Archaeological investigations undertaken in connection with the construction of the A417 Brockworth Bypass, Gloucestershire, 1990-1994

By TOBY CATCHPOLE and ADRIAN M. CHADWICK

With contributions from Kurt Adams, Alistair Barclay, Anthea Boylston, Hilary Cool, Emma Durham, Claire Ingrem, Anne Leaver, Stuart MacKerrow, Fiona Roe, Ruth Shaffrey and Jane Timby

Abstract

The results of a series of archaeological evaluations, excavations and watching briefs undertaken during 1990-1994 in connection with the construction of the A417 Brockworth Bypass, Gloucestershire, are published here for the first time. The publication of this work complements the published results from earlier archaeological excavations undertaken at the Hucclecote villa, and also during the construction of the A417/A419 Gloucester-Swindon trunk route in the 1990s. The post-excavation work has been funded by the Highways Agency.

The construction of the new road was preceded by extensive evaluation and then several small archaeological excavations, which were concentrated in the vicinity of the Hucclecote villa. These investigated the locations of service pipe diversions and a new slip road to the M5 motorway. A watching brief was then maintained during topsoil stripping along the new road corridor, and this work was extended to include the recording of accidental damage to the nearby Badgeworth round barrow. The archaeological work resulted in the recording of complex enclosure systems around the Hucclecote villa and in the identification of a large barn-like structure and stone corn drier.

INTRODUCTION

Frank Graham Consulting Engineers (later WSP) commissioned Gloucestershire County Council Archaeology Service (GCCAS) to undertake several phases of archaeological work associated with the A417 Brockworth Bypass, constructed by the Highways Agency on behalf of the Department of Transport during 1993 and 1994. The proposed bypass route was known to have potential archaeological significance as it passed close to the Scheduled Monument of the Hucclecote Roman villa (SAM county no. 188). Indeed, groundwork associated with road construction passed within 10 metres of the scheduled area in the grounds of the Hucclecote Centre, the former Hucclecote Secondary School (OS Nat. Grid 387690 217552).

A desk-based assessment of the proposed road construction corridor compiled the available archaeological information, and suggested locations for trial trenches (Parry 1990). This was followed by the evaluation of five areas within the road corridor, though only two trenches within the grounds of the Hucclecote Centre produced significant archaeological results (Parry 1991a). Following the evaluation the Gloucestershire County Archaeologist recommended that full excavation should take place in advance of the construction of a sewer diversion trench (undertaken in May 1993), a new motorway slip road (September to November 1993) and a water main diversion trench (March 1994), all of these being located in the same former playing field as the Hucclecote villa. A watching brief was also undertaken during March to May 1994 during topsoil stripping along the new road corridor. A supplementary task involved the recording of damage to the Badgeworth round barrow (Glos HER 3797, Fig. 1), accidentally caused by contractors vehicles, and a subsequent contour survey and watching brief on the reinstatement of the profile of the mound in June 1994.

To date, these sites have only been written up as a series of brief interim statements (Parry 1991b, 1994a; Parry and Cook 1995) and this report summarises the results of the different stages of work. Post-excavation analysis has been funded by the Highways Agency to ensure that the results of the archaeological work are placed in the public domain.

Location, geology and topography

The proposed road scheme included a small area within the eastern Gloucester city limits, but most of it consisted of a broadly north-west to south-east orientated transect approximately 5.6 km in length and 200-250 m in width through the parishes of Hucclecote, Brockworth and Badgeworth (Fig. 1). A series of junctions and slip roads between the Brockworth Bypass and the M5 motorway at the western end of the corridor formed the focus for subsequent archaeological work (Fig. 2).

Before the construction of modern infrastructure the landscape of the core area discussed in this report, that around the Hucclecote villa, was defined by a gentle slope from the line of the Roman Ermin Street, now followed by Hucclecote Road, down to the Horsbere Brook which ran roughly parallel to the Roman road *c*. 600m to its north. Much of the bypass route is situated on Lower Lias clay, with some small areas of gravels forming part of the third terrace of the River Severn. Some higher ground at the western and eastern ends of the road corridor consists of landslip deposits derived from the oolitic limestone of the Cotswold Scarp (OS Geological Survey Sheet 234). The area around the A417/M5 junction is relatively flat and low-lying at *c*. 40 m OD, though it rises slightly to the north-west towards Churchdown Hill. To the south-east, the land progressively rises to around 150 m OD at Crickley Hill.

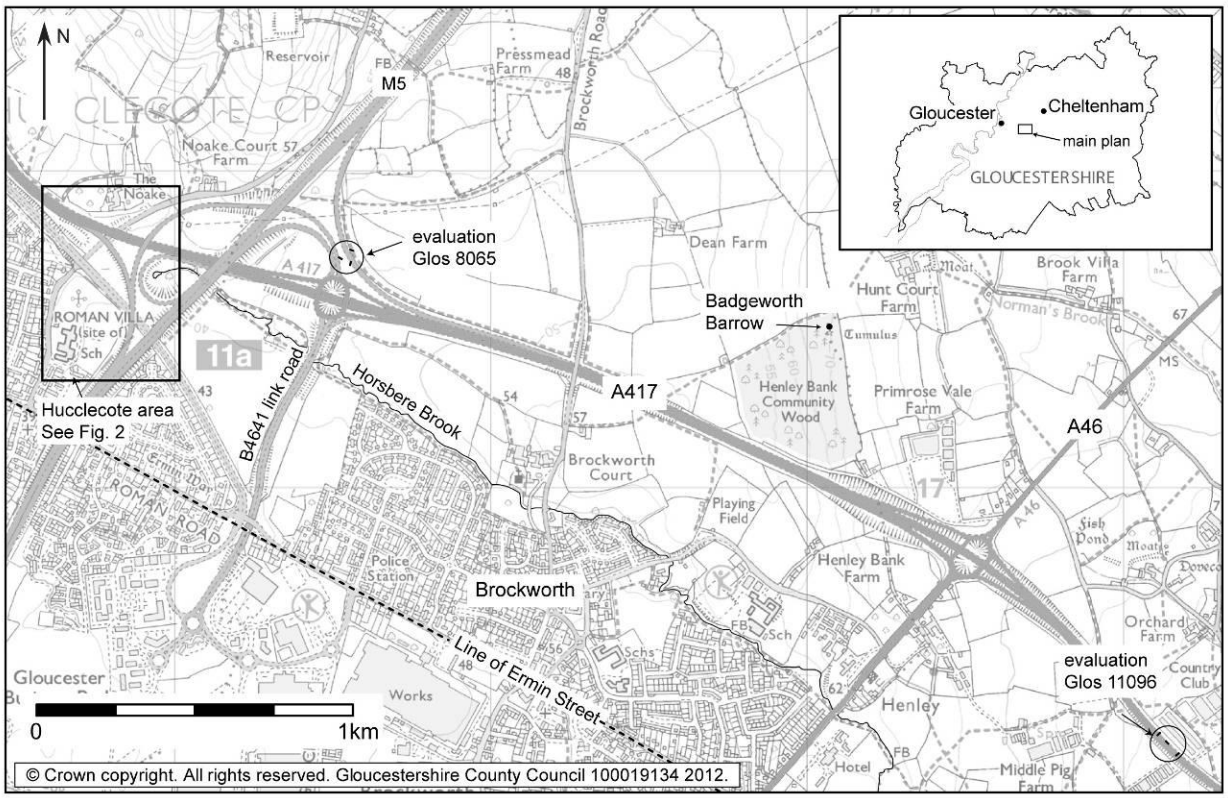

Fig. 1: Location of the A417 Brockworth bypass (as built) and outlying archaeological investigations

Preservation and phasing

The clay subsoil made it difficult to distinguish earlier archaeological ditches and gullies from later furrows, especially where no finds were present. The archaeological cut features encountered during the investigations were often difficult to identify, excavate and record. Evidence for many episodes of recutting and rearrangement of enclosure boundaries was also encountered. This presented obstacles to comparing results between narrow strip trenches but even when a larger open area was exposed during the 1993 M5 Slip Road excavation, the relationships between intercutting features such as ditches were hard to determine. Truncation from medieval or post-medieval ridge and furrow, and post-medieval or early modern land drains, was also present but not usually a serious problem.

ARCHAEOLOGICAL BACKGROUND

The Hucclecote villa was partly excavated during the autumn and winter of 1910-1911, under the auspices of the Bristol and Gloucestershire Archaeological Society and the direction of Canon William Bazeley (Hurry 1911, 13). Three groups of stone-walled rooms connected by a corridor were found, together with the remains of tessellated floors and hypocaust systems. Late 4th-century coins and inscribed ceramic tiles were also recovered. Only brief accounts were published, in the annual report of the Society for 1911 (*ibid.*), and in a letter by Bazeley to *The Times* newspaper on February 22nd 1911.

The villa was investigated again in 1933 (Clifford 1933; 1935, 249-255; Collingwood and Taylor 1934, 212-214), and this allowed a complete plan of the main villa building to be

drawn up, along with a proposed developmental history. Bronze Age occupation remains were also found beneath the Roman features. The site was designated as a Scheduled Ancient Monument in 1948. To the south of the Scheduled area, further excavation in 1958 prior to the construction of a school (now the Hucclecote Centre) revealed some early Roman occupation evidence (Clifford 1961). The villa was occupied during the 2nd-5th centuries AD, and was probably built upon an earlier settlement occupied during the 1st century AD. These early investigations focused on the principal villa buildings, rather than any associated estate or service buildings.

The closure of Hucclecote School in the late 1980s, the transformation of its buildings into an educational resource centre and housing development, prompted archaeological evaluation work during 1988-1989, undertaken by Gloucester City Excavation Unit (GCEU) on behalf of the landowners, Gloucestershire County Council. The exact position of the villa buildings was unclear, as accurate surveys had not been made during earlier investigations. Two geophysical surveys were therefore conducted to the north and east of the school (Shiel and Linford 1988), and to the south (Gater *et al*. 1988), with largely negative results due to unfavourable ground conditions.

Fourteen trenches were then excavated, the majority south of the Hucclecote Centre (Atkin 1989a, figs 1-2, 1989b, 1990, 9, fig. 3; Atkin and Garrod 1989, 233, 1990, 188). Trench 8, to the south of the school, revealed a north-east to south-west orientated metalled road surface with flanking ditches, perhaps linking the villa with Ermin Street to the south (Atkin 1990, 9, pl. 6). A layer of soil that had built up over the road had been cut by a hearth and an undated inhumation burial. There was also a sequence of boundary ditches *c*. 30 m north-east of the villa building, along with several clay-lined hearths or ovens, revealed in trench 12, which ran south from the west end of the sewer trench reported below. Finds included painted wall plaster, some tesserae, shale bracelet fragments, a possible jet ring and metal decorative items and fittings. Possible hard surfaces were also noted across the area surrounding the villa. It was concluded that overall there was no evidence for intensive occupation, and that the area occupied by the villa complex was limited and operated a predominantly pastoral economy within an open landscape (Atkin 1989a, 5; Atkin and Garrod 1989, 241, 1990, 188).

