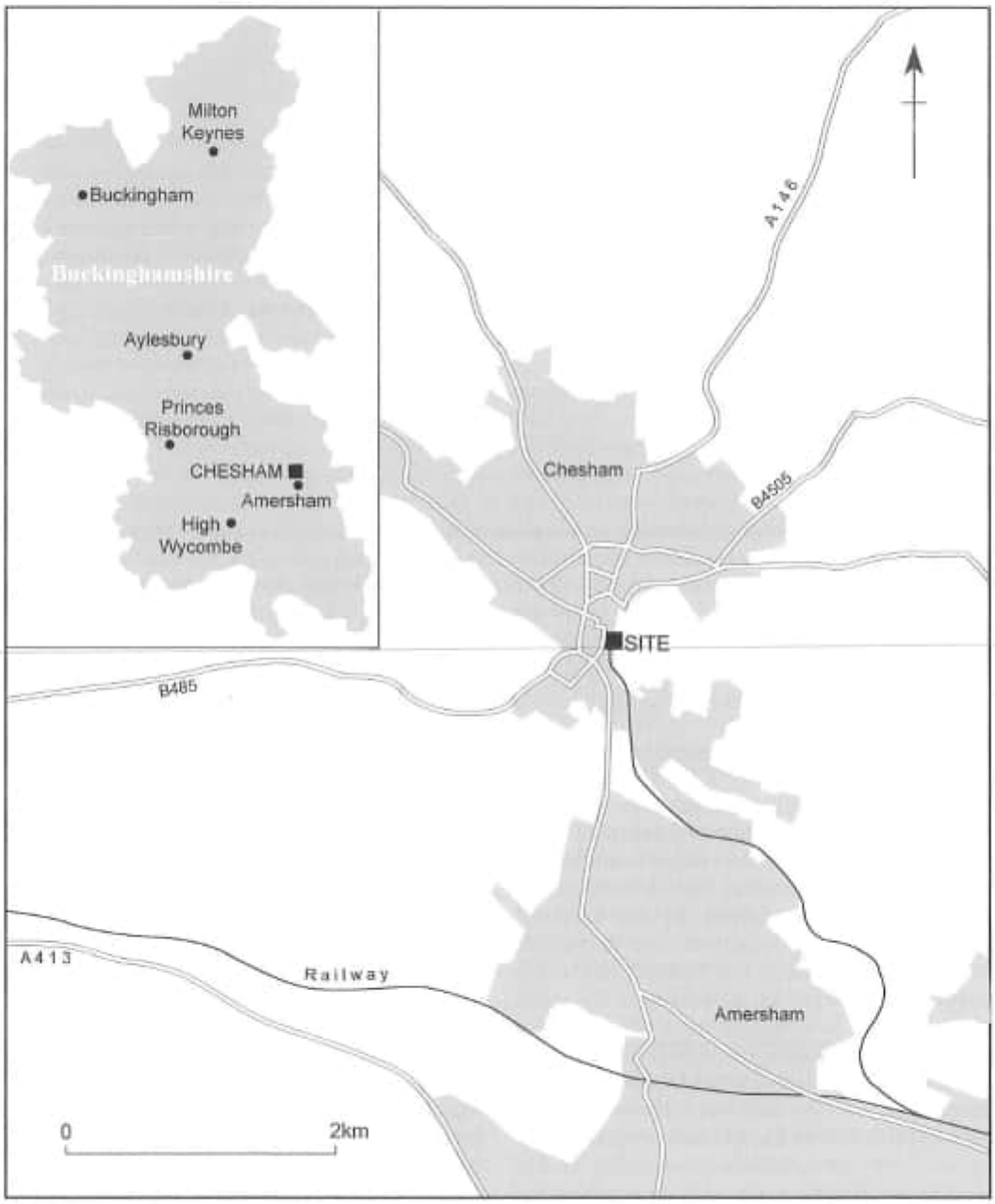

FIGURE 1 General location plan

51). These deposits were recorded within a restricted area of *c* .2x4m (*ibid.* 50). A comparable sequence of deposits was excavated in 1982 at Stratford's Yard, within a similarly restricted area of *c.* 2x1m (*ibid.* 53–54) and a similar assemblage of flintwork and animal bone recovered (*ibid.*). A late Mesolithic date was suggested for the site based on the flint assemblage (*ibid.* 54–61 and 71) and an assemblage of animal bone which contained early non-domesticated species (Grigson 1989, 61–68). This was confirmed by a radiocarbon date of 5890 +/– 100 bp (*ibid.* 68) obtained from stratified animal bone. This date can now be calibrated using OxCal V.3.9 (Bronk-Ramsey 2003) to between 5000 and 4490 BC at 95.4% confidence. Neolithic flintwork was also recorded at the site (Stainton 1989, 71). Further Neolithic finds, including pottery, burnt flint and animal bone were recorded in 1989 from a dark soil layer at East Street in the vicinity of Stratford's Yard (Collard 1990).

A desk-based assessment suggested that the development site had not been disturbed substantially, despite the construction of a railway to the east and a new road, East Street, on its western boundary (Blake 2002). It appears to have been within garden plots relating to properties fronting High Street in the nineteenth century (*ibid.* 2) and to have been built up on its western side for the construction of the bowling green (*ibid.* 8). Potential for the survival of archaeological deposits was therefore considered to be high (*ibid.*).

Well-preserved and stratified medieval archaeology excavated at properties on High St (Blake 2002, 4) suggested the site may have been located within burgage plots at the rear (*ibid.* 8). Limited Roman deposits recorded in Chesham contributed

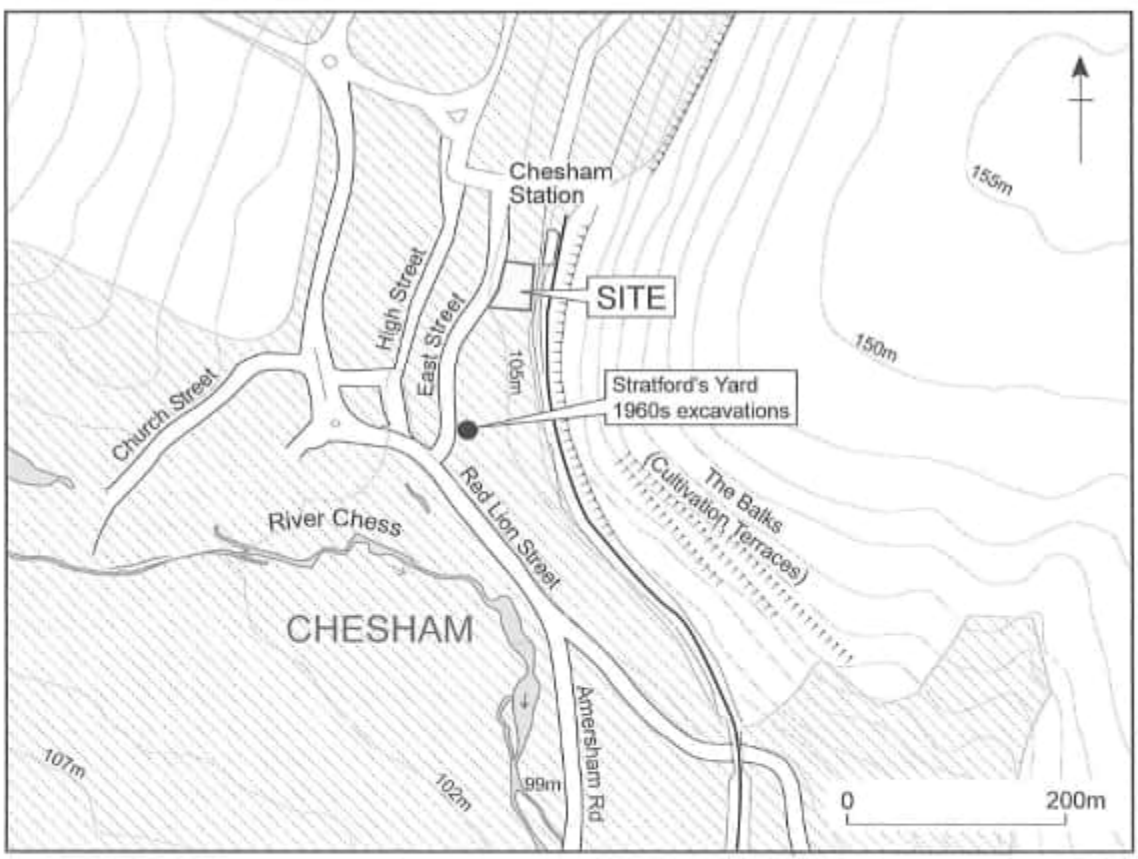

FIGURE 2 Location of the site within Chesham and in relation to Stratford's Yard

to the archaeological potential (*ibid.* 3–4).

The initial evaluation of the site in 2003 (Cuttler 2003) recorded two prehistoric pits in the northern area of the site, one of which contained a significant proportion of a Middle Bronze Age pot. Animal bone and worked flint was also recorded from these features. Further prehistoric flint was recorded from residual contexts across the site. The trial trenches suggested that terracing may have truncated archaeology at the easternmost side of the proposed development area, but that levelling deposits associated with the bowling green overlay colluvium and potential archaeology towards the west. This resulted in the requirement for an archaeological excavation (Radford 2003) which took place in 2004, the methodology and results of which are given in detail in this report.

Excavation Methodology

The existing ground levels varied considerably, the easternmost side of the site being up to 3m higher than the existing bowling green. The bowling green itself had been created by terracing to the east, and levelling to the west, as demonstrated at the evaluation stage (Cuttler 2003). The western side of the site had been raised up to *c.*2m above the level of East Street to create the bowling green, and was bounded by a retaining wall. As a result, the level of the original ground surface below the bowling green at the west of the site, and that at the east, had the potential to differ significantly. Both the southern and northern extent of the site were bounded by residential properties. The eastern side of the site was bounded by Chesham Railway Station, a public footpath, and a water tower to the northeast. Advice regarding groundworks was provided by the Engineer for Hightown Praetorian Housing Association Ltd. All excavation works were to have a 45° slope on the southern, western and eastern boundaries in order to preserve the integrity of boundary and retaining walls. A 3m distance was required between the southern extent of the site and the adjacent property in order that the integrity of adjacent foundations was not compromised.

The site was excavated in three stages, in accordance with the Written Scheme of Investigation (Birmingham Archaeology 2003a) and risk assessment (Birmingham Archaeology 2003b). Stage 1 required the excavation of the central area of the site measuring 36m by 10m (Area 1, Fig. 3). Overburden was removed by a JCB mechanical excavator using a toothless ditching bucket, to the uppermost archaeological horizon in this area. The area was subsequently cleaned, hand-excavated and sampled. Stage 2 required the excavation of a second area, 7m by 37m (Area 2, Fig. 3), with spoil stored over Area 1. Overburden was removed by the same method as in Area 1, but with colluvial deposits being removed in spits until the uppermost archaeological horizon was reached.

Spoil from Area 2 was banked up at the eastern edge of the bowling green, in order to provide access to a third area and stage three of the excavation at the highest level of the site (Fig. 3). The excavation of Area 3 measured 19m by 12m, and was restricted by the presence of standing buildings and boundary features. Overburden was removed down to the uppermost archaeological horizon in this area, using a tracked mechanical excavator and toothless bucket. Suitable distances were maintained between the excavated area and the eastern boundary with the railway station and an unstable retaining wall to the south. The excavated area was stepped at the eastern limit, due to an unstable boundary wall and the gradient of slope here. The area of standing bowling club buildings and associated hardstanding remained unexcavated as had been agreed. This area was monitored during a later watching brief in October 2004. A ramped entrance (Fig. 3) was maintained at all stages of the excavation to allow access for mechanical excavators from East Street.

Features cutting the colluvial layers were excavated prior to the removal of further spits of colluvium. All features cutting the chalk natural were hand excavated, recorded and sampled as set out in the Brief (Radford 2003) and the Written Scheme of Investigation (Birmingham Archaeology 2003a). Potentially prehistoric features were excavated completely. Environmental bulk samples were taken for prehistoric features on the site in 30 litre samples, or 100% of the feature, whichever was the greatest. Contexts were recorded on pro-forma written record sheets, and finds collected by context. Plans and sections were drawn by hand at appropriate scales and colour slide and print photographs taken as appropriate. These records, together with the finds assemblage, form the site archive. This archive will be deposited upon arrangement with the Buckinghamshire County Museum.