There was nevertheless a significant possibility that road construction work near the Hucclecote villa site would impact on associated outlying features. The route of the bypass also passed through a wider archaeological landscape indicated by numerous entries on the Gloucestershire County Historic Environment Record (HER) for prehistoric to post-medieval archaeology, though the locale is particularly rich in records for the Romano-British period. Ermin Street, the Roman road from *Glevum* (Gloucester) to *Corinium* (Cirencester), runs parallel to the line of the modern A417, *c*. 350 m south of the excavated areas (Fig. 1).

Earlier investigations in the vicinity had discovered the remains of another Romano-British cemetery at Barnwood (Clifford 1930; Garrod 1988; St Clair Baddeley 1920), a small farmstead at Brockworth, excavated in advance of housing construction (Rawes 1981), and Romano-British ditches at Wells' Bridge, Barnwood (Rawes 1977).

Approximately 1 km to the south-east of Hucclecote villa, excavations during the construction of the B4641 Gloucester Business Park link road in 1998 revealed remains of prehistoric and Romano-British settlement, in addition to a small Romano-British inhumation cemetery (Thomas *et al*. 2003). The landscape to the north of Brockworth has since been further explored by large archaeological evaluations, located either side of the link road (Thomas 2000) and over the entire area eastwards from the link road to the A46 (Barber and

Havard 2011). Both these evaluations indicated the presence of significant densities of archaeological deposits of prehistoric and Romano-British date.

A further Romanised farmstead has been identified 1.20 km to the SSW of the Hucclecote villa. At the Gloucester Business Park, geophysical survey and trial trenching revealed a complex including structural remains such as beam slots and postholes together with ditches and pits (ArchaeoPhysica 2001; Jones 2001). Some of the structures may have been built at least partly of stone. Further excavation nearby recorded more ditches, a probable Roman-period inhumation burial and ceramic box flue tiles as well as stone and ceramic roof tiles (Hickling 2007a, 2007b; Glos 28394). Romano-British households of some status might also be indicated by the poorly preserved remains of a late 3rd or 4th century bath-block found approximately 1.1 km to the south-west of the Hucclecote villa in 1957, and a stone coffin burial found close to this in 1958 (Hunter 1960, Glos 6733). The villa at Great Witcombe is situated only 2.5 km to the south of the Hucclecote villa (Clifford 1954; Leach 1998).

ARCHAEOLOGICAL RESULTS

1990 evaluation (HER sites Glos 468, 5943, 8065, 11093 and 11096)

Five trenches were excavated within the grounds of the Hucclecote Centre (Glos 468, Fig. 2), whilst one trench targeted possible earthworks east of Millbrook Cottages, Hucclecote (Glos 5943, Fig. 2), and another a possible earthwork south of The Noakes, Hucclecote (Glos 11093, Fig. 2). Three trenches were dug north of the A417 to the south-east of Noake Court Farm, Brockworth to investigate possible cropmarks visible on aerial photographs (Glos 8065, Fig. 1), and another three trenches were to investigate further cropmarks east of Middle Pig Farm, Badgeworth (Glos 11096, Fig. 1). The trenches across possible earthwork and cropmark features produced largely negative results. The earthworks at Glos 5943 were found to be the product of natural alluvial deposition, whilst the cropmarks at Glos 8065 were caused by variations in the underlying drift geology. Although no dateable finds were recovered, investigation of the subrectangular, banked earthwork at Glos 11093 suggested that it was of relatively recent date. The cropmarks at Glos 11096 were ambiguous, but there was no evidence of significant archaeology.

The five trenches excavated near the Hucclecote Centre were numbered 15-19 to continue the sequence of trenches from the earlier GCEU evaluation in the area (Atkin 1989a). Only trenches 18 and 19 revealed significant archaeology (Fig. 2). Trench 18 contained a large Romano-British SW-NE enclosure ditch, at least 2.50 m in width and 0.90 m in depth. The evaluation recorded a few animal bone fragments and three sherds of 1st century AD pottery from the primary fill. Its secondary fill produced a pottery disc spindle whorl formed from a reused Romano-British ceramic vessel sherd. A second, smaller ditch ran parallel to the first, but *c*. 5 m further west. This feature was up to 1.45 m in width and 0.55 m in depth, and its two fills were noted as containing 2nd-4th century pottery.

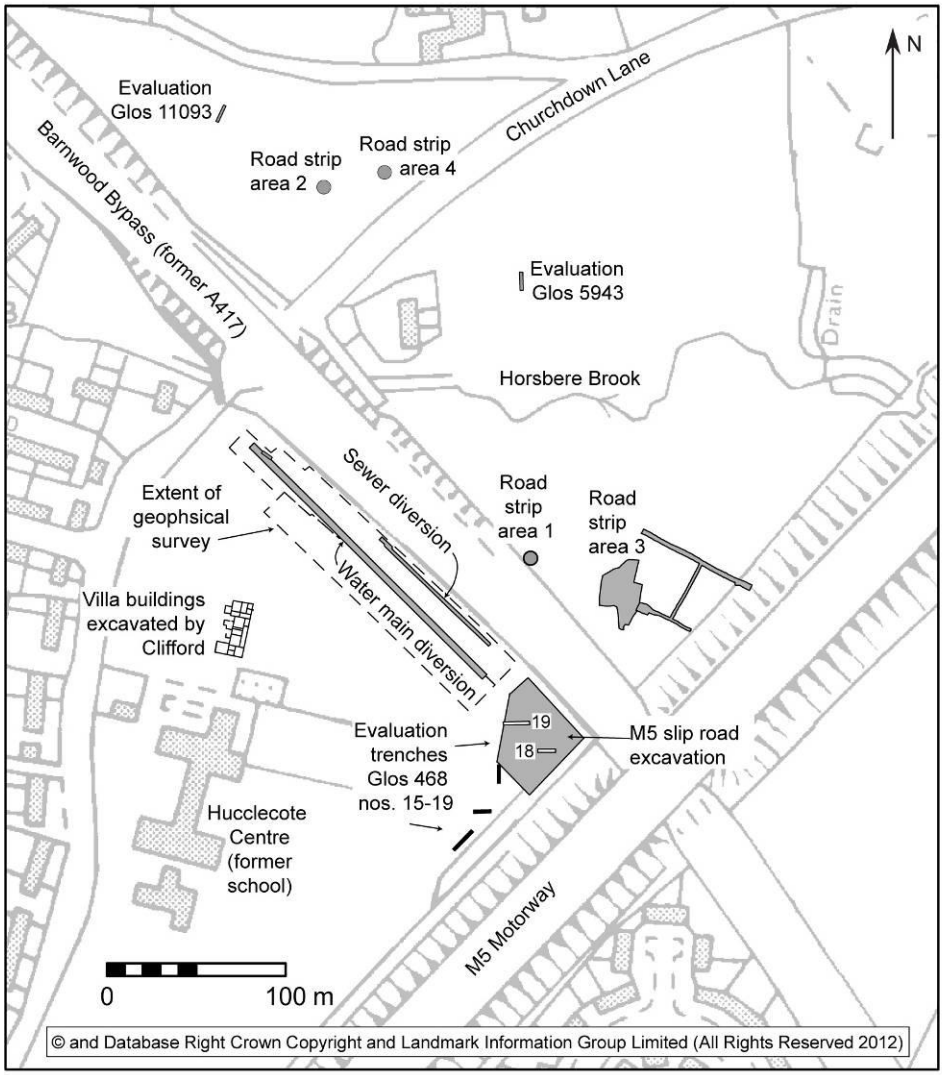

Fig. 2: Investigations 1990-1994 in the Hucclecote area. Base plan OS 1:10000 1990.

Trench 19 contained an extensive spread of pieces of oolitic limestone in two layers up to *c*. 0.25 m in depth. The layers also contained large quantities of Romano-British pottery and brick/tile fragments, and seem to have been deposited within a shallow depression or cut in to the underlying natural. Although the eastern edge of this feature was disturbed by early modern land drain cuts, it was thought to represent the disturbed remains of a metalled surface up to 5.00 m in width (Parry 1991a). It was interpreted as a yard surface, or possibly a trackway that may have originally connected with the metalled road surface some 250 m to the south-west, discovered in Trench 8 during the earlier evaluation (Atkin 1989, fig. 2). Subsequent excavation of a wider area suggests that the feature was more likely to be a furrow containing material disturbed by ploughing. No other significant archaeological features were identified.

1993 Sewer diversion (Site BS 93)

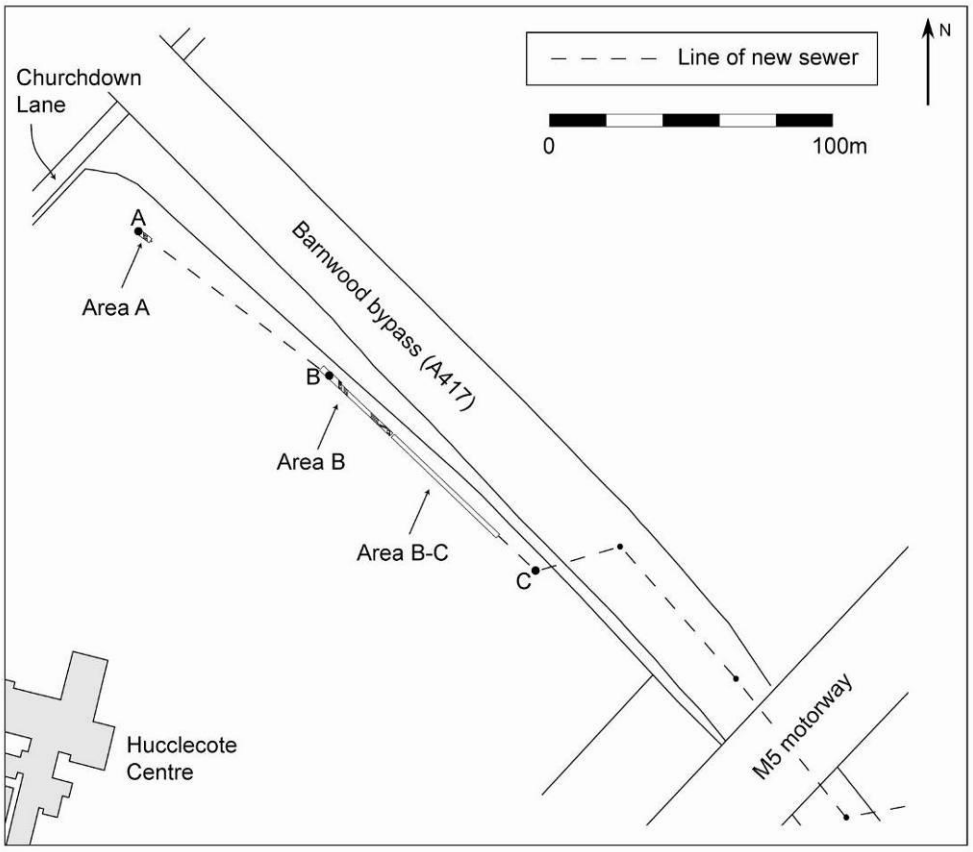

Fig. 3: Location of sewer diversion (BS93), showing areas recorded

The diversion of a sewer along the northern boundary of the grounds of the Hucclecote Centre was required in advance of road construction. Its new course was within a north-west to south-east aligned easement approximately 20 m in width and 200 m in length, parallel with and immediately adjacent to the then A417 Barnwood bypass (Figs. 2-3). The relatively few features recorded during earlier evaluations suggested that little significant archaeology would be affected by the ground works. Topsoil stripping in 1993 along the line of the sewer easement, however, revealed a large stone structure and several boundary ditches, and these features were excavated within the 1.5-2 m width of the pipe trench.

Archaeological features were recorded in three areas of the sewer diversion. Area A, located towards the north-western end of the easement, measured approximately 4.5 m in length and 2 m in width, and contained a Romano-British ditch (feature [5], Fig 4) on a broadly north-south alignment. The line of this ditch was traced for 22.6 m across the easement, and where excavated it was 1.5 m in width and up to 0.56 m in depth. Its fill (4=6) produced Romano-British pottery, tile or brick fragments, and animal bone. Although the fill of the ditch could only be broadly dated to the 2nd century AD or later, it may be one of the earlier features in this area (see Timby below). A medieval or post-medieval plough furrow (3) at a slightly different angle to the ditch cut across it. One of the fills of the furrow (2) produced a bronze *ligula*, probably originally derived from a Romano-British deposit (see Cool below).

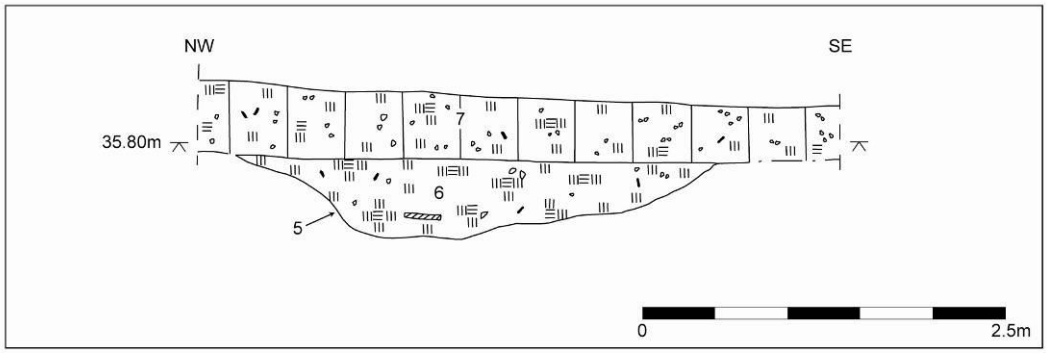

Fig. 4: Sewer diversion area A. West facing section across ditch 5

Area B extended approximately 33 m across the centre of the sewer diversion easement. The stratigraphically earliest features seem to have been a pair of broadly parallel, steep-sided rectilinear cuts *c*. 11 m apart, up to 2.5 m in width and 1.3 m in depth, aligned approximately north-south. Cut [15] was situated to the west, and cut [39] to the east. These largely flat-bottomed features contained building foundations, and as the form of construction within them was similar, this suggests that they were the contemporary west and east sides of a substantial structure. In the description that follows, context numbers for these two foundation features are given firstly for the westernmost footings, then the eastern examples.

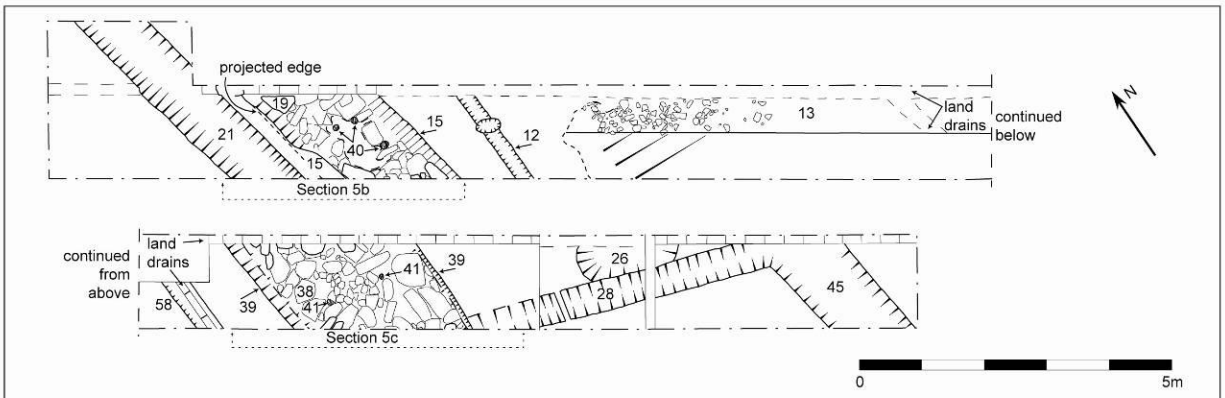

Figure 5a: Plan of Brockworth Sewer area B. Wall foundations exposed.

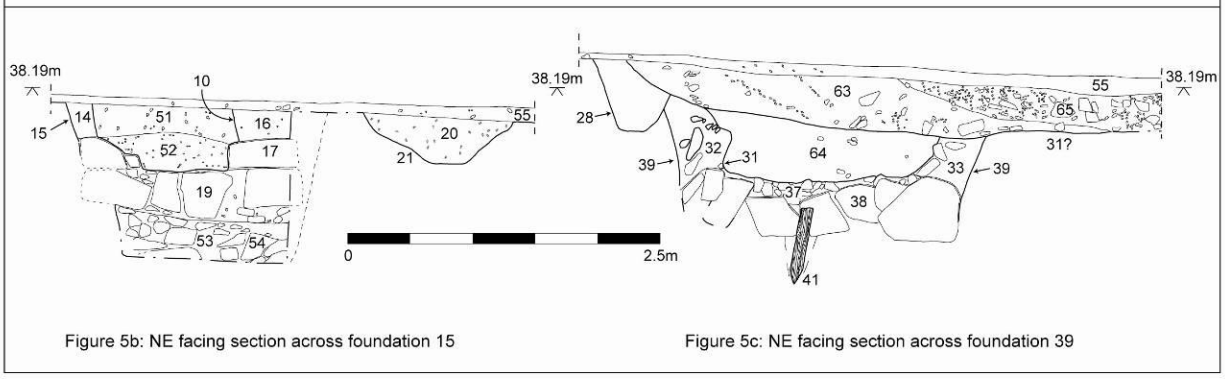

Figure 5b: NE facing section across foundation 15

Figure 5c: NE facing section across foundation 39

Fig. 5: Sewer diversion area B, plan and sections

At the base of the foundation trenches a series of timber piles (contexts 40 and 41), 90-110 mm in diameter, had been driven into the natural clay between large angular oolitic limestone boulders (54 and 38), the stones measuring up to 0.50 m across. The beech stakes, some set at angles of approximately 20-30 degrees, survived due to waterlogging and the

anaerobic conditions created by the clay and the overlying deposits (Fig. 5). The stakes were examined shortly after the excavation, but were unsuitable for dendrochronological dating as the beech sequence for western England was incomplete at that time (V. Straker pers. comm.). The large boulders were overlain by layers of smaller limestone fragments packed with clay (53 and 37), forming a level base for the upper foundations. These consisted of pitched slabs of oolitic limestone (19 and 36), levelled off with additional layers of small stone packing (18 and 35).

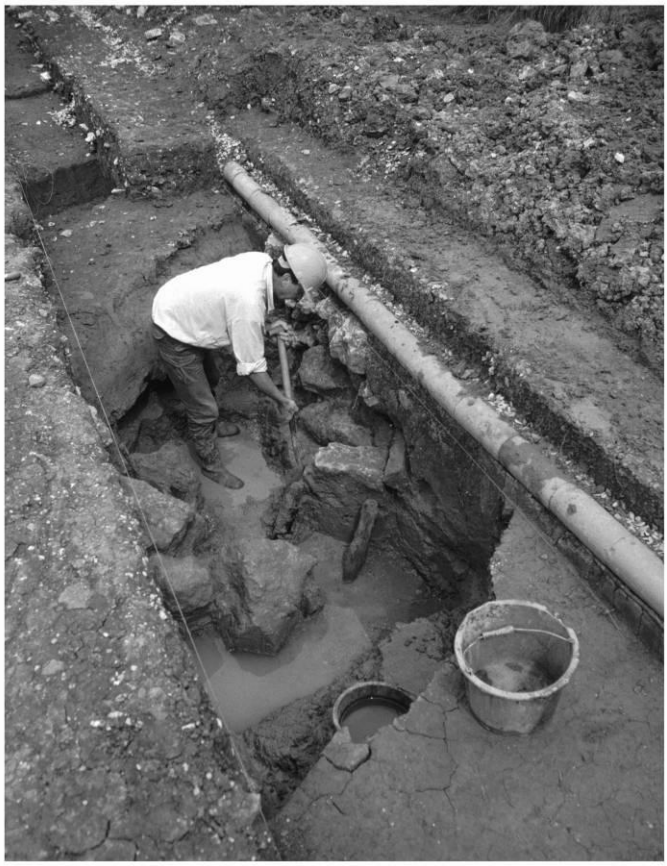

Fig. 6: Sewer diversion area B - Foundation trench 39 under excavation. Facing NW.

The bases of the walls themselves (contexts 17 and 34) survived only in some places, and to no more than one course in height. Structure (17) was 1.3 m in width where excavated, but the full width of structure (34) did not survive. The gaps in the foundation trench were backfilled using clay derived from the local subsoil, contexts (14) and (16) within the western foundation trench and contexts (32), (33) and (66) in the eastern cut. The fact that this backfill partly overlay (17) and (34) in some places suggests that the walls above ground may have been narrower and 'stepped in' from the surviving footings. Very little dateable material was recovered from the walls. The only constructional deposit containing pottery was context (38), the 'boulder' layer at the base of the base of the eastern wall cut [39]. This could only be broadly dated to the 3rd-4th century by a single sherd of Severn Valley ware. The one small fragment of modern brick found was probably intrusive, from the site stripping.

Fig. 7: Sewer diversion area B - remnant of wall 17 (right hand side) over rubble foundations (19). Facing S.

Both of the masonry walls above footings (17) and (34) had been largely removed by two rectilinear robber cuts – features [10] and [31] respectively. The fills of these two robber cuts contained animal bone fragments, pieces of ceramic tile or brick, stone tile fragments and some slag, but also Romano-British pottery. The fill (9, divided into 51 and 52 in section) of the western robber cut (10) contained two sherds only broadly dateable to the 2nd-4th century, but some of the 15 sherds in the fill (30) of the eastern robber cut [31] proved to be of mid-3rd century or later date. Only Romano-British finds were recovered from the robber trenches, but the same could be said of some of the fills of the medieval/post-medieval furrows above. Thus, although the robbing of the large structure may have taken place in the late Roman period, it is possible that it was later and that all of the finds were residual.