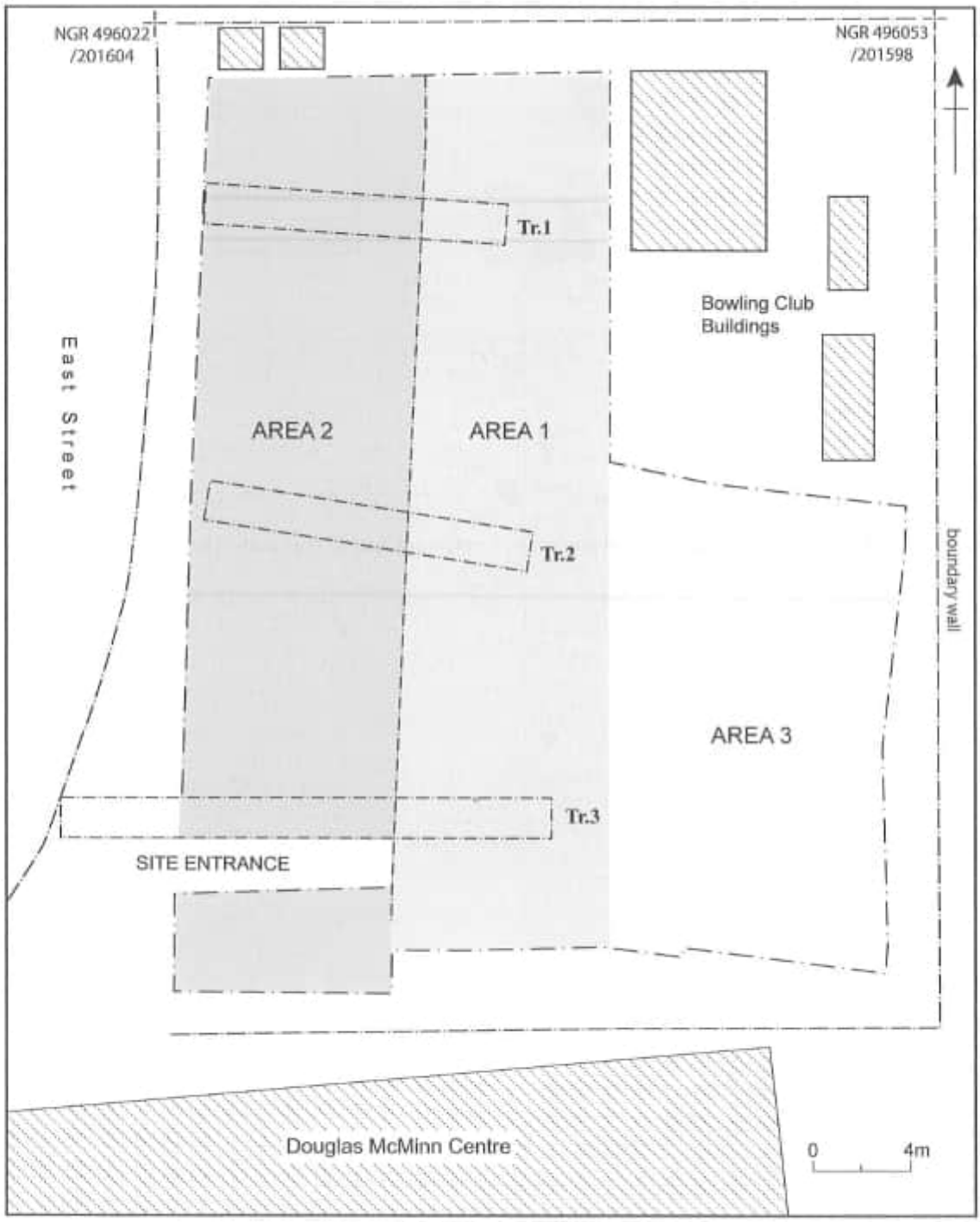

FIGURE 3 Excavated areas within the site

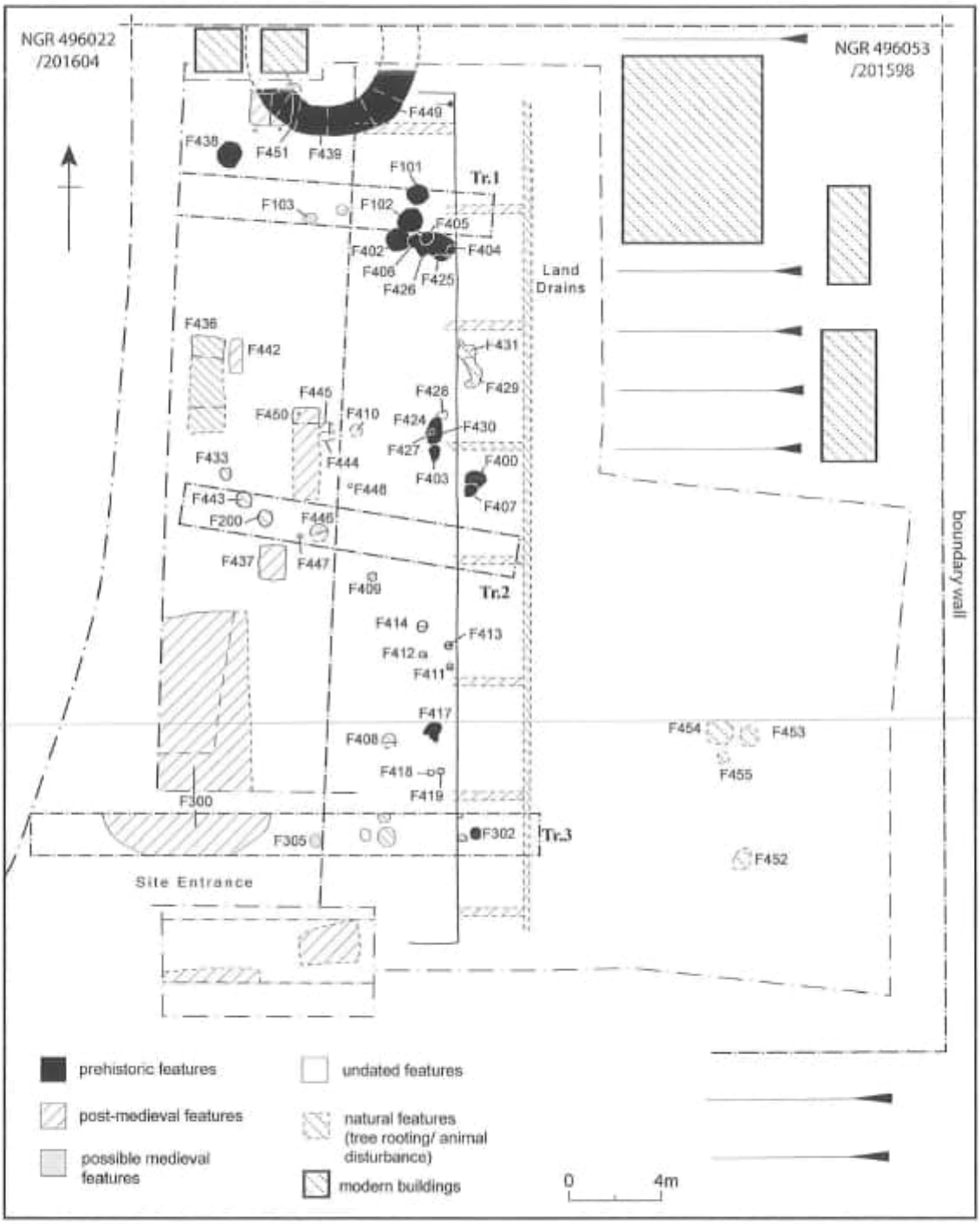

FIGURE 4 Plan of excavated features and their phases

RESULTS

A few Mesolithic flints represent the earliest activity on the site. A single sherd of Peterborough Ware indicates activity on the site in the Middle Neolithic. Mid-Late Neolithic activity is also indicated by three radiocarbon dates, one of which may date an early pit. The construction of a ring ditch appears to have established the site as a ritual focus by the Early Bronze Age, and a cluster of pits with Early and Middle Bronze Age ceramics appear to relate to activities at this monument. Some possible Late Bronze Age sherds may imply a continuation of activity into the first millennium BC.

Romano-British pottery sherds recorded during the evaluation may suggest contemporary activity in the vicinity and a few medieval sherds may have originated from buildings associated with Chesham High Street. The site also appears to have been used for the deposition of post-medieval domestic waste, and possibly for the quarrying of chalk during the same period. A plan of all the excavated features is given in Fig. 4.

Mesolithic

Nine pieces of Mesolithic flint were recovered from the excavated area (see Barfield below), but no features or deposits contemporary with these were recorded.

Mid-Late Neolithic

A single, unabraded sherd of Peterborough Ware was recorded from a secondary, but early, fill of the ring ditch (Figs. 4 & 5) and is considered to date to the Middle Neolithic from the mid- fourth to early third millennia BC (F439, 4063; see Woodward below). However, an Early Bronze Age radiocarbon date from an early fill of the ring ditch (see below) suggests that the Peterborough Ware sherd is residual.

Three radiocarbon dates suggest activity from the Late Neolithic in the early to mid third millennium BC (see below) on the site. A radiocarbon date from the primary fill of Pit F438 (SUERC-9149), calibrating to between 2580 and 2430BC, suggests it may be the earliest feature on the site. Several worked flints of a general Late Neolithic/ Bronze Age date were also recorded from the feature (Barfield below). It was a relatively substantial circular pit (Fig. 4, Plates 1 & 2) measuring 0.9m in diameter and 0.58m in depth, cutting natural chalk. It contained three deposits (S9, Fig. 6). The primary fill was a light grey-brown silty clay, 0.08m in depth and with occasional charcoal flecks (4050); the secondary fill was a black silt, 0.18m in depth, with a significant quantity of charcoal (4048) and the tertiary fill was 0.26m in depth, made up of mid-grey-brown silty clay (4047). The pit contained 33 struck flints, the majority of which came from the primary fill (4050). Some of the flints from this feature are considered to represent a single flaking episode (see Barfield below).

Early Bronze Age

The ring ditch

A small ring ditch was discovered at the northern end of the site (Fig. 4, Plate 1). It was excavated in three sections, recorded as F439, F449 and F451 (Fig. 4 & 5). The deposits within these sections were fully excavated, sampled and recorded prior to the removal of baulks and the full excavation of the feature (Plate 3). A proportion of the ring ditch on its western side was overlain by a modern toilet block and hardstanding (Fig. 4), which were to remain *in-situ* during the excavation. This area was subsequently observed as part of a watching brief during groundworks.

Approximately half of the ring ditch appeared to be present within the excavation area (Fig. 4). It was *c.* 6.5m in external diameter, 0.55m–1.15m deep and 1.2–1.5m wide. The ditch had steeply sloping sides with a flat base cut into natural chalk (Fig. 5). Its depth appeared to be greater towards the western side with the base of F449 being 105.06m OD and F451 104.59m OD, a difference of 0.47m. This is likely to reflect the natural level of the break of slope in this period, though the ditch also appears to have been excavated to a slightly greater depth below the level of the natural chalk towards the west (Fig. 5). The four sections excavated through the ditch are described in detail below.

a) South-eastern ring ditch area F449 (S1, Fig. 5)

Initial infilling of the ditch on the southeast side (F449, Figs. 4 & 5) was represented by primary deposits of sub-angular chalk within a light-yellow silt on both the inner northwest (4072) and outer south-eastern (4073) sides of the ditch. The primary infill on the southeast side of the ditch (4073) was 0.10m deep and appeared to tip from the outer

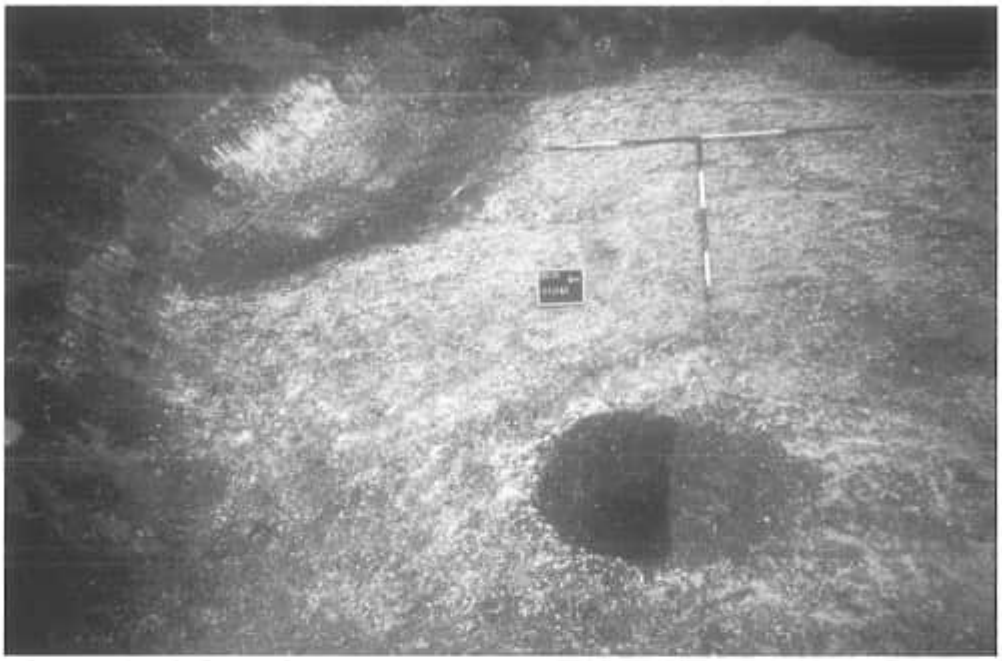

Plate 1 Pit F438 during excavation (foreground), and the ring ditch before excavation (background), facing northeast

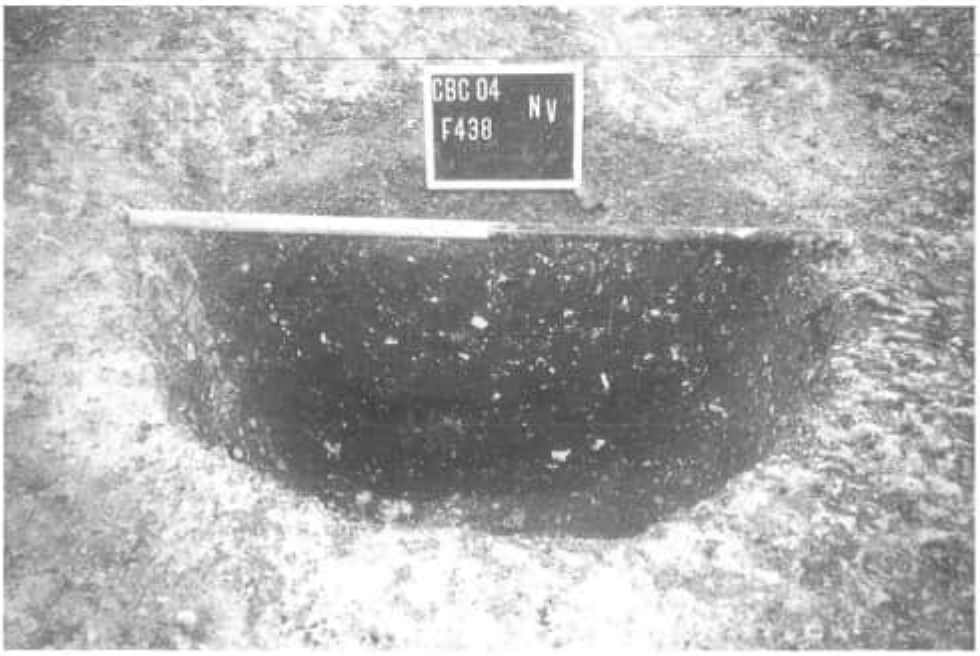

Plate 2 Pit F438 during excavation, facing south

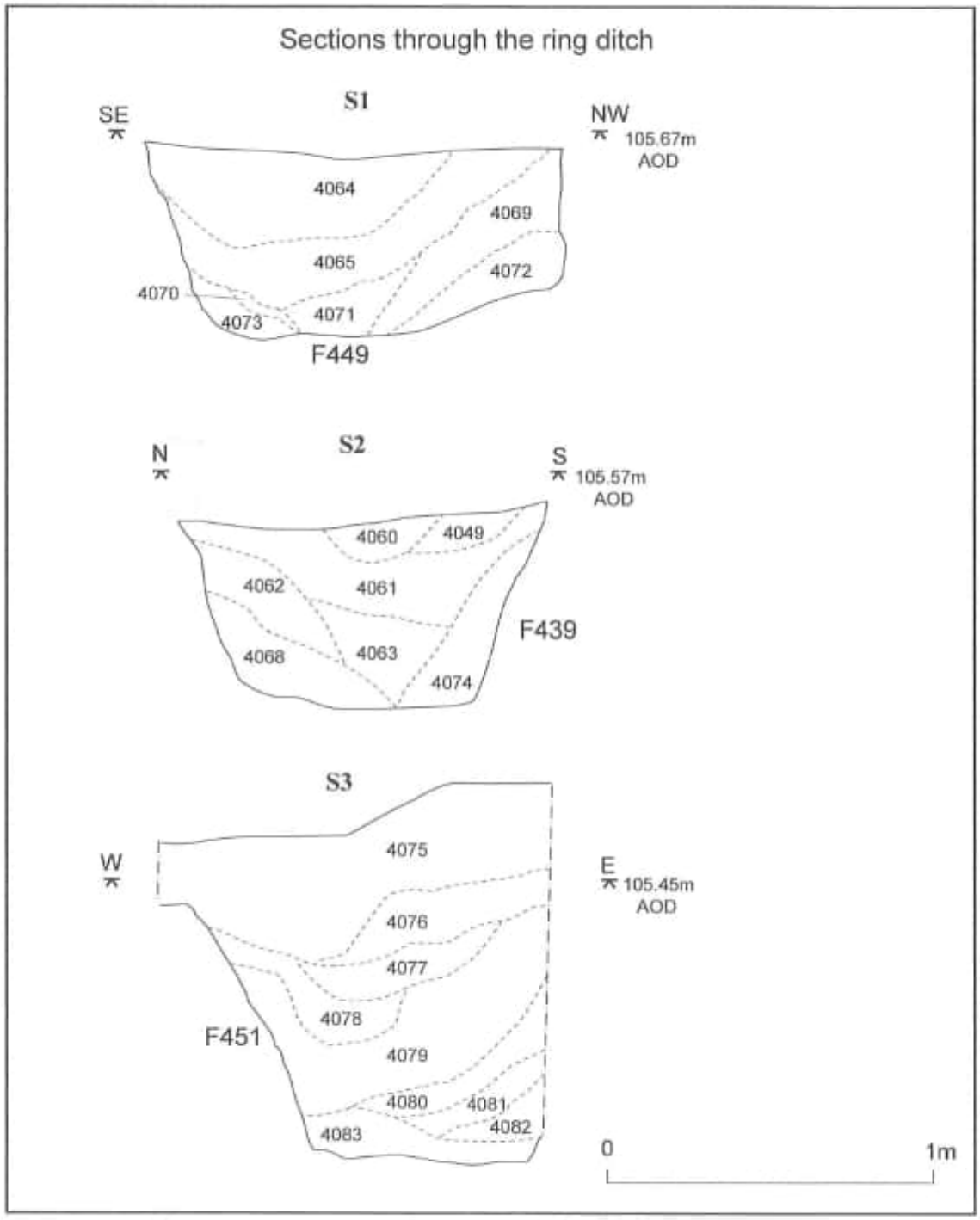

FIGURE 5 Excavated sections through the ring ditch

edge (Fig. 5). The light yellow-white silt and chalk deposit on the inner northwest side (4072) appeared to have a steeper gradient of infilling and a greater depth of *c.* 0.2m (Fig. 5). This phase was followed by a shallow deposit of mid-orange-brown silting (4070) around 0.04m deep, overlying the primary chalk deposit (4073) on the southeast edge of the ditch. This was contemporary with a more substantial deposit of light orange-brown silty clay (4069), with a moderate quantity of small chalk fragments around 0.16m deep. This deposit appeared to tip into the ditch at a steep gradient from the northwest, inner edge of the ditch. A slightly greater amount of chalk was present within the subsequent light-yellow silty clay (4071) fill in the lower central area of the ditch, present to a depth of 0.15m. This again appeared to be tipping from the northwest side of the feature. A fill of light-brown silty clay with frequent chalk lumps and fragments (4065) overlay these layers and was present to a depth of 0.2m, again tipping primarily from the inner northwest side of the ditch. The final infilling of this eastern area of the ring ditch was represented by a relatively deep (0.3m) deposit of mid-orange-brown silty clay (4064), which also contained sub-rounded and sub-angular chalk lumps.

b) Southern ring ditch area F439 (S2, Fig. 5; Plate 4)

The southern area of the ditch (F439, Figs. 4 & 5; Plate 4) was represented by a comparable sequence of infilling to that recorded in the south-eastern area. The primary fills are again represented by substantial quantities of sub-angular chalk fragments within a pale, yellow-grey clayey silt on both the northern (4068) and southern (4074) edges. The chalk and silt deposit (4068) appears to be greater in depth on the northern side of the feature (*c.* 0.2m) and the chalk deposit on the southern edge of the ring ditch (4074) appears to be steeper in gradient (Fig. 5). A second phase of chalk deposition was recorded tipping in from the northern edge of the ring ditch (4062), also at a relatively steep gradient. This was a light yellow-brown clayey silt, *c.* 0.15m deep, with frequent chalk fragments (c. 15%), although far less chalk is present in this deposit than in the primary fills (4068, 4074) where around 50% of the deposit was considered to be redeposited chalk. This deposit was followed by a contrasting dark yellow-brown clayey silt (4063), *c.* 0.25m deep, with charcoal, pottery and flintwork present, with few chalk fragments. Again this fill appears to tip in from the northern, inner, edge of the ring ditch, although having a less steep gradient than earlier episodes of infill. Further silting is represented by the light yellow-brown clayey silt deposit 4061, 0.21m deep. This contained a slightly greater quantity of sub-angular chalk fragments (*c.*10%) than the earlier episode of silting (4063), but far less than the primary chalk fills (4068, 4074). A later phase of silting recorded in this southern area of the ring ditch is represented by a mid-yellow-brown clayey silt (4049), *c.*0.11m deep. This deposit had less chalk present (around 2%) than the earlier fill (4061) and contained some charcoal flecks (*c.*1%). The final fill recorded here was a deposit of redeposited chalk within a yellow-white clayey silt (4060), recorded to a depth of 0.12m, and width of 0.35m, in the central area of the ring ditch.

c) Western ring ditch area F451 (S3, Fig. 5)

The western area of the ditch had the greatest depth of deposits recorded (1.15m; Figs. 4 & 5). A primary infill of redeposited chalk was recorded at the base of the feature (4083) in this area (Fig. 5). This initial fill of yellow-white clayey silt with chalk was 0.16m deep and was deeper on the western, outer, side of the ring ditch.

This phase of infill was overlain by a layer of light whitish-brown silty clay (4082), *c.* 0.15m deep, with only occasional fragments of chalk, tipping from the eastern, inner edge of the ring-ditch. A further infill (4081), characterised by frequent quantities of chalk within a yellow-white silt, also tipped from the eastern (inner) side of the feature and was 0.08m deep. This was succeeded by a further steeply tipping infill (4080) of light whitish-brown silty clay, *c.* 0.10m deep, with frequent small chalk fragments, again slumping in from the eastern (inner) side of the feature. This deposit has produced an Early Bronze Age radiocarbon date (see below). A subsequent deposit, 0.32m deep, contained a greater frequency of larger chalk fragments within a yellow-white clayey silt (4079). This also tipped in from the eastern inner edge of the ring ditch.

A further infill (4078) tipping in from the western, outer edge of the ring ditch, contrasts with the earlier deposits which tipped in from the inner edge. This mid-orange-brown silty clay contained only occasional small chalk fragments and was

Plate 3 The ring ditch during excavation, facing east

Plate 4 The ring ditch section F439 during excavation, facing east

recorded to a depth of 0.14m. This deposit was followed by a further fill of dark-grey/black silty clay (4077), with little or no chalk fragments, but with a significant quantity of charcoal, measuring 0.12m deep and 0.65m wide at the centre of this area of the ditch. This deposit tipped in from the eastern, inner, side of the ditch (Fig. 5). The penultimate deposit recorded in this section of the ring ditch was represented by a mid-orange-brown silty clay with frequent chalk fragments (4076), 0.16m deep, tipping in from the east. The final fill was represented by a deeper deposit of mid-orange-brown silty clay (4075) with fewer chalk fragments, but with more frequent flint nodules, 0.3m–0.35m deep.

Interpretation of the ring ditch fills

The primary fills of the ring ditch (F439, 4068; F449, 4072) appear to reflect slippage from the inner edge, suggesting that material had slumped in from an internal mound, the limit of which lay close to the ditch. These fills appear to be contemporary with further primary chalk deposits (F439, 4074; F449, 4073; F451, 4083) which appear to have slumped in from the outer edge of the ring ditch (Fig. 5). These deposits suggest that an upcast of natural chalk was deposited both within the area of the ring ditch, and external to it, slumping back into the ditch from both sides before the chalk had consolidated. These deposits suggest an internal mound, and possibly also an external bank. The external bank may have been less substantial than the internal mound, since the later phases of infilling appear to tip into the ditch consistently from the internal edge.

Secondary phases of slumping from the internal edge of the ring ditch, are apparent in all three excavated sections (F439, 4062, 4063; F449, 4069, 4071; F451, 4082, 4081, 4080; Fig. 5). Subsequent fills of the ditch may also suggest erosion and slumping of mound material from the inner edge (F449, 4065; F451, 4079, 4077, and 4076) though this is less marked.

On the western side of the ring ditch, a phase of silting appears to derive from the external edge of the ring-ditch (4078) which may suggest the presence external feature such as a bank. This is followed by a significantly contrasting charcoal rich deposit (4077), containing some flintwork, which appears to derive from the internal edge of the ditch, followed by further mound erosion and slumpage (F451, 4076) deriving from the internal edge of the ring ditch.

Pits

At least seven pits on the site can be dated to the Late Neolithic and Early Bronze Age through ceramic associations and flintwork (see Woodward and Barfield below) with a further four inter-cutting pits which may also belong to this period.

Pit F101 (Fig. 4 & S4, Fig. 6.) was circular in plan 0.8m in diameter and 0.33m deep, with a slightly rounded base cut into natural chalk. The pit contained three fills. The primary fill was made up of mid-brown silty clay (1009) with small chalk fragments (*c.* 10%), several sherds of pottery, several flint flakes (see Barfield below) and a red deer bone (see Hancox below). A light, orange-brown silty clay (1016) with abundant small stones (*c.* 20%) and charcoal flecks represented the second fill. The third fill was made up of a dark-brown silty clay (1007) with frequent small stones (*c.* 10%) and some abraded pot sherds.

Pit F404 was one of a number of intercutting pits (Fig. 4; sections S5 & S7, Fig. 6) *c.* 5m to the southeast of the ring ditch. This was relatively substantial, 1m in diameter and 0.45m in depth, filled by a mid-brown clay-silt (4009) with frequent small stones (*c.* 10%) and charcoal flecks (*c.* 10%). Pit F404 was in turn cut by Pit F425 (S5, Fig. 6) which was oval, *c.* 0.6 by 0.4m with and 0.5m deep, with a fill of light whitish brown clayey silt with chalk (4030) and a mid-orange-brown clayey silt (4031), indistinguishable from the fills of F426. The two features were, however, distinct in plan (Fig. 4). F426 (S6, Fig. 6) was *c.* 0. 6m in diameter and 0.4m in depth with a primary fill of light white-brown clayey silt (4033) with a moderate amount of chalk fragments (*c.* 5%). A secondary fill consisted of mid-orange-brown clayey silt (4032) with occasional small stones. F406 (S7, Fig. 6) appeared to be contemporary with F425 and F426 and had a diameter of >0.32m, with a depth of >0.16m, filled with a light brown clayey silt (4011) with frequent small stones and charcoal flecks. A further pit F405 (S7, Fig. 6), cut pit F426 (S6, Fig. 6). This pit measured *c.* 0.65m in diameter by 0.28m in depth and was filled by a light brown clayey silt (4010) with frequent small stone inclusions (*c.* 10%) and frequent charcoal flecking. The Beaker sherd from F405 (see Woodward below) may provide a *terminus ante quem* for the

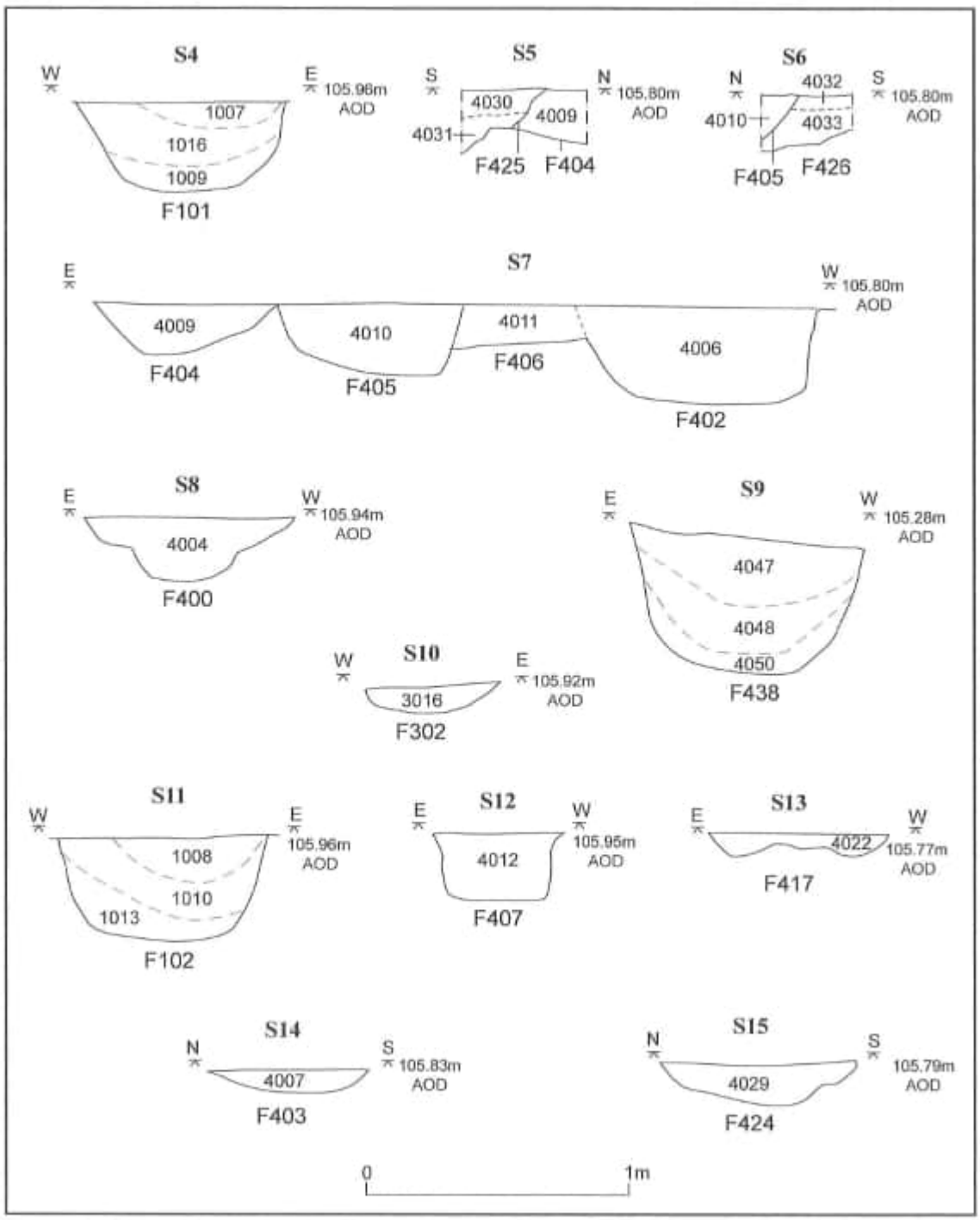

FIGURE 6 Excavated sections through prehistoric pits

four earlier features, unless it is residual. To what extent these pit digging episodes were separated in time is unclear, though the proximity and density of the pits suggests a common focal point of activity.

Pit F400 (S8, Fig. 6; Plate 5) was recorded 8.5m south of the intercutting pit group and 14m south-east of the ring ditch (Fig. 4). This pit was 0.5m to the east of a recorded north-south linear step in the chalk (Fig. 4), which seemed to represent past terracing, of unknown date. The pit contained an *in-situ* Food Vessel Urn (see Woodward below), lying on its side with the mouth of the vessel facing north (Plate 5). The vessel was in a slightly crushed state when excavated. Pit F400 was oval, 0.8m by 0.55m and 0.24m deep, cut into natural chalk (Figs 4, 6 (S8) and Pl. 5). It was filled by a light yellow-brown silty clay (4004) with frequent chalk fragments (c.10%). The fill of the pot (4091) was similar, and was sampled separately at the post-excavation stage (see Fryer below).