To the west of the western wall footings was a north-south orientated linear shallow ditch or gully [21], recorded on site as one of two 'flanking ditches' outside the walls. It was 0.85 m in width and 0.38 m in depth, with a gently concave profile. Its fill (20) contained ceramic tile or brick fragments, and it was noted as containing a high proportion of charcoal. The feature produced pottery of mid-3rd to 4th century date (Timby below). It is tempting to see the deposit as having partly derived from the use or immediate disuse of the building, but this cannot be confirmed. A further north-south aligned 'flanking' ditch or gully cut [45] was located approximately 4.5 m to the east of and parallel with wall foundation [39]. This was up to 1.3 m in width and 0.45 m in depth, with quite steep sides and a flat base. Of its three fills (44, 61 and 62) only deposit (61) produced pottery – one sherd, broadly dated to the late 2nd to 4th centuries AD.

A smaller ditch [28], orientated east-west, had ambiguous relationships with both the eastern foundations and ditch [45]. It was 0.45 m in width and up to 0.60 m in depth, with steep sides and a flat bottom. The eastern end of this feature was very difficult to define as its fill was indistinguishable from the surrounding deposits, but the context sheets note that it may have cut and thus post-dated the construction cut backfill (deposits 32=66). There was no definitive relationship recorded with the later robber cut [31] or with ditch [45] to the east, although a context sheet noted that the top of the lowermost fill of ditch [45] was 'approximately the level of the base of the related ditch [28], where this and ditch [45] conjoin'. Site plans depict the two ditches as contiguous, and photographs indicate that they were excavated together, so they

probably were broadly contemporary. Only four sherds were recovered from ditch [28], of 2nd century or later date, but this feature may have been contemporary with use of the building, perhaps serving as a drainage channel carrying water from the eastern side of the structure before emptying into ditch [45].

Ditch [28] was cut by a circular pit, feature [26]. Its two fills (24 and 25) contained animal bone, brick or tile fragments, several iron objects (probably degraded nails), stone tile fragments and one piece of *opus signinum*, but no pottery. Although it clearly truncated ditch [28] it therefore remains undated.

Later features in area B comprised a series of furrows (8, 13, 55, 56=65, 59 and 50=60) on a north-south alignment, similar to that of the underlying Romano-British features. Medieval and post-medieval sherds were recovered from them, in addition to residual/redeposited Roman material. These agricultural activities produced extensive stony spreads across this area, which were most dense in the north-western part of the easement, close to the ovens recorded in 1989 (above). Many of the stones in this area were also covered in a buff sandy mortar. It is probable that much of the stone originally formed part of Romano-British structures and/or surfaces. Some land drains orientated north-west to south-east were also noted, including one that cut across the top of the wall footings.

Area B-C comprised the south-eastern 51 m of the easement. The only feature of interest was a very shallow (0.10 m), irregularly shaped pit that contained some oolitic limestone fragments piled in its centre, some animal bone fragments, and three sherds of 3rd-4th century pottery. One north-south aligned linear feature 75 may have been a truncated ditch or gully, up to 0.90 m in width but only 0.05 m in depth, which contained five sherds of 3rd-4th century pottery. The shallow profile of this feature, however, has more in common with a series of parallel though broader medieval and post-medieval furrows (71-73), in which case the Roman pottery may well be residual. Some early modern land drains were also recorded.

The lack of close dating for the features uncovered during the sewer diversion work prevented any detailed phasing.

1993 M5 slip road excavation (Site HC 93)

An excavation *c*. 1350m² in extent, within the eastern corner of the Hucclecote Centre grounds was undertaken during September-November 1993 (Figs 2 and 8). This area was approximately 150m east of the main Hucclecote villa building, 30 m south-east of the sewer diversion easement and 20 m south-east of the water main diversion easement. Evaluation trenches 11 (GCEU 1989), 18 and 19 (GCC 1990) and a large 1990 geotechnical test pit fell within the area of this site (Fig 2).

The archaeological features were dug into natural clay subsoil and largely backfilled with similar clays, so they were indistinct and difficult to identify, and establishing the relationship between features was problematic. Numerous sondages and box-sections were used to try and elucidate the stratigraphic relationships, not always successfully. Romano-British deposits were disturbed by ridge and furrow, with some finds of much later date being intrusive in earlier features. In addition several site registers, including those for photographs were missing. Consequently, some of what is reported below represents a ‘best fit’ approach to the available archive and artefactual evidence.

Earlier Romano-British features

The stratigraphic evidence suggests that ditch [139] was one of the earliest features in the slip road area, at the southern edge of the site (Figs 8 and 9c). This ditch was at least 1.10 m in width and 0.45 m in depth, with steep, stepped sides and a gently concave base. It was probably on a north-east to south-west alignment, and its fill (138) did not yield any finds. Seven metres to the south-west was ditch cut [141] (Figs 9a and 9b). This was a minimum of 0.95 m in width and 0.35 m in depth, and had fairly steep sides and a concave base. It was oriented roughly ENE-WSW, and also did not produce any finds. It seems possible that cuts [139] and [141] were the same feature, turning towards the south-west, but unfortunately later truncation by ditches [50] and [142] (see below) prevented this relationship from being verified.

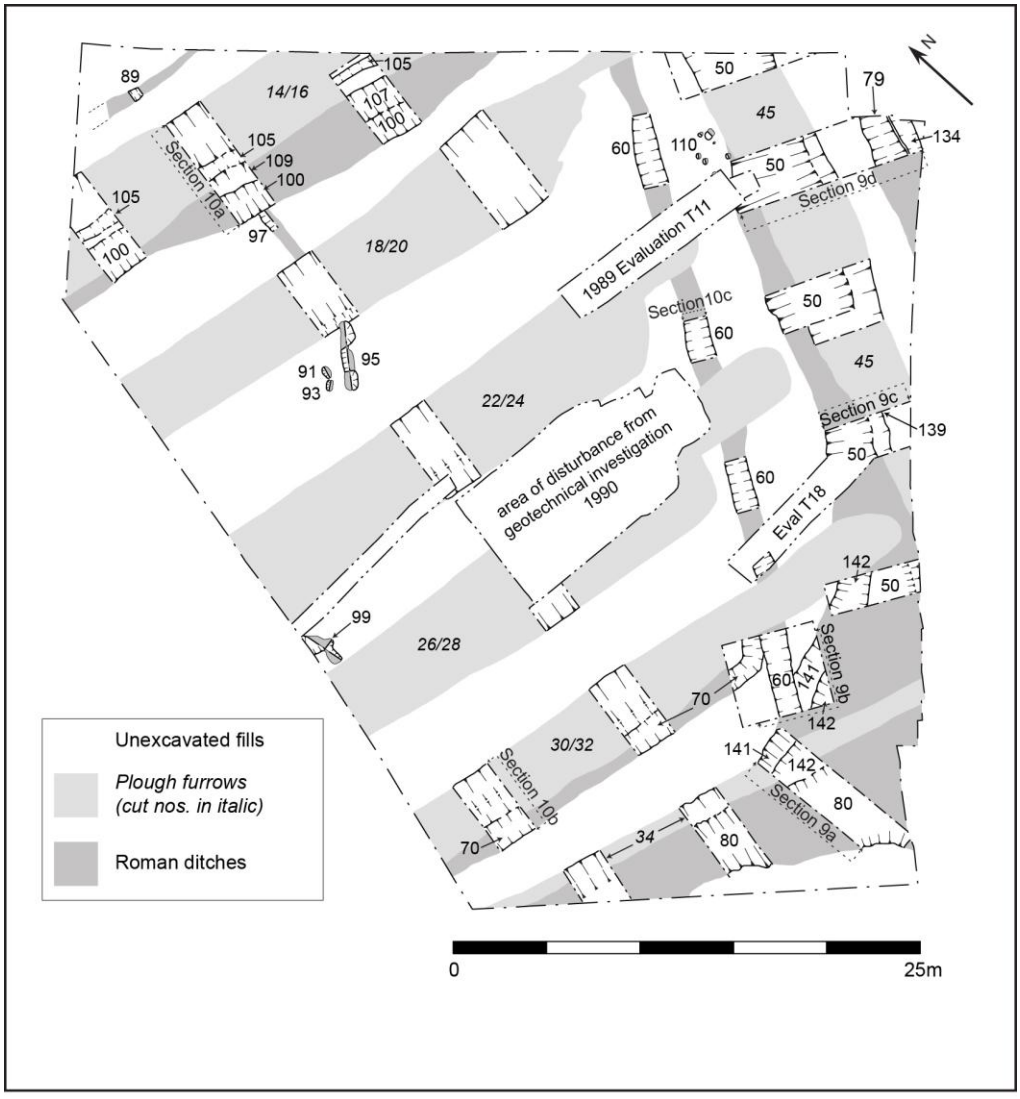

Fig. 8: Plan of M5 slip road excavation (HC93)

Approximately 12 m to the north-east of ditch [139] was ditch or gully cut [134] (Fig 9d), at least 0.75 m in width and 0.12 m in depth, with gently sloping sides and a slightly concave base. It too did not contain any finds. Cut [134] appeared to have been on a NNE-SSW alignment and, together with its rather different dimensions and profile this may mean it was a separate feature, but it is just possible that it could have turned south-westwards and linked up with [139] and [141].

On the basis of ceramic evidence, ditch [50] (Figs 9c and 9d) was one of the earliest dateable features in this area. It truncated earlier ditch [139]. It was orientated roughly north-east to south-west, and was recorded in five sections or 'cuttings' excavated across its line, whilst at least 27.50 m of its length was exposed in plan. Its width appears to have varied between 2.90-4.30 m and it was up to 0.70 m in depth, with quite steep, sometimes stepped sides and a flat or gently concave bottom. Its fills (53-58, 125-126 and 127=52) produced animal bone and ceramic tile or brick fragments, one half of a pair of iron shears (see Cool below) and at least 40 sherds of pottery indicating a provisional 2nd century AD date, but with possible later 3rd and 4th century material in upper fills.