Pit F302 (S10, Fig. 6) also contained flintwork datable to this period. It was a shallow truncated pit or posthole 0.55m in diameter and only 8mm in depth, filled with a mid-orange-brown silty clay with charcoal and chalk fragments, in the central south area of the site (Fig. 4).

Other features on the site may also belong to this phase, though the flint flakes recovered from their fills appear not to be chronologically diagnostic beyond a general Late Neolithic and Bronze Age date. F417 was a shallow and amorphous feature in the south central area of the site. It measured 0.6m by 0.8m and 0.10m deep (Fig. 4; S13, Fig.6), and was filled by a mid-yellow-brown silty clay (4022) with sub angular chalk fragments. It may have represented a group of up to three discrete and truncated features. Two further features to the south-west of F400 (containing the Food Vessel Urn) also produced flintwork. F403 was an amorphous sub-circular truncated feature 0.6m in diameter and 0.10m deep (Fig. 4; S14, Fig. 6) filled by a light yellow-brown silty clay (4007) with some

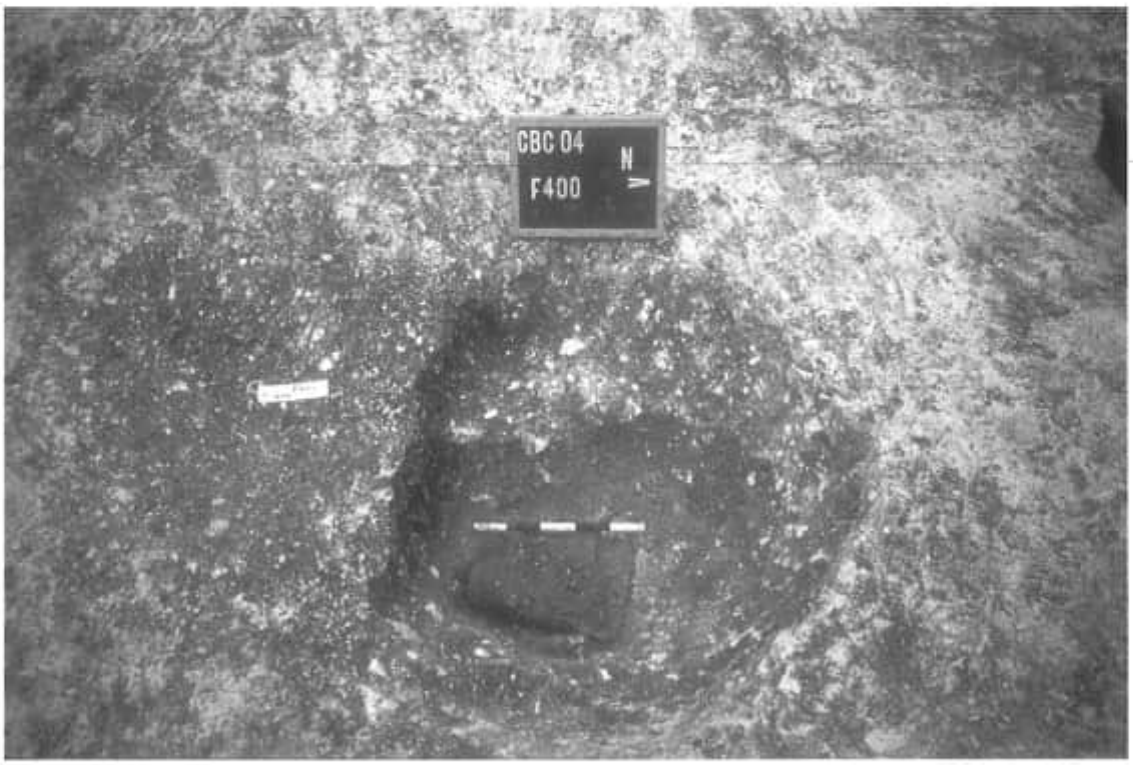

Plate 5 Pit F400 with Food Vessel Urn in-situ during excavation, facing west

burnt stone fragments. Immediately to the west of this feature was an elongated and probably truncated pit (F424), 0.58m by 0.87m by 0.14m deep (Fig. 4; S15, Fig. 6), filled by a mid-grey-brown silty clay (4029).

Middle Bronze Age

One pit (F102) can be dated to the Middle Bronze Age by its association with an incomplete Deverel-Rimbury related urn (see Woodward below). The pit was 0.82m in diameter with steeply sloping sides and a rounded base cutting into natural chalk, 0.4m deep (Fig. 4 and S11, Fig. 6). It contained three fills, the first of which was a dark grey silty clay (1013) with occasional small stones and charcoal flecks, 0.10m deep. This fill contained the Deverel-Rimbury pot together with flintwork (4 pieces), a pig canine fragment (Hancox, pers. comm.) and a further fragment of animal bone. This was overlain by a secondary fill of light grey-brown silty clay (1010) with moderately frequent small stones and occasional charcoal flecks, 0.16m deep. This fill contained animal bone fragments and the bulk of the flint assemblage from the feature. The flintwork from this context is regarded as contemporary (see Barfield below). The tertiary fill consisted of a mid-grey-brown silty clay, 0.14m in depth, with occasional small stones and charcoal (1008). This fill also contained animal bone fragments, including a lower pig premolar (Hancox, pers. comm.), and four pieces of flintwork.

Phase 5 Late Bronze Age/ Iron Age

A tentative Late Bronze Age or Iron Age date, based on the ceramics, can be placed on two features. One feature, F402 is located within the pit group to the south-east of the ring ditch (Fig. 4). This produced four sherds of possible Late Bronze Age or Iron Age date (see Woodward below) together with thirteen flints. It pit was *c.* 0.9m in diameter and 0.38m deep, with a slightly rounded base (S7, Fig. 6) and filled with a dark brown clayey silt (4006).

Pit F407 also contained one small sherd of possible Iron Age date, together with residual Mesolithic flintwork. The pit was oval, 0.6 by 0.5m and 0.28m in depth (S12, Fig. 6), filled by a light yellow-brown silty clay (4012) with occasional charcoal flecks. This feature cut Pit F400 (4004), which contained the Early Bronze Age Food Vessel Urn (Fig. 4).

Iron Age pot has also been recorded at Stratford's Yard (Stainton 1989, 71) and other locations in Chesham (Blake 2002, 6).

Romano-British

Only three sherds of Romano-British pot were recovered during the evaluation. No deposits of this date were recorded from the excavation.

A single residual sherd of Romano-British pottery was recovered from F103, 1014, a circular posthole, 0.22m in depth and 0.6m diameter. The posthole also contained a fragment of medieval pot (Fig. 4). A second posthole F104, 1015 (Fig. 4; 0.29m in depth and 0.45m diameter.) also contained a sherd of Romano-British pot, which was also considered residual within a modern feature (Cuttler 2003). A third fragment of Romano-British pottery was recovered from F200, 2006 (Fig. 4; a circular posthole 0.16m deep and 0.6m diameter), which may have been contemporary with the feature, but given the context of the other sherds and the general lack of material of this period, this is doubtful. Romano-British activity has been recorded previously in Chesham (Blake 2002, 4–6), including at the nearby site of Stratford's Yard (Stainton 1989; 50 and 72).

Medieval

Three medieval pottery sherds were recorded on the site during the evaluation. The first recorded in a residual context within a post-medieval levelling layer (1011), the second from a circular posthole (F103, 1014, 0.22m deep and 0.6m deep; Fig. 4.) and the third from another posthole (F305, 3020; Fig. 4) with post-packing stones (*c.* 0.7m diameter and 0.4m deep).

Post-medieval

Several features on the site contained post-medieval ceramics, glass, brick and tile. These features predominantly occupied the western and southern areas of the site (Fig. 4) and included a substantial pit (F300), probably the result of quarrying or terracing, a square pit (F437) containing large quantities of post-medieval bottle glass, and a relatively recent (although presumably pre-bowling green) dog burial (F442). These features probably relate to activities within garden plots at the rear of properties fronting on to Chesham High Street (Blake 2002), prior to the construction of East Street in the 1960s (Stainton 1989). Details of indi-

vidual features can be found in the site archive. These features were sealed by several levelling layers associated with the construction of the bowling green (Cuttler 2003) in the 1960s.

This post-medieval activity had removed any features of prehistoric date in the west and particularly the southwest of the excavation area. Also a modern toilet block associated with the Bowling Club had truncated part of the ring ditch at the northern limits of the site.

One pit F200 (2006) contained a single sherd of Early Bronze Age pottery, however, the presence of an iron nail demonstrates that this is a residual sherd. Another posthole (F305) contained prehistoric flintwork. However the fill (3020) also contained post-medieval tile and pot, showing that the flint was residual.

The Watching Brief

During October 2004 a watching brief was undertaken with the specific aim of observing deposits that were not able to be excavated, largely for logistical and health and safety reasons, during the excavation of the site. The area of the ring ditch assumed to be lying beneath the modern toilet block and hard-standing at the north of the site was observed during construction groundworks. The area was hand-cleaned and the plan of the ring ditch was recorded, but no further archaeological features or finds were identified. The area beneath the bowling green huts was also observed. No further archaeological features were observed here.

Radiocarbon Dates

Four samples were submitted to the SUERC (Scottish Universities Environmental Research Centre) for AMS determinations, two samples of hazel nutshell and two of animal bone, which represented the best available material for dating. The contexts from which these samples derive were chosen for their potential significance for the chronology of the site, and to enable this to be placed within the wider context of Neolithic and Bronze Age sites in the region. Table 1 summarizes the results, with dates calibrated using Oxcal 3.9 (Bronk Ramsey 2003).

Discussion of radiocarbon dates

The earliest radiocarbon date from the site (SUERC-9148) calibrates to between 2760 and 2560 BC at 95.4% probability. The date was obtained from hazel nutshell from pit F400, 4004. This pit also contained a Food Vessel Urn of Early Bronze Age date (Woodward below). The hazel nutshell must therefore be regarded as residual within the fill of this pit, since the calibrated dates represent a period in the Late Neolithic, significantly earlier than would be expected for Food Vessel Urns. The earliest radiocarbon dates associated with Food Vessels fall within Period 2 of Needham's British Bronze Age chronology (Needham 1996, 128–130). In this chronology calibrated examples do not appear to date to before 2200 BC, and these vessels are more commonly dated to between 2000 and 1700BC (*ibid.* 130).

A second radiocarbon date (SUERC-9149) obtained from hazel nutshell present within the basal fill (4050) of pit F438, calibrates to between 2580 and 2430 BC at 95.4% confidence. This date places the pit in the Late Neolithic, contemporary with Needham's Period 1 (*ibid.* 124–127), contemporary with the earliest Beaker burials in Britain. The radiocarbon date is not necessarily at odds with the recorded flint from the same pit (Barfield below), although the possibility that the hazel nutshell is residual cannot be ruled out.

A Late Neolithic/ Early Bronze age date, also falling within Needham's Period 1 (Needham 1996,

Table 1 Calibrated radiocarbon dates

Lab code	*Radiocarbon Age (BP)*	*Feature/ context number*	*Material (95.4%*	*Calibrated date probability)*
SUERC-9144	3890 +/-35	F102, 1013	Bone (Animal)	2480–2280 BC
SUERC-9148	4095 +/-35	F400, 4004	Nutshell (Hazel)	2760–2560 BC
SUERC-9149	3975 +/-35	F438, 4050	Nutshell (Hazel)	2580–2430 BC
SUERC-9523	3485 +/-35	F451, 4080	Bone (Animal)	1900–1730 BC

124–127), has been obtained from animal bone from pit F102, 1013. The date (SUERC-9144) calibrates to between 2480 and 2280 BC at 95.4% confidence. However, the animal bone was in association with a Middle Bronze Age urn of the Deverel-Rimbury tradition (Woodward below), which would date to between c.1500 and 1150 BC on the basis of associated absolute dates elsewhere (Needham 1996, 133–134). Therefore the animal bone has clearly derived from a much earlier context.

The latest radiocarbon date from the site (SUERC-9523) was derived from animal bone from a lower fill of the ring ditch (F451, 4080). The date calibrates to between 1900 and 1730 BC, falling within the Early Bronze Age. This can be placed within Needham's Period 3 (*ibid.* 130–132), suggesting the ring ditch was contemporary with Food Vessels, Collared Urns and cremation rites in Britain (*ibid.*). The date, therefore, may be contemporary with the use of the monument and is consistent with the date range of such features elsewhere.

Prehistoric Pottery by Ann Woodward

A total of 219 sherds, weighing 1096g, were recovered from excavations undertaken in 2003 and 2004. Of these, 191 sherds derived from two separate vessels, found in pit fillings. Most of the pottery was Bronze Age in date, with a single sherd dating from the Middle Neolithic period, and just a few pieces which may have dated from the Iron Age. The pottery came from 10 contexts within a series of 9 features, all of which were associated with the ring ditch that was located at the northern margin of the excavated area. Most of the pottery was fairly abraded. The overall average sherd weight was 5g, but excluding the two major vessels, it was only 0.25g. The pottery was recorded by standard pro forma, according to the guidelines of the Prehistoric Ceramics Research Group (1997). The following criteria were recorded: fabric, colour of exterior surface, core and interior surface, surface treatment, sherd type, form, quantity, weight, diameter of rim, base and shoulder (where measurable), percentage of rim, shoulder and base present, and the technique and location of decoration.

a) Ring ditch

A single sherd, weighing 6g, came from context 4063, the middle fill within a segment of the ring ditch F439. This was a ridged neck fragment from a bowl, decorated with horizontal rows of diagonal incised lines forming a herringbone pattern. The sherd had a sandy matrix containing a sparse and ill-sorted quantity of medium-sized angular flint inclusions. Peterborough Ware bowl in the Mortlake style. Middle Neolithic. (Fig. 7, 1)

b) Pits south-east of the ring ditch

F402, context 4006. One flat and everted rim sherd (2g) in a sandy fabric may be Iron Age in date. Not illustrated. Three further sherds (10g) in a sandy fabric with sparse small to medium sized flint inclusions may be of later Bronze Age or Iron Age date.

F405, context 4010. One sherd (2g) with sandy matrix and rare small flint inclusions was decorated with a fingernail impression. This probably derived from a Beaker (Fig. 7, 2)

F101, context 1009 (lower fill). Thirteen fragments weighing 7g with sandy matrix and sparse medium and large flint inclusions. One sherd was decorated with a fingernail impression, and the group may derive from a Beaker vessel. Not illustrated.

F101, context 1007 (upper fill). Three scraps of pottery of indeterminate fabric. Possibly Late Neolithic/Early Bronze Age in date.

F102, context 1013. A total of 153 sherds, weighing 515g, came from a single vessel. Ten rim sherds, not all joining, represented *c.*33% of the total rim, while six base sherds represented 45% of the base. The sandy fabric contained sparse medium to large flint inclusions and a sparse scatter of shell fragments. The vessel possessed a simple ovoid profile and the rim was slightly flattened. Immediately below the rim a zone of decoration comprised opposed fine sharply incised diagonal strokes forming a herringbone design. Middle Bronze Age (Fig. 8, 3).

c) Pits further south

F400, context 4004. A large portion of a shouldered vessel was found intact and lying on its side. From a total of 32 sherds, weighing 542g, eight rim sherds represented 37% of the total rim, and one base fragment accounted for 35% of the original base. The soft and soapy fabric contained large fragments of grog. The vessel profile was distinctly shouldered,

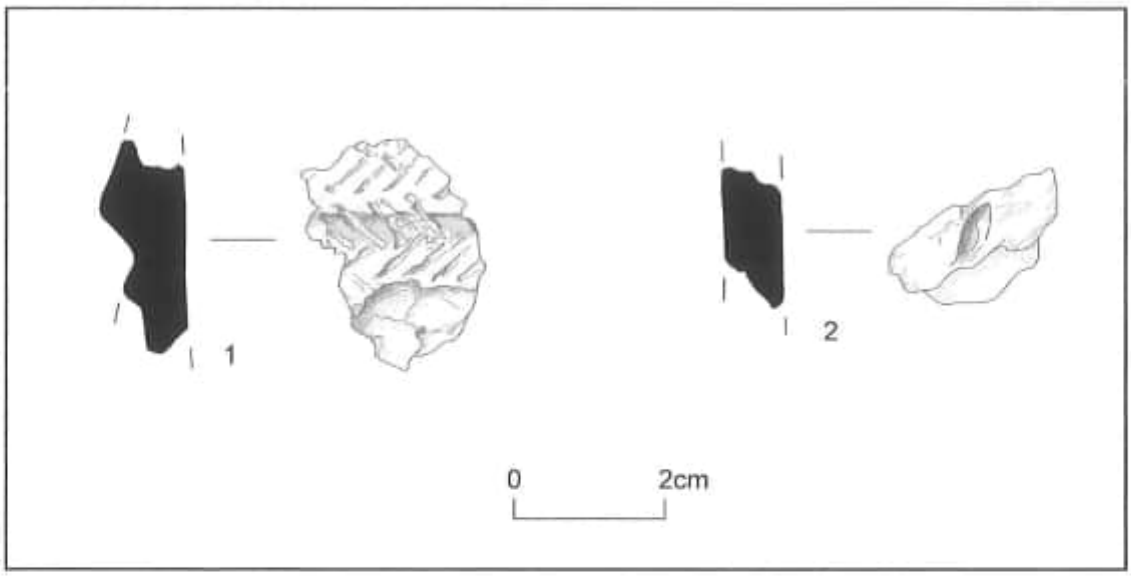

FIGURE 7 Neolithic and Early Bronze Age pottery

with a strongly everted rounded rim, and tapering to a relatively narrow base. The shoulder carried a row of very shallow and irregular fingertip impressions and the upper body was embellished with rough rows of fingernail impressions. Food Vessel Urn. Early Bronze Age. (Fig. 8, 4).

F407, context 4012. One sherd, weighing less than 1g, was in a sandy fabric and may have been Iron Age in date.

d) Isolated features

F200, context 2006. One plain wall sherd, weighing 5g, in a grogged fabric, may have derived from an urn of Early Bronze Age date.

F403, context 4007. Four scraps of pottery, weighing less than 1g, contained a moderate density of small flint inclusions. Period indeterminate.

Discussion

The presence of an unabraded sherd of Peterborough Ware at a fairly low level within the filling of the ring ditch suggests that this structure may have originated in the Neolithic period. Alternatively the sherd may have derived from a buried surface beneath a central mound of Early Bronze Age date. The pits to the south of the ring ditch were probably related to it. Two of them contained major portions from Bronze Age vessels, and seven further features contained small groups of sherds which were mainly of Late Neolithic/Early Bronze Age (Beaker) or Bronze Age date. The two part-vessels appear to have been deposited as incomplete vessels. Such a practice has been recognised elsewhere and may be related to the deposition of heirloom vessels: either the reburial of parts of urns taken from previous burials, or vessels from which parts have been removed as relics by family or other kin (Woodward 2002).

Beaker pottery is not common in the county of Buckinghamshire (Clarke 1970, 475). However there is a bowl which probably came from Chesham, and a fingernail-impressed Beaker is known from Win Hill, Hitcham (*ibid.*, Figs 199 and 115 respectively).

Food Vessel Urns are most commonly found in Scotland and the north. Such urns generally have an internally bevelled rim with internal and external expansions. The rim of the urn from Chesham (Fig.8, 4) is rather simpler than this, but can be matched among the scattered group of Food Vessel Urns found in the south of England. In the north, rows of oval or circular motifs at the shoulder are

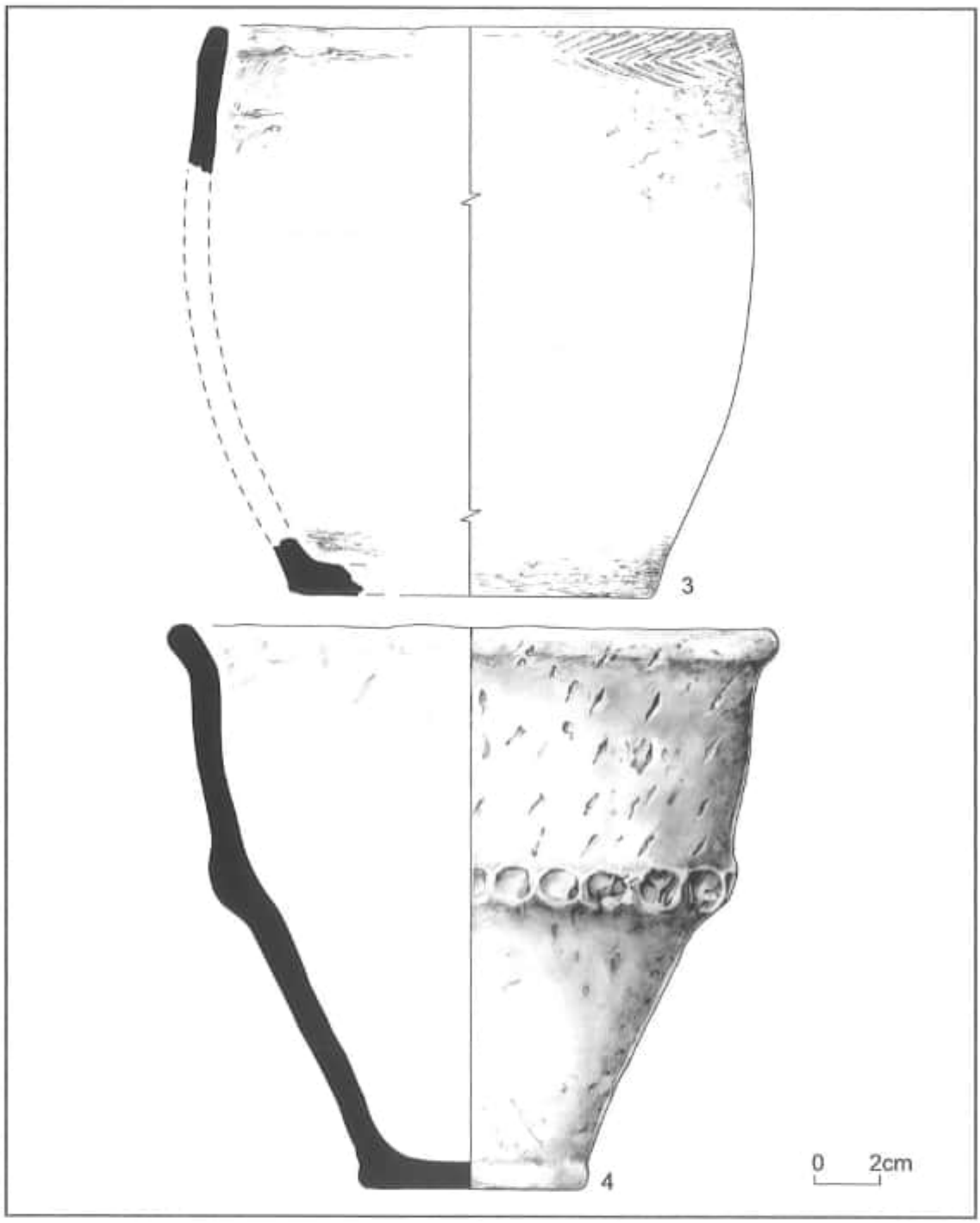

FIGURE 8 Early and Middle Bronze Age pottery

fairly common, but they are usually executed with a bone or stick, not the human finger (see Cowie 1978, Fig. 20: FIF3 and Fig. 18, AGS4). Food Vessel Urns of simpler profile, and with single rows of punctuations or fingertip impressions at the rim, or on shoulder ridges, are known from Frampton and Friar Waddon, both in Dorset (Forde-Johnstone 1958, 119, Pot E and 1965, Fig. 4). The grog fabric of the Chesham vessel is absolutely typical of urns of Early Bronze Age date (Ixer, Appendix 1).

The Middle Bronze Age urn (Fig.8, 3) belongs to the Lower Thames Group of the Deverel-Rimbury tradition as defined by Ellison (1975), and the best parallels are the two globular urns from Ashford Common, Sunbury, Middlesex (Barrett 1973, fig. 2, 15 and 16). The herringbone design is matched on vessel 16 from that site, while vessel 15 has some decoration (one incised line) just below the rim as well as a zone of more complex decoration in the more usual location at the belly. The Chesham vessel has inclusions of flint and shell. Amongst the Lower Thames Group flint fabrics predominate, with a few sandy examples (Ellison 1975, Table IV). Other Middle Bronze Age vessels from Buckinghamshire are listed by Barrett (1973, 131). However, all these are bucket urns, unlike the more exotic decorated vessel from Chesham.

Altogether the group of pottery forms a significant contribution to the body of Neolithic and Bronze Age pottery known from the county, and its importance is enhanced by its association with the monument represented by the ring ditch.

The Flints by Lawrence Barfield (Figs 9 & 10)

A total of 295 worked flints, as well as a considerable quantity of unworked flint, was collected from the site. Of the worked pieces 16 were burnt. 35 fragments of burnt natural flint were also recovered.

a) Raw materials

Local flint is represented by nodules and broken pieces. Many of the nodules show the effect of a natural process of hollowing. In one case a natural perforation may have been used for hafting since one end of the nodule was also abraded suggesting a hammer.

The local flint is mostly hard and coarse-grained rendering it unsuitable for working. Many of these nodules showed a brownish discoloration of the cortex while some had a creamy beige colour, suggesting they came directly from the chalk. Many natural pieces showed frost cracking and pot-lid fracturing.

The worked industry was mainly produced on a better quality flint some quite lustrous in quality. These pieces had a rounded, abrasive cortex unlike the unworked nodules suggesting a non-local source. The residual Mesolithic pieces universally had a fine glossy texture.

The Chilterns is rich in flint, which occurs naturally within the Chalk. Flint mining has been suggested at High Wycombe and Pitstone Hill, Bucks. (Holgate 1988, 64) and flint mines have been excavated at Rothersfield Peppard at the south-west extent of the Chilterns on the border with Oxon., and suggested to be of Late Neolithic date (*ibid.*).

b) Assemblage

The worked flint came from both prehistoric and more recent contexts. The total assemblage was small and statistical analysis could not be carried out. There are also few pieces that provide evidence of dating, although a general Late Neolithic to Bronze Age date can be suggested, in keeping with the rest of the material.

c) Mesolithic

A few pieces can be judged to be Mesolithic and thus residual to the main contexts identified on the site. These were absent from most of the larger, *in-situ*, prehistoric assemblages. The criteria used for identifying Mesolithic included bladelet technology with punch-struck bladelets, and removal of platform spurs, also with a punch.

Nine pieces were recognised including a possible core from 4080, bladelets from F102, F407 (4012), 4072, 1007, 1011 and the colluvium. Opposed platform technology, common in the Mesolithic, although also present in the Neolithic, was noted on a piece of debitage from F305.

A large assemblage of Mesolithic material was recovered from nearby in Stratford's Yard, Chesham. Although this was mainly Mesolithic, there was also some Neolithic and later admixture (Stainton 1989). While there were no levels which could relate to the Mesolithic on the Chessvale Bowling Club site, the rarity of Mesolithic material might suggest we are dealing with an outlying scatter related to the Stratford's Yard assemblage or that