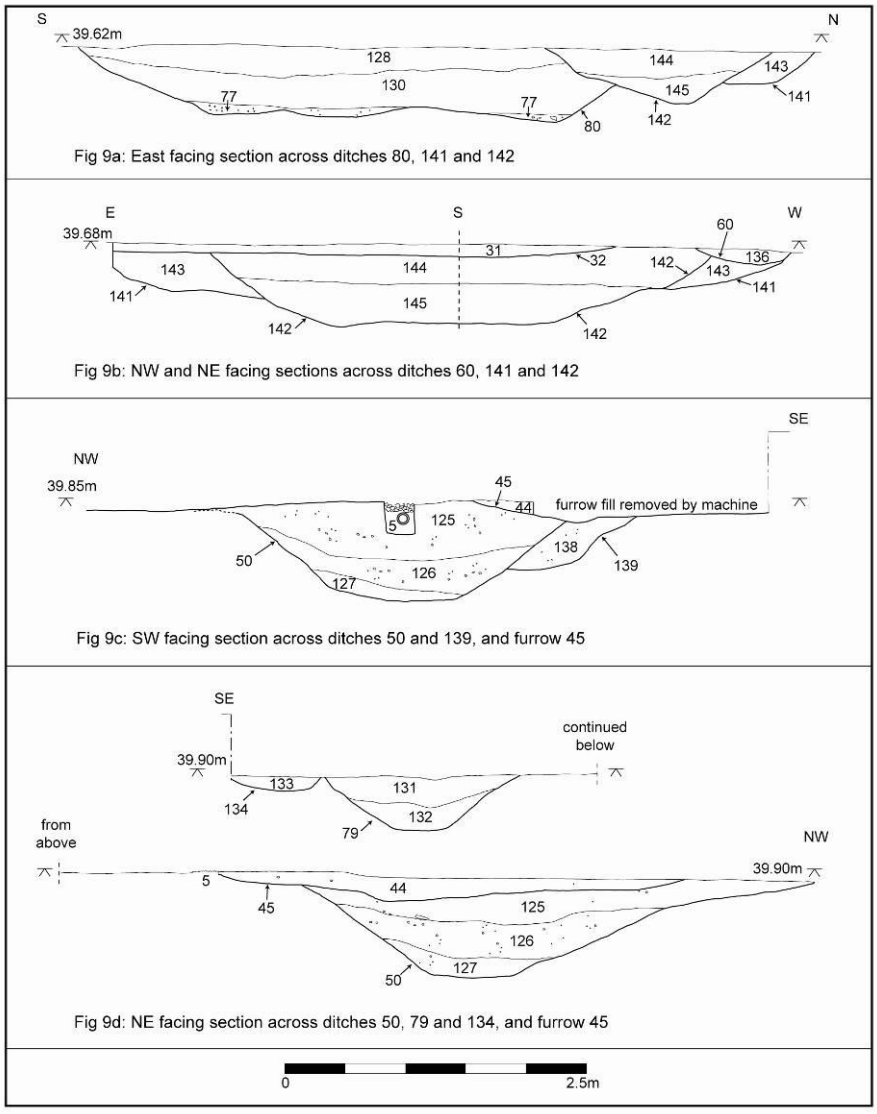

Fig. 9: M5 slip road. Sections

At the south-western corner of the site, ditch [50] appeared to be contiguous with ditch [80] (Fig 9a). This feature was up to 0.50 m in depth and between 2.80-4.40 m in width, aligned roughly WNW-ESE, and widening to the south-east. The fills of ditches [50] and [80] were contiguous and excavated together, and ditch [80] probably formed a junction with ditch [50]. It had quite gently sloping slopes and an uneven base with between two to three concave depressions in the base that strongly suggests it was recut on several occasions. Given its 'splayed' appearance in plan, and its possible curve round to the south-east, it may be that ditch [50] continued further to the south-west, with ditch [80] perpendicular and conjoined with it in

a ‘T-junction’. The fills of ditch [80] (77, 128-130) produced animal bone and ceramic brick or tile fragments, and 2nd-4th century AD pottery.

Ditches [50], [80] and [141] were all subsequently truncated by ditch [142] (Figs 9a and 9b), which varied between 1.90-2.90 m in width, and was up to 0.75 m in depth. Unfortunately, the fills of this later feature (144 and 145) did not produce any finds, and it was only recorded in three of the ‘cuttings’ in the southern corner of the M5 Slip Road site. In plan ditch [142] seemed to be orientated roughly north-east to south-west, but it was not recorded in the sections to the north and south-west where it would be expected. The multiple recutting of boundary ditches during the Iron Age and Romano-British period is a widely recorded practice (see Discussion below), and trying to link different phases of ditch cuts visible in section across an excavation can be notoriously difficult. The recut may also have originally been rather limited in extent, re-emphasising just the earlier ditch junction, or perhaps changing it from a ‘T-shaped’ junction between two ditches to the right-angled or L-shaped corner of a single ditch.

Ditch [70] (Fig 10b) was aligned WNW-ESE. It varied in width from 0.95-1.40 m, in depth from 0.12-0.23 m, and had very gently sloping sides and an irregular but largely slightly concave base. Up to 17 m of its length was exposed in the excavation area, but where it was planned turning to the north-east it either terminated shortly afterwards or was truncated by later features such as ditch [60] (see below). Near the south-western corner of the site, a complete Roman ceramic tile had been placed flat on the bottom of the ditch, and nearby was a large portion of a Black Burnished ware vessel, inverted onto its rim (see Timby below). It is not clear if the higher base of the vessel was originally present, or had been removed by later ploughing. It is possible that this group of artefacts may have represented a slightly more structured deposit of material (see Discussion below). The single fill (numbered separately in different cuttings as 65, 66 and 69) also produced animal bone and additional ceramic brick or tile fragments, a stone tile fragment, a piece of iron slag and further pottery, of 2nd-3rd century date.

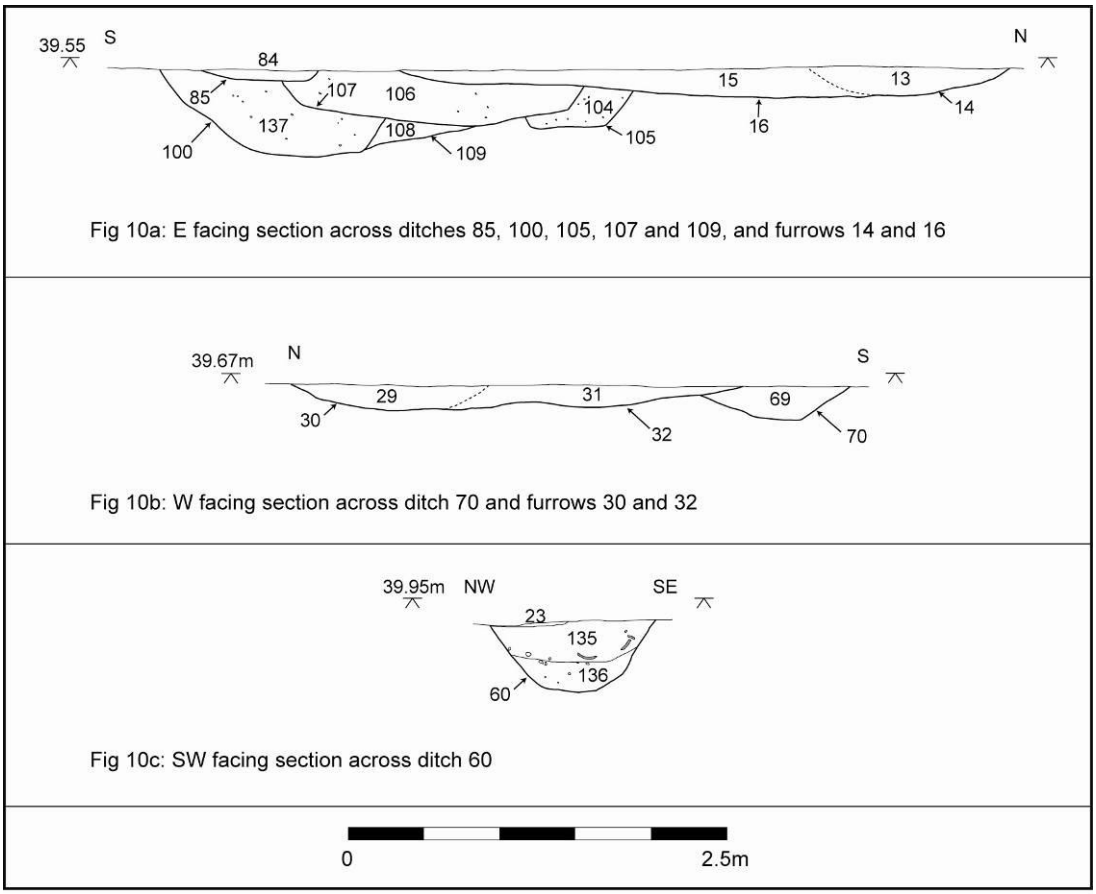

Fig. 10: M5 slip road. Further sections

Near the northern corner of the M5 Slip Road site, ditch or gully cut [105] (Fig 10a) was potentially of the same broad date as ditch [70]. It was up to 0.75 m in width and 0.12 m in depth, and approximately 16 m was exposed in plan, orientated WNW-ESE. Its single fill (101=103=104) produced fragments of animal bone and ceramic tile or brick, an iron object, and pottery of 3rd or early 4th century date.

Another feature that may belong to roughly the same phase was [95] (Fig 8), an irregular but broadly linear cut orientated north-east to south-west and up to 3.30 m in length that consisted of three interlinked or intercutting sections – two broadly subrectangular and flat bottomed cuts up to 0.11 m in depth, and an irregular, gently concave feature up to 0.12 m in depth. It was not possible to distinguish any stratigraphic relationship between them, and they were given a single fill number (94). This contained animal bone and ceramic tile or brick fragments, and five sherds of Romano-British pottery, including two sherds of mid to late 3rd century mortarium (see Timby below). Two shallow postholes nearby, [91] and [93], were up to 0.60 m in length, 0.30 m in width and 0.07 m in depth, but apart from some animal bone and ceramic tile fragments, and a piece of worked flint, only one sherd of 2nd to 4th century pottery was recovered from the fill (90) of posthole [91]. Although not necessarily linked to [95], it is possible that all of these features represented the truncated bases of one or more upright timber structures, perhaps a stand or rack.

Fig. 11: The eastern part of the M5 Slip Road excavation. Ditch 50 runs across the centre of the photograph. Facing SW.

Later Romano-British features

One of the later Romano-British features on the M5 Slip Road site seems to have been ditch [60] (Figs 9b and 10c), orientated roughly north-east to south-west. Approximately 32 m of its length was exposed in plan, and it was up to 1.30 m in width and 0.45 m in depth, becoming narrower and shallower towards the south-west. It truncated earlier features such as ditches [70] and [142], but was not recorded in the cutting in the southern corner of the site. Either it had become shallow so that it was totally truncated by later ploughing, or it ended in a shallow terminal at this point. The context sheet suggested that ditch [60] may have turned westwards to link up with ditch [34], but the nature and place in the sequence of [34] remained unclear. The fills of ditch [60] (61-64, 135-136) were relatively rich in finds, and contained large quantities of animal bone, including partly articulated dog remains. There were also ceramic tile or brick and stone tile fragments, numerous iron objects including many hobnails and a riveted mount, and a carved ivory hair pin (see Cool below). Ditch [60] also produced 362 sherds of pottery, of later 3rd-4th century date.

A group of features that probably also dated to the late Roman period was located near the northern corner of the site. Several early modern land drains cut across this part of the site, further disturbing the already rather indistinguishable deposits. Ditch [109] (Fig 10a) was on the same general WNW-ESE alignment as ditch [105] and was at least 0.70 m in depth, but its full width and depth were not ascertained as it was largely truncated by later ditches [100] and [107] on the same orientation. Ditch [100] was up to 1.55 m in width and 0.50 m in depth, with fairly steep sides and a flat or gently concave bottom. At least 17 m of this feature was recorded in plan on site. It was in turn cut by ditch [107], up to 1.95 m in width and 0.35 m in depth, with moderately steep sides and a flattish base. The fills of these three features were not distinguished during excavation, the fill numbers (82), (83) and (87) relating to finds from individual sondages. Context numbers (108), (137) and (106) were attributed to the fills of ditches [109], [100] and [107] respectively in section. Animal bone and ceramic tile or brick fragments, stone tile fragments and slag were recovered from these fills, in addition to pottery sherds of a mixture of dates but including late 3rd and 4th century material (see Timby below).