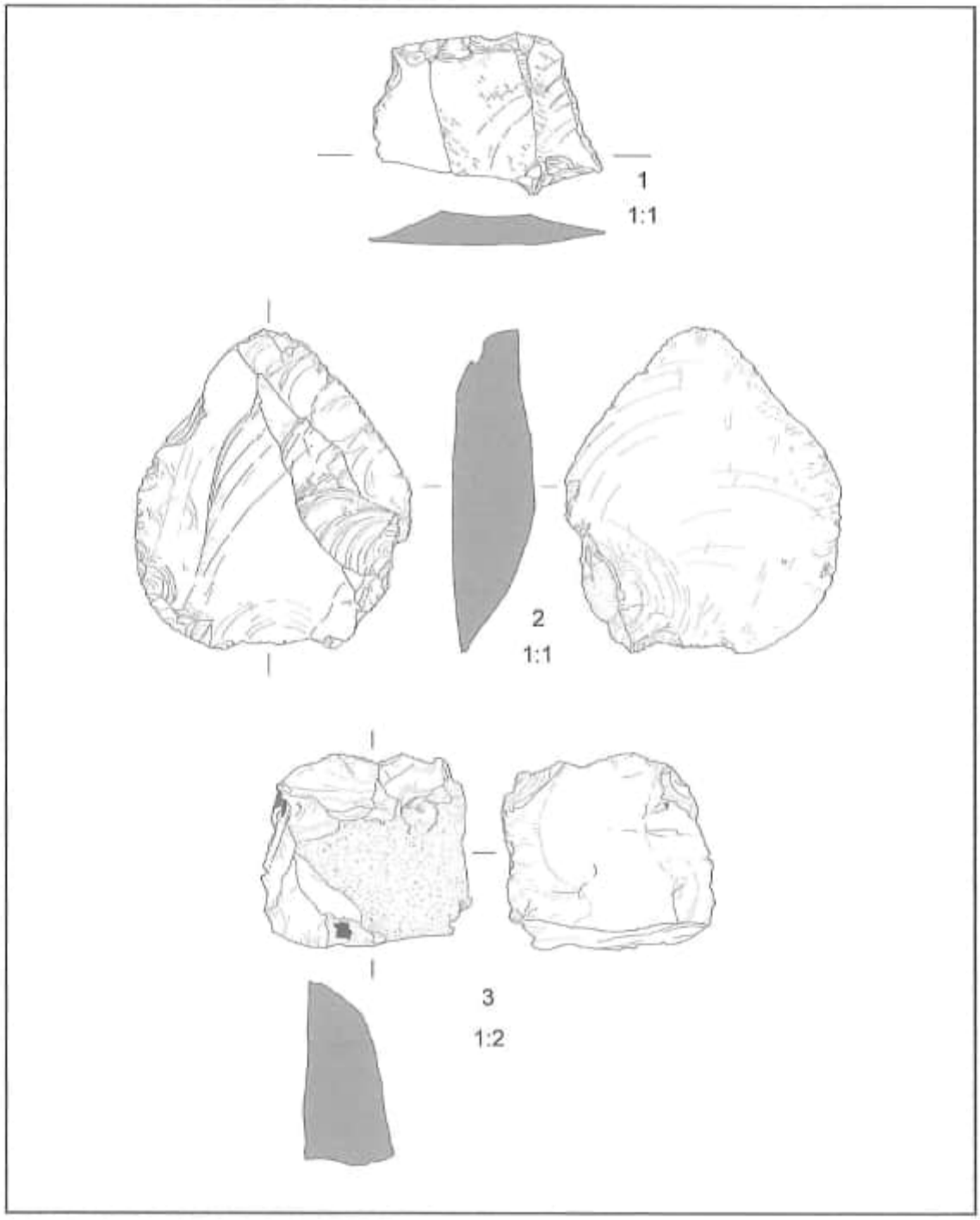

FIGURE 9 Flint

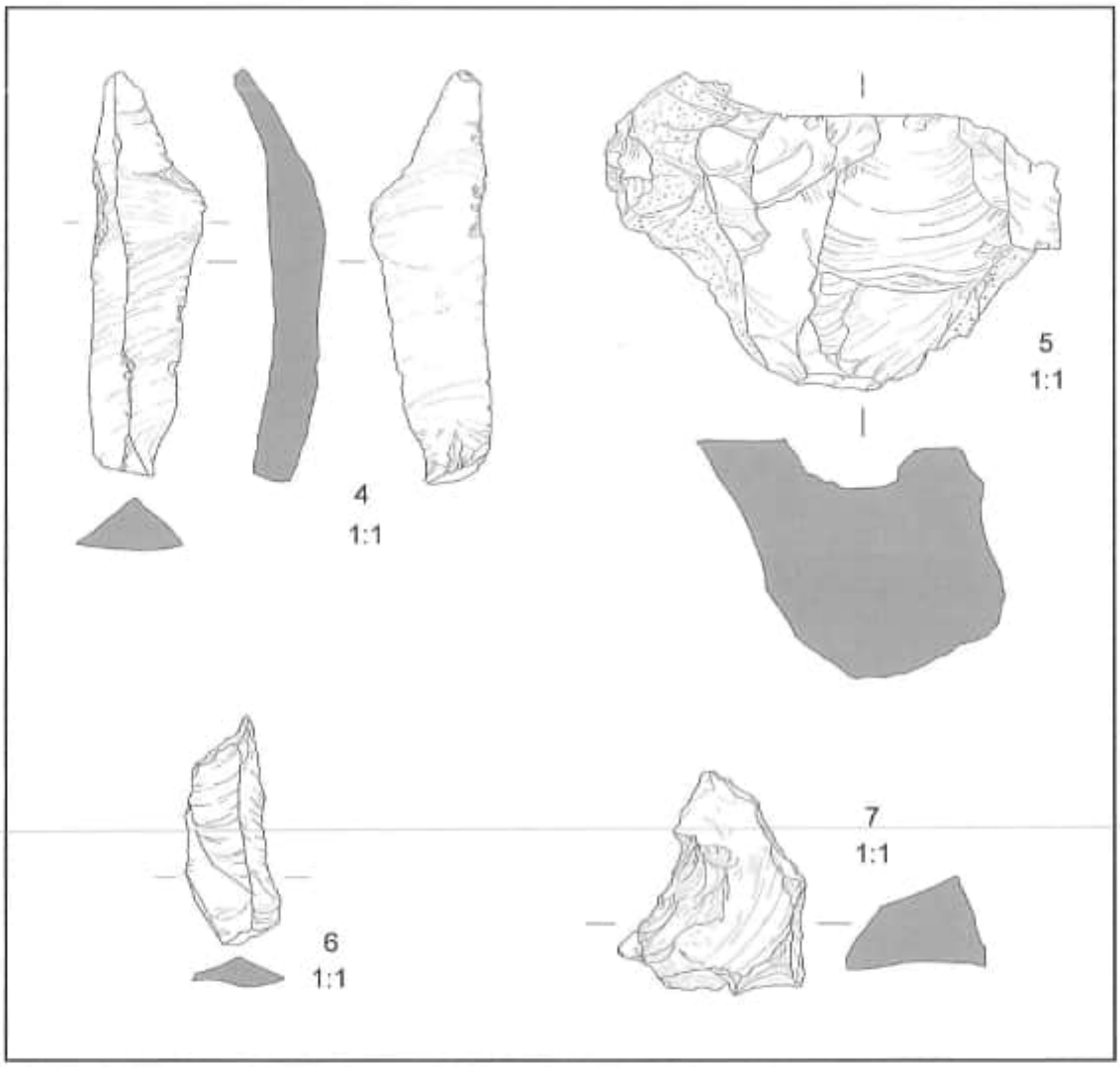

FIGURE 10 Flint

earlier deposits had been removed prior to the later prehistoric occupation.

d) Later prehistoric flint

The associated finds and the technology of the flint material from the site suggest a late use of flint, between the Later Neolithic and the Bronze Age.

e) Artefacts

Transverse arrowhead (?). This is a fragmentary piece, which has been roughly retouched along two sides into a trapezoidal shape. (Fig. 9, 1; Trench 3 (3011).

Discoidal scraper. This is a flake which has been lightly retouched into a discoidal scraper (Fig. 9, 2; F439 (4049).

Large retouched scraper? On a thermal flake (Fig. 9, 3; F102 (1010).

Asymetric Point or Awl. This is a blade with steep retouch forming the point (Fig. 10, 4; F451 (4076).

The transverse arrowhead has been deliberately worked but is technically inferior to the classic flat flaked pieces of the Late Neolithic. A secure judgement on this piece is out standing. No dating can be suggested for the other pieces.

A few blade-like flakes had probable micro-retouch although this is not chronologically diagnostic.

Several abraded flint lumps were found but only one, from 4082, can be regarded as a hammer-stone.

f) Debitage

Three certain examples of cores were recovered, all simple single-platform flake cores found in the ring ditch fills. Two were recovered from F439 (4049 (Fig. 10, 5) and 4061) and the third from F451 (4080). In addition, two further pieces from the ring ditch F451 (4075 and 4082) are better described as tested nodules, with only single flakes removed. Several core fragments were also recorded.

The main body of the collection comprises flakes that have been struck during core-reduction sequences to produce blade-like flakes in the later stages of flake/ blade production. Hard hammer technique is dominant with either crude or no platform edge preparation; a soft hammer was apparently used for the final flaking process. In some instances blade-like flakes have been struck using the edge of the platform as a guide blade/flake demonstrating the process of core rotation.

In the whole collection there were few primary flakes suggesting that the cores were brought to the site from elsewhere already roughed out, as indeed suggested by the quality of the flint which is superior to that occurring locally.

g) Contexts

Some pits had higher concentrations of flint than others. Four of these F101, F102, F302 and F438, as well as part of the ring ditch fill, F439 and post hole F305 contained material which appeared to be contemporary with the feature. Indeed, in both F302 and F438 the flaked material was fresh and included pieces which appeared to be part of a single flaking process using the same (separate) raw materials which were contemporary with the use of the pit. No refitting was found however. By contrast other stratified contexts contained very little flint.

Pit F438 (contexts 4047, 4048, 4050)

This collection comprised 29 struck flakes (of which four were burnt) and 4 burnt fragments. The worked flint included 8 broad flakes with narrow striking platforms which looked as if they had been removed from the front of the same large core. They had been struck with a hard hammer and mostly had the platform edge prepared prior to flaking by invasive trimming flakes. The source material had a similar rounded, rough cortex. There were five smaller blade-like flakes which represent a later stage of core reduction, possibly from different cores. All the flakes and blade-like flakes were struck using a hard hammer with the exception of one blade-like flake probably removed using a soft hammer. There were 6 secondary flakes and 20 tertiary flakes. The assemblage relates to the reduction of one or more large cores.

Pit F101 (1009)

This assemblage was composed of twenty-three flakes of which four were burnt. It included several thick core reduction flakes, a platform tablet and one blade-like flake. Three flakes were secondary and 20 tertiary.

Pit F102 (1010)

This assemblage consisted of twenty nine flakes among which are seven blades and blade-like flakes, some showing hammered platform edge preparation and one at least with punch-struck platform preparation-possibly Mesolithic. There were also some 11 chips and small flakes from flaking debris. One probable point produced by steep retouch was recovered (Fig. 10, 6). The assemblage could be the result of a single production sequence. Five secondary cortex flakes and 13 tertiary. The absence of burnt flint was to be noted from this pit.

Pit F302 (3016)

11 flakes and 2 burnt fragments. Among the flakes were four of an identical, greyish, slightly grainy flint, showing the same technical features. Three were blade-like flakes produced by flaking along the platform edge and the fourth was a wider flake produced in the same manner, removing the platform edge. These are features of core rotation. There is little doubt that these mostly represent a single flaking sequence, contemporary with the use of the pit, although there was no refitting. Five secondary cortex flakes and seven tertiary flakes.

Ring Ditch Fill F439 (contexts 4049, 4061, 4062, 4063)

The worked flint comprised 37 flakes of which five were burnt, and 9 burnt fragments. The collection contained several large nodule fragments, representing the initial stages of core preparation, one single platform core of good quality, a broken core and a core with several flake removals and heavy abrasion of the platform edge. Several flakes and one blade-like flake were present. The only tool was an *ad hoc* scraper. Again there was an absence of primary cortex flakes.

Post Hole F305

This contained 6 flakes and chips suggesting that it might be prehistoric in date.

The following contexts, which on other criteria have been judged Roman or later in date contained little flint. Those recovered can be considered residual, or in the case of some unpatinated flakes, the residue from the trimming of flint nodules for building.

F200 (Roman) 1 flake

F103 (Medieval) 2 unpatinated flakes

F104 (modern) 1 flake

F306 (modern) 1 flake

F308 (modern) 6 flakes and one burnt flint

F307 (modern) 1 flake

h) Burnt Flint

Burnt flint is a common phenomenon on Neolithic sites although rarely quantified. Here the burnt struck flakes comprised 5.4%. The majority of pieces (35), were fragments and chunks of unworked flint. Burnt flints were also recorded from Stratford's Yard in Chesham (Stainton 1989).

i) Recent and Modern use of flint

Some large atypical unpatinated flakes may have been produced as a bi-product of building with flint blocks. These characteristically came from medieval and recent levels. Other blocks of unpatinated flint, which might in a stratified context be taken for hammer stones, were probably from use in a cobble yard, since the abrasion is deep and irregular.

One roughly triangular piece from 1011 (Fig. 10, 7) has steep hammer flaking on two sides meeting at an angle, while the third side shows shallower invasive damage. It is probable that this is a wedge-type gunflint of 17th or 18th century date.

Discussion

The quantity of flint recovered was relatively small, especially when we consider that the site is on chalk and we compare the quantity with the many thousands of pieces from the nearby site of Stratford's Yard. This fact may reflect a decline in the use of flint in the Late Neolithic and Bronze Age.

In several pits the flint appears to be contemporary with the filling of the pit, with debitage from a single flaking sequence being present. The relative rarity of primary cortex flakes from the site supports the interpretation that cores were prepared elsewhere, and, by implication, that the local flint was not worked. One or two nodules of flint from the ditch, however, appeared to have been tested.

The finds reflect the sporadic reduction of cores of flint for the manufacture of blade-like flakes which may well have been used in an unmodified state.

The Charred Plant Remains
by Val Fryer

Samples for the extraction and assessment of the plant macrofossil assemblages were taken from pits F400, F402, F405/6, F407 and F438 and from the three sections excavated within the ring ditch (F439, F449 and F451). A total of twenty-five samples were submitted for assessment.

Methods

The samples were bulk floated by Birmingham Archaeology, with flots collected in a 500 micron mesh sieve. The dried flots were scanned under a binocular microscope at magnifications up to x 16, and the plant macrofossils, mollusc shells and other remains noted are listed below (Archive, Tables 1 – 4). Nomenclature with the tables follows Stace (1997) for the plant remains and Kerney and Cameron (1979) for the mollusc shells. All plant remains were charred.

Results of assessment Plant macrofossils

With the exception of charcoal fragments, plant macrofossils were extremely rare. Poorly preserved

grains of barley (*Hordeum* sp.) and wheat (*Triticum* sp.) were noted in six samples, and additional indeterminate grains were noted in a further two samples. A bread wheat (*T. aestivum/compactum*) type rachis node was recovered from sample 15 (pit F438), although the condition of this piece was so good that it is considered most likely to be a modern contaminant. A single goosegrass (*Galium aparine*) seed from sample 24 (ditch segment F449) was the sole recorded weed seed. Small fragments of hazel (*Corylus avellana*) nutshell were recorded from a total of eight samples. Other plant macrofossils were also rare, although small pieces of charred root/stem and occasional indeterminate seeds were noted within samples 2 (pit F402) and 25 (ditch segment F449).

a) Mollusc shells

With the exception of sample 31, where charcoal fragments were abundant, mollusc shells formed the major component of all the assemblages studied. The condition of the shells was mostly very good, with minimal abrasion or fragmentation, possibly indicating that a large proportion of each assemblage is intrusive within the contexts from which the samples were taken. However, certain shells (most notably those of *Clausilia* sp. and *Discus rotundatus*) showed distinct signs of weathering, and these may well be contemporary with the features.

All four of Evans (1972) ecological groups of terrestrial molluscs were represented with woodland/shade loving species and open country species being most abundant. This apparent dichotomy could possibly be explained by stating that features in an area of predominantly short grassland were either locally very shaded or sufficiently deep to provide damp shade at their bases. However, it could equally be correct that the assemblages have been so severely contaminated by later intrusive material that any meaningful interpretation is difficult if not impossible. It would sadly appear that the latter explanation is perhaps more likely, as the expected differentiation between various levels within the ditch segments does not occur, with all assemblages being reasonably uniform in composition. However if, as stated above, the poor condition of certain specimens is an indicator of their antiquity, then it would appear that at least some moist and well shaded habitats were locally available.

b) Other materials

The fragments of black 'cokey' and tarry material recorded from fifteen samples may be residues of the combustion of organic remains at very high temperatures, although it should be noted that some may be derived from the layer of industrial waste which was used to facilitate drainage beneath the bowling green. This latter could also explain the presence of small fragments of coal, ?slag and vitrified material in eight of the assemblages. Small (<2mm) bone fragments were noted in samples 2, 7 and 16.

Conclusions

In summary, although it would appear most likely that later intrusive material, including both plant remains and mollusc shells, is present in most of the assemblages studied, the following generalisations can be made.

Charred plant remains are more common in the samples from the pit fills, possibly indicating that these assemblages are derived from material deliberately placed within the pits, probably in the form of culinary/domestic refuse. As is common on sites of this date, the food remains indicate a dependence on both agricultural produce and plants gathered from the wild.

The low density of plant remains within the ring ditch may indicate that this material was accidentally incorporated within the ditch fills, possibly in the form of scattered and/or wind-blown detritus.

Although the mollusc assemblages are difficult to interpret, it would appear that some features constituted moist and well shaded microhabitats.

Assessment of Pollen by James Grieg

One sample from the site at Chesham (F438, 4047) was submitted for assessment of the pollen content. The sample contained a small amount of pollen, despite the rather unpromising chalky nature of the sample.