It is likely that these ditches represented repeated recuts of the same WNW-ESE aligned boundary. The final feature in the sequence was a shallow ditch [85] (Fig 10a), on the same orientation. Its fill (84) contained bone and ceramic tile or brick fragments, possibly residual or redeposited sherds of 2nd to 3rd century pottery, and one possibly intrusive post-medieval sherd. North of this group of features and once again broadly parallel to them was cut [89] (Fig 8), a shallow ditch or gully up to 0.45 m in width and 0.07 m in depth. Around *c*. 5 m of its length was exposed on site. Its fill 88 contained just one sherd of 2nd-4th century pottery.

Feature [97] was a narrow gully or slot perpendicular to ditch [100], although it was not clear if [97] was truncated by [100], or if it was later and had drained into it. To the south its course had been truncated by later plough furrows. It was at least 2.80 m in length, 0.50 m in width and up to 0.16 m in depth, with gently sloping sides and a very gently concave base. Its fill (96) contained a few fragments of animal bone and ceramic tile, and four sherds of not closely dateable Romano-British pottery. The function of this feature could not be determined.

At the south-western edge of the M5 Slip Road site was feature [99] (Fig. 8), irregular in plan and only 0.10 m in depth. Its fill (98) contained animal bone and ceramic brick or tile fragments, stone tile fragments, the neck of a Roman glass flask, an iron object, and 33 sherds of late 3rd or 4th century pottery. This cut may have been a series of shallow, interconnected and/or truncated pits or 'scoops'.

Medieval/post-medieval features

Much of the M5 Slip Road site was transected by a series of broad, shallow cuts up to 2 m in width and 0.20 m in depth (cuts 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, and probably 34). These were between 3-5 m apart, and some overlapped with and intercut others. They were all orientated roughly east-west and in addition to Roman ceramic material some also contained medieval and post-medieval pottery. It is thus highly likely that they represent the bottom of two or more phases of plough furrows. The Romano-British finds were therefore residual, but included part of a copper alloy finger ring from furrow fill (31) (see Cool below). A notable feature of these furrows was that many appeared to stop short of a north-east to south-west line represented by feature [45], which truncated earlier Romano-British ditches such as cut [50]. The gap between the east-west features and the north-east to south-west furrow [45] varied between 0.50-2.00 m, perhaps indicating the presence of a bank, hedge or fence on the north-western side of [45] that formed a headland. The close similarity in location and alignment between the Romano-British and medieval features suggests that some of the Romano-British boundaries persisted in the landscape as earthworks and/or hedges, to be reutilised in later periods.

Undated/unphased features

Ditch [79] (Fig 9d) was located in the eastern corner of the M5 Slip Road site, and was aligned north-east to south-west, parallel to cuts [50] and [134] although no stratigraphic relationship was apparent with other features. Only *c*. 2.5 m of its length was revealed in just one cutting, and it was up to 1.60 m in width and 0.43 m in depth, with quite steep sides and a flat base. No dateable artefactual material was recovered from it, but it did contain the articulated bones of a horse forelimb, which may have been a structured or placed deposit (but see Ingrem below, and Discussion).

Towards the eastern corner of the site there was also a group [110] (Fig. 12) of seven pits and postholes (cuts 112, 114, 116, 118, 120, 122 and 124), the largest of which [120] was 0.50 m in length, 0.40 m in width and 0.08 m in depth, although some features such as [114] and [124] were up to 0.12 m in depth. The posts appear to define a rectangular structure measuring 1.8x1.5m, aligned N-S. It is possible that further posts to the south had been truncated. None of the post hole fills produced any finds. One [124] cut the backfill of early Roman ditch [50].

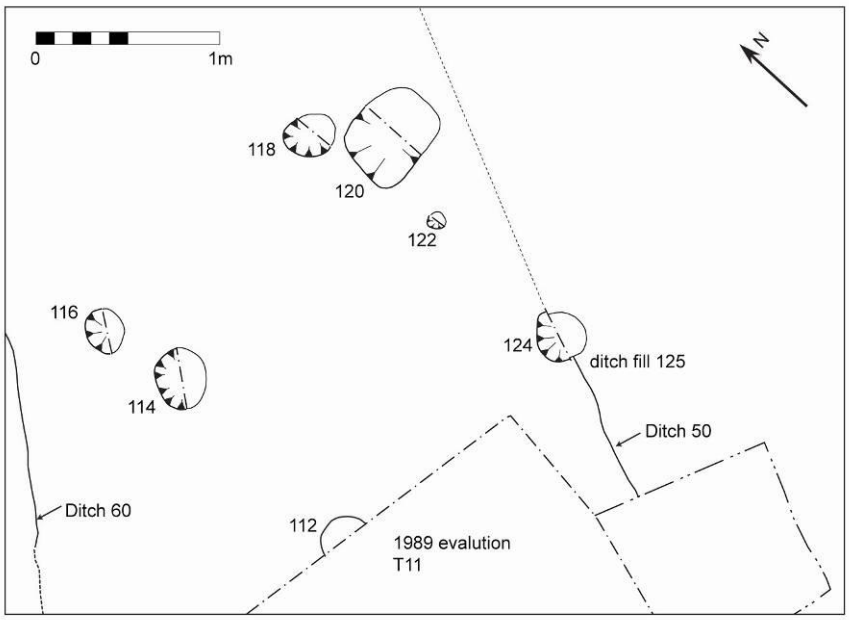

Fig. 12: M5 slip road. Detail of post group 110

Water main diversion (Site BWM 94)

Following the completion of sewer pipe construction work, an assessment of the archaeological implications of the construction of a water main diversion was undertaken, commencing with a geophysical survey of the proposed route (GSB 1993; fig. 4). The narrow width (20 m) of the north-west to south-east aligned survey area limited interpretation of the results, but the series of linear anomalies detected through the gradiometer survey were thought to relate to field drains, ridge and furrow and ditch features, although distinguishing between these was not possible. The features seemed to be orientated primarily north-south and east-west.

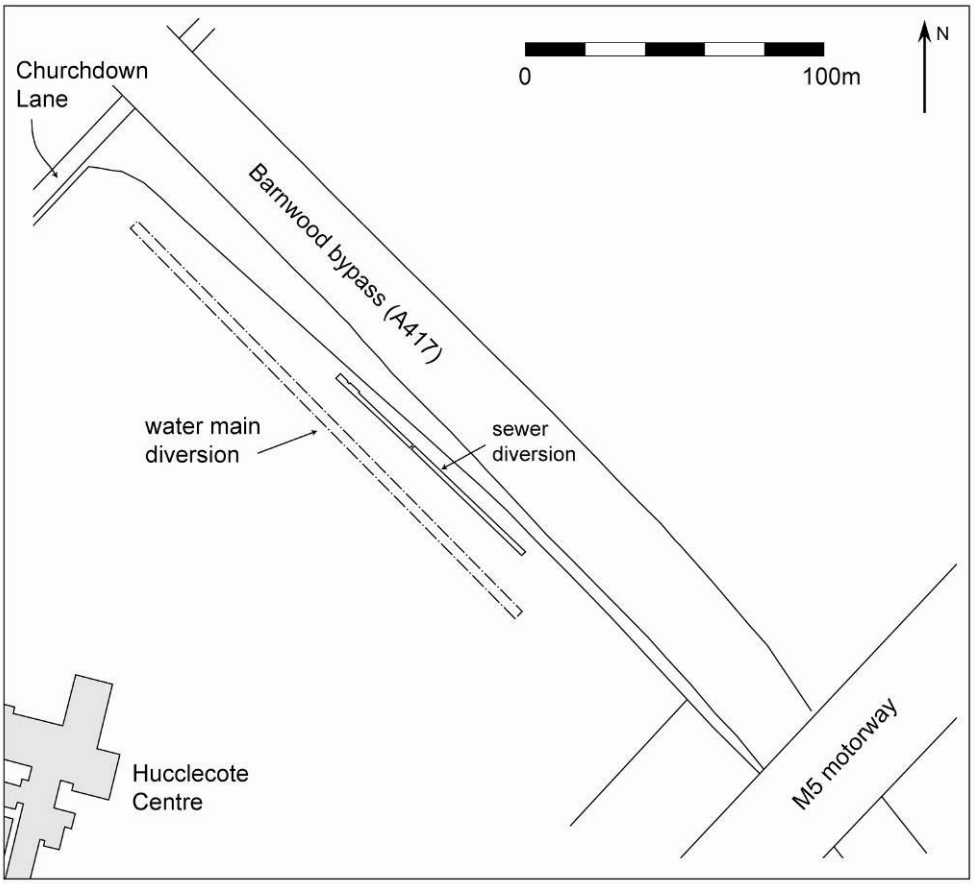

Fig. 13: Location of water main diversion trench (BWM 94)

The subsequent excavation in advance of the pipe trench took place within an easement approximately 180 m in length and 3.80-4.00 m in width, aligned north-west to south-east. Features recorded are described below beginning from the north-western end of the trench. Approximately 14 m from the end of the trench was ditch cut [54] (Fig 14b), up to 1.30 m in width and 0.50 m in depth, orientated north-south, with *c*. 6 m of its length revealed. Its western edge was relatively gentle, but its eastern side was steeper and stepped in profile. Its single fill (53) contained animal bone and ceramic tile or brick fragments, stone tile fragments, one glass fragment, a piece of worked flint and 81 sherds of Romano-British pottery, probably of 4th century date (see Timby below). This feature was on the same alignment as ditch [5] in area A of the Sewer Diversion site (see above), and these two features may thus represent the same boundary, despite the apparent disparities in the dates of the pottery assemblages in their backfills.

Approximately 50m from the end of the trench was ditch [52]. The full extent of this feature was not discernible or recorded in plan, but it appeared to have been either a 'right-angled' corner or junction between two ditches, turning from an approximate north-south alignment through to east-west. The cut was 3.10 m in width and up to 0.50 m in depth, with gently sloping sides and a flat base. Its two fills (36) and (51) produced large quantities of ceramic brick or tile fragments, stone tile fragments, an iron object (probably a nail), one fragment of *opus signinum*, and 115 sherds of Romano-British pottery, some of late 4th century date.

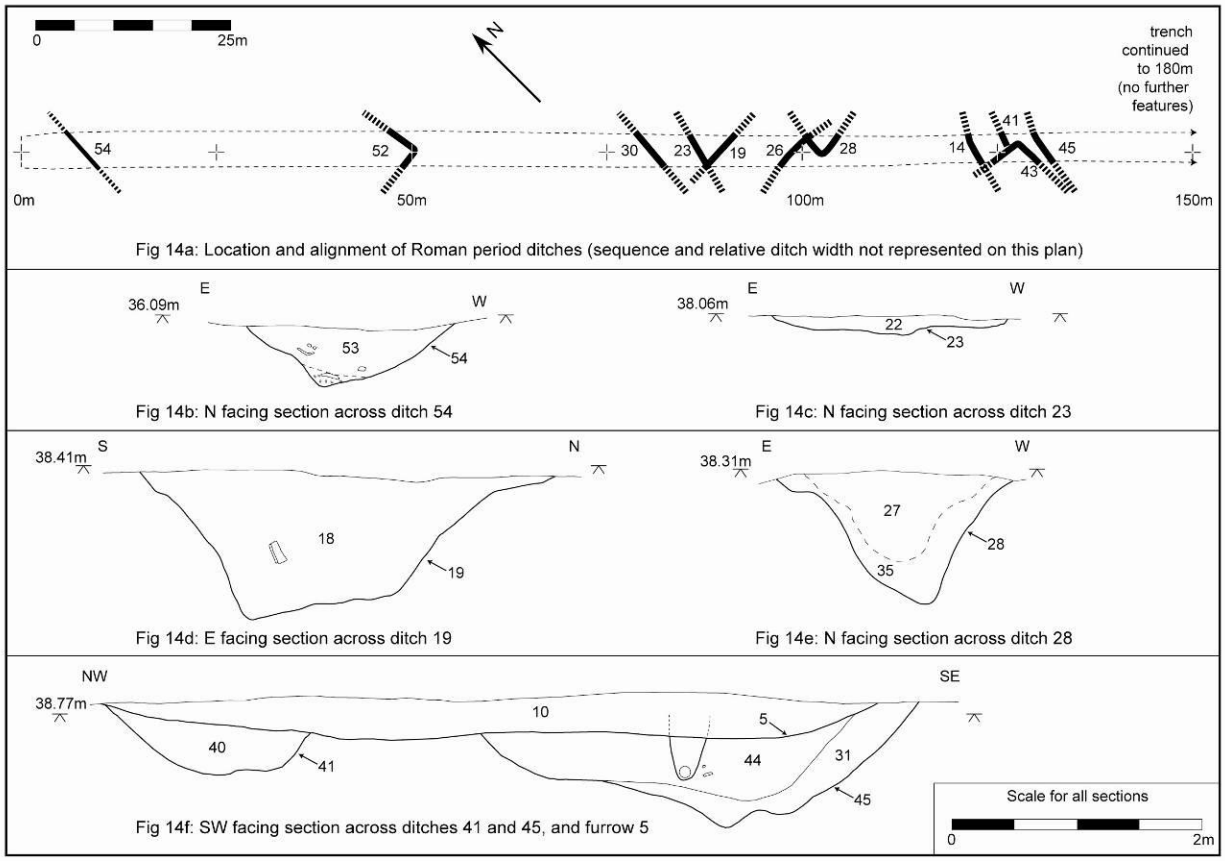

Fig. 14: Water main diversion. Location, alignment and sections of Roman ditches

Roughly 31 m further to the south-east was a series of ditches on different alignments, and probably of several phases. Ditch [30], at the 80m point in the trench, was a substantial feature up to 3.20 m in width and 0.70 m in depth, on an approximately north-south orientation. Its edges were difficult to distinguish from the natural clay subsoil, but it appeared to have quite steep sides and an irregular but concave base. Its two fills (48=39) and (29) contained large oolitic limestone and red sandstone fragments, in addition to a few animal bone fragments, large quantities of ceramic tile or brick, pieces of stone tile, lead and iron objects, and 42 sherds of 2nd to 4th century Romano-British pottery including some very late material.

Three metres to the south-east were two intersecting ditches. Cut [23] (Fig 14c) was a shallow linear feature on a roughly NNE-SSW alignment and up to 0.95 m in width, but only 0.08 m in depth. Its fill (22) contained some animal bone and ceramic tile or brick fragments, and three iron objects, but no pottery. It was cut by ditch [19] (Fig 14d), on a east-west axis, and up to 1.65 m in width and 0.55 m in depth, with a markedly asymmetrical profile. Its southern edge was very steep, and the base of the feature sloped upwards to its more gentle northern side. Its single fill (18) produced animal bone and ceramic tile or brick fragments, stone tile fragments, iron objects, some slag and 13 sherds of 3rd-4th century Romano-British pottery.

Ditch [26], located *c.* 100m along the trench, was up to 1 m in width and 0.20 m in depth, and on a curving east-west alignment. Its southern edge was much steeper than its more gentle northern side, and it had an irregular but largely concave base. The single fill (25) contained some animal bone and tile or brick fragments, stone tile fragments, and seven sherds of 2nd-4th century pottery. This was in turn cut by ditch [28] (Fig 14e), a right-angled feature that changed direction from NNE-SSW to a broadly east-west orientation. It was up to 0.95 m in width and 0.52 m in depth, with steep sides and a V-shaped profile. Its two fills (35 and 27)

yielded animal bone and ceramic tile or brick fragments, stone tile fragments and two nearly complete sandstone roofing tiles, iron objects (probably nails), and 20 sherds of late 3rd and 4th century pottery. It was on the same alignment as the western gully flanking the stone building revealed in area B of the Sewer Diversion site (BS 93, cut 21), but the dimensions and profile of that feature were very different to ditch [28], and this may have been a coincidence. No sign of the stone building was present in the water main diversion. North of this area, however, a spread of stone rubble was noted during construction groundworks; between the water main and sewer diversion easement trenches.

Located *c*. 120m along the trench, cut [14] was up to 0.70 m in width and 0.15 m in depth, with moderately sloping sides and a flat base. It had a curving NNE-SSW orientation, and its fill (12) produced animal bone, ceramic tile or brick fragments and several sherds of 2nd century pottery. Five metres south-east again cut [41] (Fig 14f) was up to 0.90 m in width and 0.40 m in depth. Only c. 2 m of its length was exposed in the trench, on a roughly NNE-SSW alignment, running to a rounded terminal. Its fill (40) contained animal bone, ceramic and stone tile fragments, and one sherd of 1st century AD pottery. It was only 1.5 m away from and broadly parallel to ditch [45], a much larger feature up to 2.90 m in width and up to 0.70 m in depth, with moderately gentle sloping sides. The distinctive 'double U' base profile of ditch [45] suggested that there had been a recut of this feature. Only two fills were recorded, deposits (31) and (44), and these contained animal bone, ceramic tile or brick, stone tile fragments and 10 sherds of 2nd-4th century pottery. Ditches [41] and [45] were both truncated by a later right-angled section of ditch, [43]. Up to 1.40 m in width and 0.30 m in depth, with variably sloping sides and a flat base, it turned to the south from a previous east-west alignment. Its single fill (42) contained small quantities of animal bone, ceramic tile, stone tile and pottery of 2nd-4th century date. All of these features had been disturbed by modern ceramic land drains.

There was a series of medieval or post-medieval linear plough furrows aligned north-south across the entire line of the easement (cuts 1-7, 9, 16, 17, 19, 21, 34 and 38), and cutting many of the earlier archaeological features. The fills of these produced a mixed assemblage of material.

Archaeological investigation of the line of the water main pipe trench thus produced further evidence for ditched enclosures surrounding the villa complex likely to be of the same approximate date. There was some possible evidence for earlier boundaries (such as ditch [41]), but there was no further evidence for the large masonry structure encountered in the sewer diversion trench. It is possible, however, that the right-angled ditch cut [28] delineated the area in which the substantial stone building originally stood. The largest proportion of ceramic tile and brick recovered during the Brockworth Bypass project came from the water main diversion area (see Durham below), although this is not that surprising given the close proximity of the main villa buildings only *c*. 80 m to the south-west.

Road strip and environmental bunds (Site BBP 94)

To the north and north-east of the Hucclecote villa, topsoil stripping in advance of road construction together with groundwork associated with the construction of environmental bunds revealed Romano-British or medieval boundaries and structures preserved within an area 0.35 km in width. These features were rapidly recorded to the extent possible during road construction in four areas. Two areas (areas 1 and 3) were investigated within the 'corner' formed by the M5 motorway and the A417 Barnwood bypass, and contained a stone wall (area 1), a stone built 'corn dryer', ditched trackway, and other enclosure boundaries (area 3). Two further areas on the north side of the Horsbere Brook (areas 2 and 4) were rapidly recorded just

to the west of Churchdown Lane, and south of The Noake (Fig. 2). Area 3 was investigated in more detail than the others.

Area 1

A short length of stone wall [100] was exposed during topsoil stripping on the northern edge of the Barnwood bypass (Fig. 2) but as no further intrusive groundworks were required in this location it was rapidly recorded but not further excavated. It was orientated approximately north-east to south-west; at least 5 m of its length could be traced, and it was *c*. 0.60 m in width, It comprised large, subrounded oolitic limestone fragments and there was no sign of mortar or other bonding material. Four very small and unidentifiable sherds of pottery were recorded in association with the wall. No structures or boundaries are shown in this location on tithe or any Ordnance Survey plans.

Area 2

Area 2 (centred approximately on SO 8770 1780) comprised two smaller, separate excavation areas of ditched features approximately 16 m apart.

The southernmost group of features consisted of three intercutting ditches. The earliest in the sequence was ditch [106]. It appeared to be orientated WNW-ESE, and roughly 2.70 m of its length was recorded. Its fill (107) contained animal bone, ceramic building material and stone tile fragments, and nine sherds of pottery, of Romano-British and medieval date (12th to 14th century). This ditch was truncated by [109], on the same alignment and possibly a recut as they shared their southern edges. Its fill (108) also contained some animal bone and Roman and medieval ceramics. Both [106] and [109] were cut by later ditch [111]. This appeared be the corner of a boundary on a slightly different alignment with one section orientated approximately east-west, before it turned to the south-west. Its single fill (112) did not produce any finds. Given the presence of Roman and medieval finds, it is likely that all of these ditches were medieval or later in date.

Further to the north, ditch [103] was a broad, shallow feature 3.30 m in width and 0.35 m in depth, with gently sloping sides and a flat base. Its single fill (104) contained some animal bone and nine sherds of later 2nd or 3rd century pottery. Roughly 3 m of its length was exposed in plan, and it appeared to be on a north-west to south-east alignment, slightly at variance with the three ditches to the north. This may indicate a difference in date, although given the problems of dating these features and the likelihood of residuality, this has to remain speculative.

Area 3

The excavation area (centred on SO 8790 1750) was irregular in plan, and was expanded outwards when topsoil stripping revealed a large ditch. The open area that was finally excavated was approximately 45 m in length north-south, and a maximum of *c*. 22 m east-west. In addition to this main focus of work, a series of trenches were then excavated to the east and north in order to check for further archaeology, revealing further ditches (Fig 15).