Pollen analysis

The pollen sample was processed using the standard method; about 1 cm^3 subsample was dispersed in dilute NaOH and filtered through a 70µm mesh to remove coarser material, which was then scanned under a stereo microscope. The finer organic part of the sample was concentrated by swirl separation on a shallow dish. Fine material

TABLE 2 Pollen and spores

spores		
Pteridium	1	Bracken
pollen		
Pinus	1	Pine
Ranunculus-tp.	1	buttercup, crowfoot
Cannabis-tp.	?	hemp, hop
Quercus	1	Oak
Alnus	2	Alder
Corylus	2	Hazel
Brassicaceae	1	Brassicas
Plantago lanceolata	2	ribwort plantain
Sambucus nigra	1	Elder
? Campanulaceae	1	Bellflowers
Lactuceae	2	a group of composites
Cyperaceae	1	Sedges
Poaceae	7	Grasses
? Secale tp.	1	Rye
total	24	

(10 traverses of the slide, and a scan at low power magnification)

was removed by filtration on a 10µm mesh. The material was acetolysed to remove cellulose, stained with safranin and mounted on a microscope slide in glycerol jelly. Counting was done with a Leitz HM-Lux3 microscope.

Results

The coarse sievings were scanned under a stereo microscope and showed that the finer sediment was mixed with chalky debris, charcoal and brick/pot. There was a seed of *Sambucus nigra* (elder) which is robust enough to survive poor conditions of preservation, but organic material was otherwise not seen.

The pollen preparation contained a certain amount of very fine organic material which resembled that in the upper parts of some cores, which may have come from soil rather than peat. There was a small amount of pollen, and the rather few grains were quite well preserved, better preserved than might be expected from such sediment, although they did not look modern, as very recent pollen usually stains a different colour. The pollen types have been listed in taxonomic order according to Kent (1992), in Table 2. They show a typical range of an occupied landscape, with a few trees such as *Alnus* (alder) and *Corylus* (hazel), some Poaceae (grasses), *Plantago lanceolata* (plantain) and other weeds, and a possible cereal grain. There was also a grain of Cyperaceae (sedge) and a spore of *Pteridium* (bracken).

Conclusions

This result is rather inconclusive; it does seem to show that at least some pollen can be preserved which could be contemporary with the sediment. Otherwise, pollen preservation in chalky material, especially if it is not completely waterlogged, is always a chancy affair.

CHARCOAL ANALYSIS by Rowena Gale

Introduction

The small assemblage of poorly preserved charcoal recovered during the excavation of the ring ditch and associated pits is attributed to activities on or around the monument. In view of the importance of the site, seven samples were selected for charcoal analysis to indicate the character of the fuel and to assess the potential of the material for radiocarbon dating. Environmental data relating to contemporary woodland was also sought.

Methods

Bulk soil samples were processed by flotation by Birmingham Archaeology and the flots collected

TABLE 3 Charcoal

Context	*Sample*	Corylus	Fagus	*Pomoideae*	Quercus
Phase 2					
Mid-Late Neolithic					
Pit F438					
4047	13	9	–	1	1
4048	14	6 + 6n	–	3	1
4050	15	4	–	–	–
Phase 3					
Early Bronze Age					
Southern ring ditch area F439					
4061	27	–	–	–	13
4063	28	3	–	2	–
Western ring ditch area F451					
4080	35	–	–	–	21
Pit 400					
4004	1	–	3	*cf.* 1	–

Key. n = nut shell
The number of fragments identified is indicated

on a 500 micron mesh. These were scanned under low magnification and the charcoal separated from plant macrofossils. Most of the charcoal samples included <10 fragments. The condition of the charcoal was poor and friable and few pieces exceeded 2mm in radial cross-section. In view of the paucity of charcoal, all fragments measuring >1mm were considered for identification.

The samples were prepared using standard methods (Gale and Cutler 2000, 12). Anatomical structures were examined using incident light on a Nikon Labophot-2 compound microscope at magnifications up to x400 and matched to prepared reference slides of modern wood. The poor condition of the charcoal prevented an assessment of the maturity of the wood.

Results

The taxa identified are presented in Table 3. Classification follows that of *Flora Europaea* (Tutin, Heywood *et al* 1964–80). When anatomical differences between related genera are too slight to allow secure identification to genus level, for example, members of the Pomoideae (*Crataegus, Malus, Pyrus* and *Sorbus*), these are included as a group. When a genus is represented by a single species in the British flora, it is named as the most likely origin of the wood, given the provenance and period, but it should be noted that it is rarely possible to name individual species from wood features and exotic species of trees and shrubs were introduced to Britain from an early period (Godwin 1956; Mitchell 1974). The anatomical structure of the charcoal was consistent with the following taxa or groups of taxa:

Corylaceae. *Corylus avellana* L., hazel
Fagaceae. *Fagus sylvatica* L., beech; *Quercus* sp., oak
Rosaceae. Subfamily Pomoideae, which includes *Crataegus* sp., hawthorn; *Malus* sp., apple; *Pyrus* sp., pear; *Sorbus* spp., rowan, service tree and whitebeam. These taxa are anatomically similar; more then one taxon may be represented in the charcoal.

a) Phase 2, Mid – Late Neolithic

Pit F438

This circular pit was sited on the south-west side of the ring ditch. It was cut into the natural chalk and measured 0.9m in diameter and 0.58m in depth. A number of struck flints were present throughout the pit. Charcoal occurred in each of the three fills, contexts (4047), (4048) and (4050). Context

(4050), the primary fill, contained a small quantity of hazel (*Corylus avellana*), whereas the two upper fills included hazel (*Corylus avellana*), the hawthorn/ *Sorbus* group (Pomoideae) and oak (*Quercus* sp.).

b) Phase 3, Early Bronze Age

Charcoal was examined from two of the three sections of ring ditch.

Southern ring ditch area F439

Context (4063), a silty deposit near the base of the ring ditch, included pottery, flintwork and charcoal. The latter consisted of hazel (*Corylus avellana*) and the hawthorn/ *Sorbus* group (Pomoideae). Another silty deposit, context (4061), overlay this layer; associated charcoal consisted of oak (*Quercus* sp.), probably from sapwood with moderate growth rates.

Western ring ditch area F451

Very thin slivers of oak (*Quercus* sp.) were recorded in context (4080), a steeply tipped infill towards the base of the ditch. It was not possible to establish the maturity of the oak.

Pit F 400

The pit, which measured 0.8m by 0.55m and 0.24m in depth, was cut into the chalk about 14m southeast of the ring ditch. A Food Vessel Urn was recovered from the fill of the pit together with a few charred cereal grains and tiny fragments of black porous 'cokey' material and coal. Charcoal was sparse but included beech (*Fagus* sp.) and *cf.* hawthorn/ *Sorbus* group (Pomoideae).

Discussion

The Early Bronze Age monument was located on a terraced hill-slope in the Chess Valley at about 115m OD. The underlying geology at the site was chalk, with gravel and alluvium in the bottom of the valley. There was no evidence of settlement in the immediate vicinity, although this could not be ruled out; neither was there any evidence to suggest the use of the site as a cemetery. The ring ditch formed the major feature, and the associated pits and other features constructed in close proximity were, presumably, related to ritual activities and events at the site.

The charcoal deposits were sparse and poorly preserved. Samples were examined from the southern and the western ring ditches, F439 and F451; both samples dated to the Early Bronze Age (Phase 3). Charred cereal grains present in F439 suggest the dumping of waste from food preparation (Fryer, above); by association, the charcoal seems likely to be domestic fuel debris. Charcoal recovered from F451 is probably similar in origin. Pits F438 and F400, dated to the Late Neolithic and Early Bronze Age respectively (Phase 3), were probably constructed for rubbish disposal, although a Food Vessel Urn in F400 could infer ritual deposits. Charred hazel nutshell, cereal grain (Fryer above) and charcoal were also named in pit F400 and, assuming these not to be ritual deposits, these too are likely to relate to debris from feasting.

The charcoal was recovered in such small quantities that it was impossible to assess whether ritual/ preferential selection of the wood species for firewood played any part in the activities at the monument. With the exception of context (4080) from ditch F451, multiple species occurred in all the samples examined, i.e., oak (*Quercus* sp.), hazel (*Corylus avellana*), the hawthorn/ *Sorbus* group (Pomoideae) and beech (*Fagus* sp.) (Table 3). Any significance that might attach to the single species (oak) present in the western ring ditch F451 is negated by the minimal amount of charcoal available for examination.

The ring ditch was constructed on the chalky slopes of the Chess Valley, overlooking the river Chess. The analysis of pollen from pit F438 identified species typically of occupied landscapes (Greig above). Tree and shrub species included oak (*Quercus* sp.), hazel (*Corylus avellana*), alder (*Alnus glutinosa*), pine (*Pinus* sp.) and elder (*Sambucus nigra*), of which only oak and hazel were represented in the charcoal deposits. Although poor preservational conditions could also be relevant to the narrow range of taxa named from the charcoal assemblage, it is probable that only species growing in the immediate vicinity of the site were collected for firewood. Alder was probably restricted to the damp alluvial soils in the valley bottom and since pine prefers acid soils and the pollen can be wind-borne over long distances, this taxon is also likely to have been growing further afield.

In addition to oak and hazel, the charcoal included the hawthorn/ *Sorbus* group (Pomoideae) and beech (*Fagus* sp.). These taxa typically grow on chalkland, although all but beech would also tolerate the more acidic conditions prevailing in the valley bottom.

The presence of beech at the site is of some interest, since, in the present day, the Chilterns are famous for the cathedral-like beechwoods. Because of infrequent flowering and low pollen production, beech is often under-represented in palynological studies compared to other trees (Godwin 1956, 206), thus the native distribution and frequency of beech woodlands in Britain is uncertain. By the medieval period, beech played a major role in the local economy of the Chilterns, which often resulted in the clearance or reduction of competing trees (Marren 1992, 59–62).

Conclusion

The identification of charcoal from deposits in the southern and western segments of the ring ditch, F438 and F451, and from the associated pits F438 and F400 indicated the use of firewood collected from oak (*Quercus* sp.), hazel (*Corylus avellana*), the hawthorn/ *Sorbus* group (Pomoideae) and beech (*Fagus* sp.). The relatively narrow range of species identified probably reflects the paucity of charcoal available for examination rather than either preferential selection or the distribution of species in the landscape; the local environment would almost certainly have supported a more diverse range of trees and shrubs (as indicated by the pollen record). It is suggested that the charcoal probably originated from food preparation (i.e., domestic/ cooking hearths) associated with activities at the monument.

The Animal Bone by Emma Hancox

Introduction

The animal bone submitted for analysis represented a very small assemblage. This report follows MAP 2 guidelines (English Heritage 1991), and comments on the quantity and quality of the material and presents the conclusions that have been drawn from its assessment.

Methodology

The mammal bone was assessed following the standard protocol of Birmingham Zoological Laboratory, which is based on a modified version of the system described by Albarella & Davis (1994) and Davis (1992). This system considers certain anatomical elements as 'countable'; it does NOT include every bone fragment that is identifiable. The recordable skeletal elements considered are as follows: all the teeth, the skull (zygomaticus), scapula (glenoid articulation/cavity), distal humerus, distal radius, proximal ulna, carpals 2–3, distal metacarpal, pelvis (ischial part of the acetabulum), distal femur, distal tibia, calcaneum (sustentaculum), astragalus (lateral part), naviculocuboid/scafocuboid, distal metatarsal, proximal phalanges 1–3. At least 50% of the specified area has to be present to be 'countable'.

Horncores are considered as 'non-countable' elements using this system, however, they are recorded separately as noteworthy 'non-countables', along with any bones displaying evidence of butchery, pathology, burning or gnawing and any unusual species. These elements are not included in any statistical analysis. The following skeletal elements were considered 'countable' for birds: scapula (articular end), proximal coracoid, distal humerus, proximal ulna, proximal carpometacarpus, distal femur, distal tibiotarsus, distal tarsometatarsus. All fish bone fragments were considered to be 'countable'.

The state of fusion was recorded as fused, fusing (i.e. spicules of bone have formed between the epiphysis and the diaphysis, but the line of fusion is still visible) or unfused. Bird bones were recorded as juvenile where complete ossification had not taken place. No bones were measurable due to the poor state of preservation.

The Assemblage

The state of preservation was mostly extremely poor, the cortical integrity (exfoliation of the outer layers of the bone surface) was very poor and the level of fragmentation was high. Just 8 recordable bones were noted in 8 contexts, none of which were measurable. 4 deer bones, 2 cattle, 1 pig, 1 horse and 1 cat bone were recorded. Butchery was noted in 3 contexts (4044, 4006, 4046), burning on an unstratified bone and gnawing in context 4044. Contexts 4006 and 1009 were dated to the prehistoric period, contexts 4044 and 4057 were deemed post-medieval and the other contexts are undated. This makes it impossible to compare the 8 recordable bones to each other.

The faunal material is too small to draw any conclusions as to the types and ratios of taxa on site in the past or speculate as to their relative importance or use. The assemblage is, therefore, deemed to be of little archaeological potential.

Discussion: The Context of the Archaeology at Chessvale

The site at Chessvale Bowling Club appears to have been on the periphery of the Mesolithic settlement, previously recorded at Stratford's Yard at the southern end of East Street (Stainton 1989). A few residual bladelets were recorded, but nothing to suggest the presence of any sustained or recurrent activity in the period.

A sherd of Peterborough Ware represents activity on the site in the Middle Neolithic and on the basis of absolute dates from elsewhere could date anywhere between 3600 and 2300 BC (Gibson 2002, 80). The sherd may be residual in the fill of the ring ditch, on the basis of an Early Bronze Age radiocarbon date from a lower (albeit separate) ring ditch fill (1900–1730 BC, SUERC-9523). The presence of Peterborough Ware at Early Bronze Age funerary and ceremonial monuments can be exemplified elsewhere. Peterborough Ware from the fills of a ring ditch at Merton, Oxfordshire, has also been regarded as residual, pre-dating an Early Bronze Age monument (Bradley *et al.* 1997, 82–83). A large Peterborough ware assemblage was recorded during excavations in the 1930s from the barrow mound at Whiteleaf Hill, Bucks (Childe 1954). The Peterborough Ware was recorded from within the overlying mound rather than being associated with the primary burial deposit. Whether this material was residual, having derived from earlier settlement activity is, however, unclear.

Late Neolithic activity on the site is indicated by three radiocarbon dates from pits which calibrate to between 2760–2560 BC (SUERC-9148), 2580-2430 BC (SUERC-9149) and 2480–2280 BC (SUERC-9144). In view of recent re-evaluations regarding the dating of Peterborough Ware (Gibson 2002, 80), it is possible that these early radiocarbon dates from the site are contemporary with the use of this type of pottery at Chessvale. However, whilst it is possible that the date obtained from one of the pits (F438; SUERC-9149) is contemporary with the feature, the other two radiocarbon dates from pits are residual, on the basis of their association with Early and Middle Bronze Age pots. If the date from F438 is contemporary with the backfill of the feature, then this would suggest that this pit pre-dates the ring ditch and is the earliest dated feature on the site.

Despite residual finds on the site, the earlier material, represented by the Middle Neolithic Peterborough Ware, radiocarbon-dated Late Neolithic animal bone and hazel nutshells, may indicate settlement here pre-dating the ring ditch. To what extent this earlier phase or phases of activity influenced the siting of the later ring ditch is unknown.

The flint assemblage from Chessvale suggests general Late Neolithic and Bronze Age activity, contemporary with both the ring ditch and a number of associated pits. Flintwork appears to have been imported to the site, with non-local flint characterising the worked pieces and a lack of primary flakes.

The construction of a ring ditch, with internal mound and possibly a low external bank, appears to mark the establishment of the site as a ritual focus. A radiocarbon date (SUERC-9523) from animal bone within a lower fill of the ring ditch, calibrating to between 1900 and 1730 BC, places the use of the monument to within the Early Bronze Age. The ring ditch appears to have acted as a focus for the cluster of pits recorded to the southeast of the monument.

The presence of Beaker sherds from within two pits (F101 and F405), indicates activity from the Late Neolithic/ Early Bronze Age. The currency of Beaker pottery extended into the second millennium BC, though it appears to be less frequent post 2000 BC (Needham 1996, 124–131). It is possible therefore that the Beaker sherds are residual within later pits, and relate to activity on the site which may pre-date the ring ditch. However, it cannot be ruled out that the Beaker sherds were contemporary with the use of the ring ditch and their date accords with the general date of the flint assemblage on the site.

An Early Bronze Age Food Vessel Urn in pit F400 to the south of the ring ditch appears to reflect contemporary activity relating to it. This activity appears to have extended into the Middle Bronze Age, with the deposition of a partial Deverel-Rimbury urn in pit F102 close to the south-east side of the ring ditch. It has been suggested that the incomplete Early and Middle Bronze Age pots may have been re-buried on the site, as part of ceremonial activities (Woodward, above). This could suggest that the pottery was of some age before its final deposition. The presence of Early and Middle Bronze Age pottery in pits at the site suggests that the ring ditch was a focus of repeated, if intermit-

tent, activities over a potentially long time period.

The presence of possible Late Bronze Age and Iron Age sherds from pits on the site, suggests that activities in the vicinity of the ring ditch may extend into the early first millennium BC. Whether this activity consciously referenced the ring ditch site is uncertain.

Longevity is not unusual at ring ditch and barrow sites in Britain, although their active usage as ritual monuments falls away in the later second millennium BC. This longevity may in itself have provided the site with ritual significance in terms of origins and ancestry for successive communities (Bradley 2002, 6-8). The presence of an unabraded sherd of Peterborough Ware in the ring ditch fill may arguably be seen as an intentional reference to earlier activity on the site. This, however, is not easily demonstrated and would also imply a knowledge or awareness of earlier activity here and an active interpretation of this by Early Bronze Age communities.

Very few ring ditch and round barrow sites have been excavated in the county of Buckinghamshire. Round barrows and ring ditches are clearly present in Buckinghamshire and the Chilterns generally (e.g. Dyer 1959), but research and excavation appears to have been sparse since the mid-nineteenth and early twentieth century. A round barrow excavated in the 1930s at Bledlow has been considered to be "the only Buckinghamshire round barrow to have been excavated, and the work reported on, in an acceptable modern manor" (Farley 1992, 11). A Beaker inhumation has been recorded at Ravenstone in association with a ring ditch (Field 1974) and a further crouched inhumation of comparable date excavated at Princes Risborough in the Chilterns (Farley and Browne 1983). More recently Middle Bronze Age cremations together with fragmentary ceramic vessels, have been recorded in the 1990s on gravels at Milton Keynes (Pine 2003). Indeed, a number of ring ditches have been recorded along the gravels of the River Great Ouse, north of the Chilterns (Field 1974) and several excavated (e.g. Green 1974). However, these contexts cannot be compared directly with the Middle Chalk at Chesham.

It has been suggested that the ring ditch at Chesham had an external bank, based on the interpretation of the ring ditch fills. The external bank can be paralleled at a number of sites in the south of England and appears to be a variant form of the bowl barrow type (Megaw and Simpson 1988, 210).

The siting of the ring ditch at Chesham, towards the base of a hill-slope in the Chess Valley, may be significant in terms of the identification of further monuments. Ring ditches within valley floor contexts appear to be common (e.g. Milton Keynes, Woodward 2000, 58–60) being easily identifiable through aerial photography and large-scale development. Examples in hill-slope locations appear to be less well documented, although several barrows, as opposed to ring ditches, have been recorded in hill-slope contexts in other regions. A comprehensive assessment of barrows in Gloucestershire and the Cotswolds, for example, has recorded barrows in hill-slope locations and overlooking rivers (Darvill and Grinsell 1989, 49, 73–82).

The Chessvale ring ditch appears to be small (6.5m external diameter) when compared generally with Late Neolithic or Early Bronze Age ring ditches, which more commonly measure c. 20m in external diameter, using examples from Buckinghamshire and Oxfordshire (cf. Green 1974; Bradley *et al.* 1997; Boston *et al.* 2003). A ring ditch with a comparable diameter of 7m has been recorded on the chalk of the Chiltern ridge at Five Knolls, Bedfordshire (Matthews 1976, 26) with Beaker and Collared Urn ceramics, which would also place it in the Early Bronze Age.

A number of small ring ditches have been recorded at Barrow Hills, Radley, Oxfordshire, as part of an extensive Neolithic and Bronze Age monument complex on a gravel terrace of the River Thames (Barclay and Halpin 1998). Ring Ditch 611 has an outer diameter of 6.5m, and is therefore, directly comparable with the Chesham example, although the Radley ditch was more substantial with a depth of 1.75m, when compared to 1.15m at Chesham. Primary deposits of animal bone at Radley ring ditch 611 provided a radiocarbon date (BM-2713) which has been calibrated to between 2900 and 2200 BC (Barclay and Halpin 1998, 35). Subsequent use of this monument included an urned cremation with a radiocarbon date (OxA-1873) calibrating to between 2040 and 1640 BC (*ibid.* 35), which is comparable to the date of obtained from the ditch at Chesham. Later use was represented by an animal burial with a date (BM-2896) calibrated to between 1100 and 890 BC. Whilst the date for the cremation here can be compared with the radiocarbon date from the ring ditch

at Chesham, it is also worth highlighting that the earlier and later activity at Barrow Hills can be paralleled at the Chesham site. The presence of Peterborough Ware suggests activity on the site in the Middle Neolithic, as do the mid-third millennium radiocarbon dates. Later activity at Chesham is suggested by the possible Late Bronze Age and Iron Age pottery.

Four other ring ditches at Barrow Hills, Radley have internal diameters of between 8 and 12m. Two of these monuments have early dates of c.2500–2000 BC (Garwood 1998, 288) and two have later dates calibrating to between c. 1900 and 1600 BC (*ibid.*). The latter examples have ring ditch diameters of c.10m internally making them larger than the ring ditch at Chesham (Barclay and Halpin 1998, 48 and 135), although their dates are comparable. Ring ditch 801 was associated with a central cremation deposit (*ibid.* 48), whilst Ring ditch 201 was associated with a central Beaker inhumation (*ibid.* 135–136).

A small ring ditch with an external diameter of 9m has been excavated on the floodplain of the River Great Ouse, Bedford (Steadman 1999). This had a central inhumation and has been placed in the Late Neolithic through association with Grooved Ware ceramics (*ibid.* 15; La Niece and Slowikowski 1999, 19). A further example is a ring ditch excavated at Pampisford in Cambridgeshire, with a diameter of 9.5m on the gravel terrace of the River Granta (Pollard 2002). The radiocarbon date from animal bone in a lower fill of the ditch calibrates to between 1750 and 1520 BC (OxA-8067), being slightly later than the calibrated date from the ring ditch at Chesham (1900–1730BC, SUERC-9523). Deverel-Rimbury and post Deverel-Rimbury ceramics also appear to predominate at the Cambridgeshire site, suggesting a mid-Late Bronze Age date. Cremation deposits were recorded at this site, though the monument was not considered to have had a primarily funerary function (*ibid.* 18–19).

These parallels with small ring ditch sites in the south and south-east of England show a great variation in terms of date, with the early examples at Barrow Hills representing early and rich Beaker inhumations (Barclay and Halpin 1998, 153–154) in the mid–third millennium BC. Later examples in use in the mid-late second millennium BC were associated with both inhumation and cremation rites. This demonstrates that small ring ditches can have a wide chronological range (Garwood 1998, 289).

No evidence for burial was recorded at Chesham. However, the fact that over half of the ring ditch had been truncated by later activity suggests that any burials associated with it may have been disturbed. It is worth noting, however, that none of the pits and near-complete vessels associated with the ring ditch at Chesham were associated with cremated bone nor was human bone recorded from the fills of any features on the site, including the ring ditch.

Iron Age and Romano-British sherds from the site relate to later settlement in the vicinity. It is perhaps noteworthy that Iron Age and Romano-British pottery has also been recorded from Stratford's Yard (Cauvain and Cauvain 1989, 71). Nevertheless, this area appears to have been on the periphery of activity in this period in Chesham (Stainton 1989, 72).

The palaeoenvironmental record from the site suggests that the products of arable agriculture were being consumed at Chessvale, represented by charred grains of barley and wheat, with wheat appearing to predominate. It has been suggested that the greater frequency of charred plant remains in pits on the site (including barley and wheat from F400, 4004, also containing the Food Vessel Urn) may indicate the intentional deposition of organic material. This is in contrast with the less frequent, and perhaps naturally derived, plant remains from the ring ditch (Fryer, above). It is worth noting, however, that wheat grains have also been recorded from both lower and upper fills of the ring ditch. Wild resources appear to be represented by several hazel nutshells from a number of prehistoric features, and carbon dates from two samples suggest these belong to the Late Neolithic. Pollen analysis from a prehistoric pit on the edge of the ring ditch (F438) shows " a typical range of an occupied landscape" (Grieg, above). This may be significant if the early radiocarbon date from this pit (SUERC-9149) is accepted as being contemporary with the feature.

The few animal bones from the site include a pig tooth from the primary fill of F438 (4050) together with contemporary flintwork. Red Deer has also been recorded in a pit associated with Beaker sherds (F101, 1009), a further pig tooth from the upper fill of a pit (F102, 1008) containing a Middle Bronze Age vessel. A cattle radius

was also recorded from one of a group of inter-cutting pits on the south-east side of the ring ditch (F425, 4031). Butchery was recorded on a bone fragment from another pit in this group (F402, 4006) in association with Late Bronze Age or Iron Age pottery.

The wood charcoal identifications show a comparable range of species between the ring ditch and the pits on the site, namely hazel, hawthorn and oak. No special selection of species for burning could be recognised from the small assemblage and the charcoal is therefore considered to derive from domestic food preparation at hearths. There is no specific evidence for hearths or settlement structures, but ritual activity at the ring ditch may well be associated with intermittent and episodic modes of settlement in the Early Bronze Age (Brück 1999).

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Appendix 1

Bronze Age Pottery Petrography by Rob Ixer

Two transmitted light, thin sections were made from two sherds. Each sherd was cut and the colour and texture of the sherd and its cut surface were described using a hand lens and the Geological Society of America rock-color chart. Each thin section was described using a x10 hand lens and then under the transmitted light petrological microscope using x6 and x12 air lenses. All translucent phases were identified using their optical properties.

CB6 03 F102 (1013) Middle Bronze Age Urn

This is a grog-bone tempered pot.

Sherd

The outer surface is 0.5mm thick and has fired to a light brown (5YR 5/6 on the G.S.A. rock-color chart) whereas the main body of the pot is a dark grey (N3) and 6mm thick. Rounded rock clasts up to 2mm and larger, up to 3mm diameter grog clasts are present in the clay as are rare 5mm long ?flint slivers. The cut surface is dark grey (N3) and carries sparse, <0.5mm diameter, white clasts. A little, white carbonate adheres to the surface of the sherd.

Thin section

The pot has fired to a 1mm wide, light brown (5YR 5/6) outer rim above a 6mm thick black (N1) core. There is no strong fabric, void spaces are randomly distributed and the pot is sparsely tempered. One mm diameter, pale-coloured to orange-brown bone, 1 – 2mm diameter grog and 2mm long carbonate clasts are present.

Petrographically the pot has a dark clay with an absence of any very fine non-plastics but does carry rare, thin, white mica laths, polysynthetically twinned feldspar plus more abundant monocrystalline quartz grains and small calcite clasts both as sparite and as calcispheres. Larger clasts include monocrystalline quartz, polycrystalline metamorphic quartz, fine-grained chert (with and without carbonate dust), micritic limestone with calcispheres, and single crystal carbonate fossil fragments possibly from crinoids or echinoids. Fine-grained sandstone and vesicular rhyolite are rare.

The pot is moderately and evenly tempered with angular grog clasts showing a range of firing

colours and different fabric orientations. The grog clasts carry quartz, bone, calcite and a single green tourmaline as small inclusions and are not very different from the enclosing main clay. Small bone temper varies in colour from colourless through yellow to dark orange-brown and appears to be slightly unevenly distributed.

Locally the edge of the sherd is covered in post-depositional, fine-grained calcite.

It is difficult to tell if the larger silicate grains are temper or part of the clay matrix but the grog and probably the bone are temper despite comprising fine-grained particles. As with other Beaker pottery the grog is not 'exotic' but has a similar fabric to the main vessel.

The inorganic components of the pot are consistent with a local or regional manufacture as both the clay and natural, inorganic non-plastics are associated with the chalk.

CBC 04 F400 (4004) Early Bronze Age Food Vessel

This is a ?poorly made, grog tempered pot.

Sherd

The sherd was very friable and has broken up into small crumbs and dust. Many crumbs are coated in a pale grey/white carbonate or pink clay. The cut surface comprises light brown (5YR 6/4 on the G.S.A. rock-color chart) to dark grey (N3) grog cemented by banded, pink clay. Very small, 1 – 2mm diameter, white, modern, snail shell fragments are present in the dust and may be part of the enclosing sediment/soil rather than belonging to the pot.

Thin section.

The material was very difficult to prepare and hence the thin-section is very thin and poorly made. It comprises a breccia of 4 - 5mm diameter, angular pot fragments/grog ranging in colour from light brown (5YR 6/4) to dark yellowish brown (10YR 4/2) and cemented by banded clay; much of this clay has polished away. Locally a thin, <0.5mm, carbonate coating covers the sherd.

Petrographically a very, very clean clay has fired to a pale brown and carries traces of white mica and rare, single quartz and sparite grains plus calcispheres, metamorphic quartz rock clasts and fine chert. It mainly cements grog clasts.

These are subangular to equant and show a wide size range, up to 5mm in diameter, and different firing colours; some grog show colour changes within themselves. The grog is moderately densely 'tempered' with single quartz grains showing a restricted size range plus rare muscovite, microcline and perthite. Small rock clasts within the grog include polycrystalline, quartz-rich metamorphics, chert, sandstone with chert clasts and plagioclase-potassium feldspar intergrowths. Small dark-orange grog clast are also present forming so grog-in-grog.

The sherd is enclosed within a micrite coating (calcareous soil) that carries sparite, calcispheres, angular quartz and pottery fragments.

The pot is unusual in the size and amount of the grog temper that together have combined to make a very friable vessel. Despite the variation in colour of the grog their plastic to non-plastic ratio and the uniform nature of the non-plastics between the grogs suggests that only one pot has been used for grog.

The inorganic components of the pot are consistent with a local or regional manufacture as both the clay and natural, inorganic non-plastics are associated with the chalk.

It is difficult to believe that this was a serviceable vessel.

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