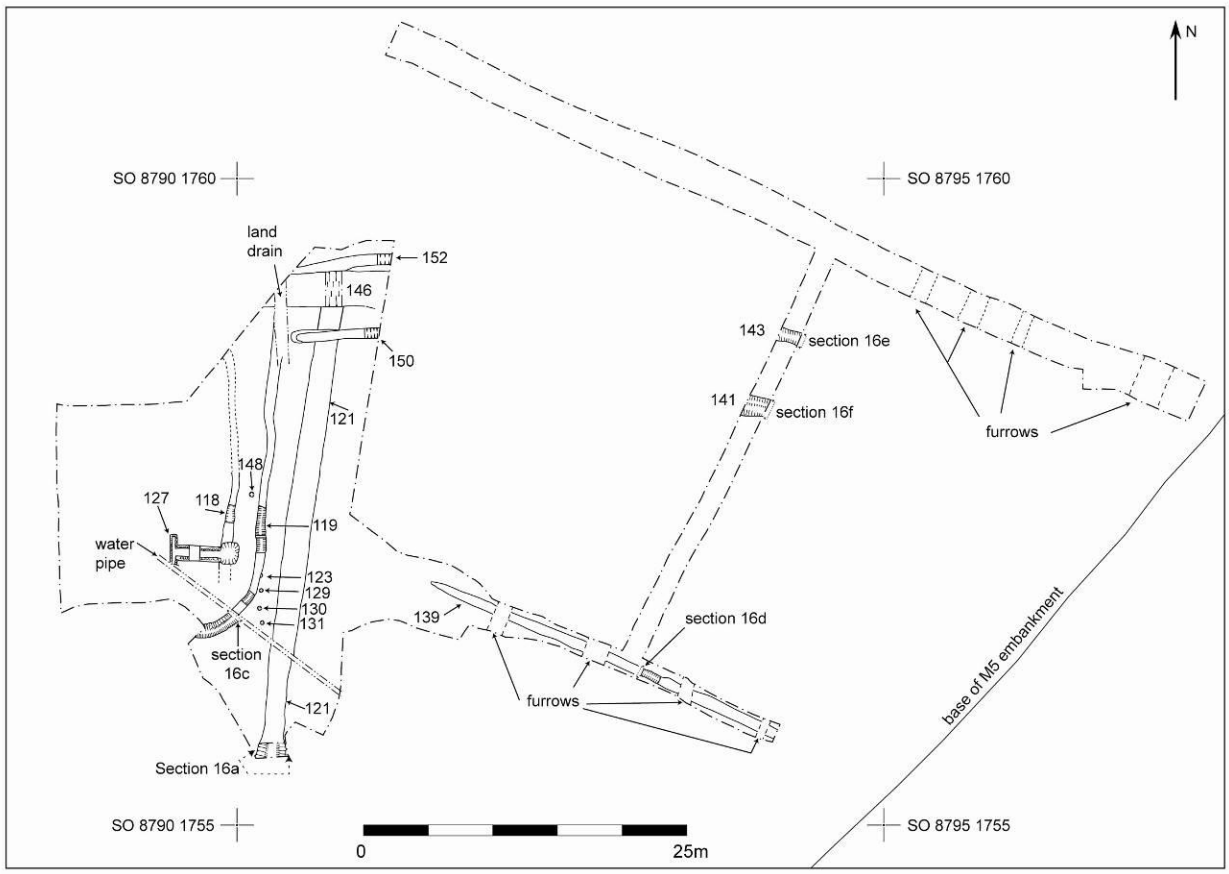

Fig. 15: Road strip (BBP94). Plan of area 3

Ditch cut 121 (Fig 16a) was a roughly north-south orientated feature at least 40 m in length, and up to 2.50 m in width and 1.00 m in depth. It had a 'stepped' profile, which may be evidence for a recut. It had been truncated by later ridge and furrow, and land drain cuts. The single fill (120) contained animal bone and ceramic tile or brick fragments, an iron nail, ten sherds of Romano-British and two of medieval pottery. The presence of medieval pottery in the feature was surprising given that it was cut at right angles by ditches 150 and 146, with a postulated terminal having been removed by ditch 146. No finds were recovered from ditches 150 and 146. In section, deposit 120 was depicted as lying beneath layer 126, a generic context number given to the fill of later plough furrows in the area, so it is possible that the medieval finds in 120 were intrusive. The feature also cut layer 136, recorded as a 'Romano-British subsoil'. No finds were recovered from layer 136, however, so this identification is hypothetical.

Ditch [150] was aligned east-west, it was up to 0.80 m in width with steep sides and a V-shaped profile. Approximately 6.60 m was exposed in plan, together with its western terminal. Neither its primary (155) nor upper fill (149) produced any finds. Ditch [146] lay 1.60-2.00 m further north, and this was another roughly east-west orientated feature up to 2.60 m in width.

Ditch [146] cut across the line of ditch cut [152], a broadly east-west aligned but more sinuous feature in the extreme northern part of area 3. It was up to 0.85 m in width, and fairly shallow with a gently concave profile. At least 7.20 m of its length was exposed in plan, and it was broadly parallel with ditch [150] further south. The single fill (151) did not produce any finds. Due to the truncation by ditch [146], the relationship between ditch [152] and ditches

[119] and [121] was not clear, although if [121] did indeed terminate below the line of [146], ditches [121] and [152] could have been respecting each other.

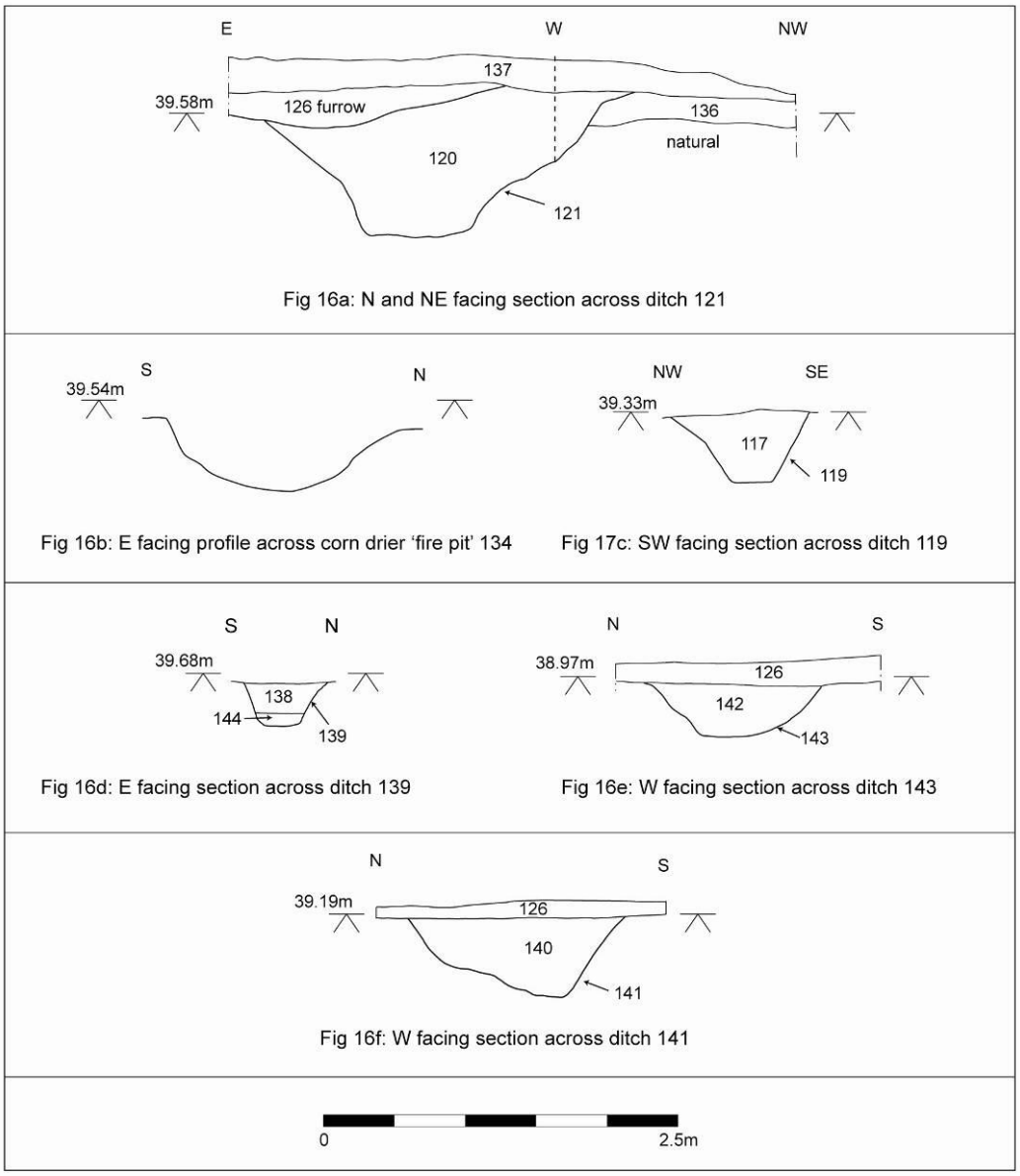

Fig 16a: N and NE facing section across ditch 121

Fig 16b: E facing profile across corn drier 'fire pit' 134

Fig 17c: SW facing section across ditch 119

Fig 16d: E facing section across ditch 139

Fig 16e: W facing section across ditch 143

Fig 16f: W facing section across ditch 141

Fig. 16: Road strip area 3. Sections

In area 3 a large T-shaped, stone-built oven or 'corn drier', typical of Romano-British examples excavated elsewhere, was identified. This was formed by oolitic limestone blocks (structure 127) and overall was 3.90 m in length and 1.10 m in width, with the head of the T being *c*. 2.5 m in width. The long axial flue of the feature was orientated roughly east-west. The internal width of the flue was approximately 0.70 m, and 0.20 m within the head of the T. The limestone was roughly dressed and bonded with orange-brown clay, and up to four courses of stonework 0.35 m in height survived. Many of the faced internal stones had been discoloured red or bluish-grey through exposure to heat. A pitched vertical stone surviving at the eastern end of the northern wall was probably a structural feature, part of possible original vaulting.

The upper fill of the feature (114) consisted of oolitic limestone rubble with clay, burnt clay, daub and large quantities of charcoal. It also contained animal bone and tile or brick fragments, and a fragment of possible limestone moulding. The rubble fill may have derived from a collapsed, vaulted superstructure of the feature, and it overlay (125), a deposit of black charcoal rich clayey silt with patches of burnt clay and some small oolitic limestone fragments up to 0.10 m in depth. Its plastic, 'greasy' texture and large percentage of charcoal indicated a high organic content. One sherd of Romano-British pottery from (114) could be refitted to one found in layer (125). The pottery from the fill was of mid-3rd-4th century date.

Fig. 17: Road strip area 3. Photo of T-shaped corn drier 127 with rubble infill 114 partly removed, exposing charcoal layer 125 in the base of the flue. Facing W.

The rubble layer (114) extended some 1.20 m further east than the coursed masonry of (127), and it was apparent that it also lay within a subcircular cut [132], approximately 1.25 m in length and 1.45 m in width, and up to *c*. 0.45 m in depth with a gently concave base. This proved to be a recut, which had truncated deposit (133), a clayey silt with large quantities of burnt red clay lumps and numerous flecks of charcoal. This deposit lay within an earlier cut [134], whose eastern extent was subrectangular in plan, 1.45 m in length, 1.70 m in width and up to 0.50 m in depth (Fig. 16b). This feature probably formed part of the overall construction cut for stone structure (127). The pits at the eastern end of the stone structure probably served as fire pits and/or rake out access into the corn drier. Slumping of the sides of the earlier feature may have necessitated its later recut. The stones of structure (127) only lined the sides of the construction cut, not the base, and once deposit (114) was removed the natural clay subsoil was visible beneath.

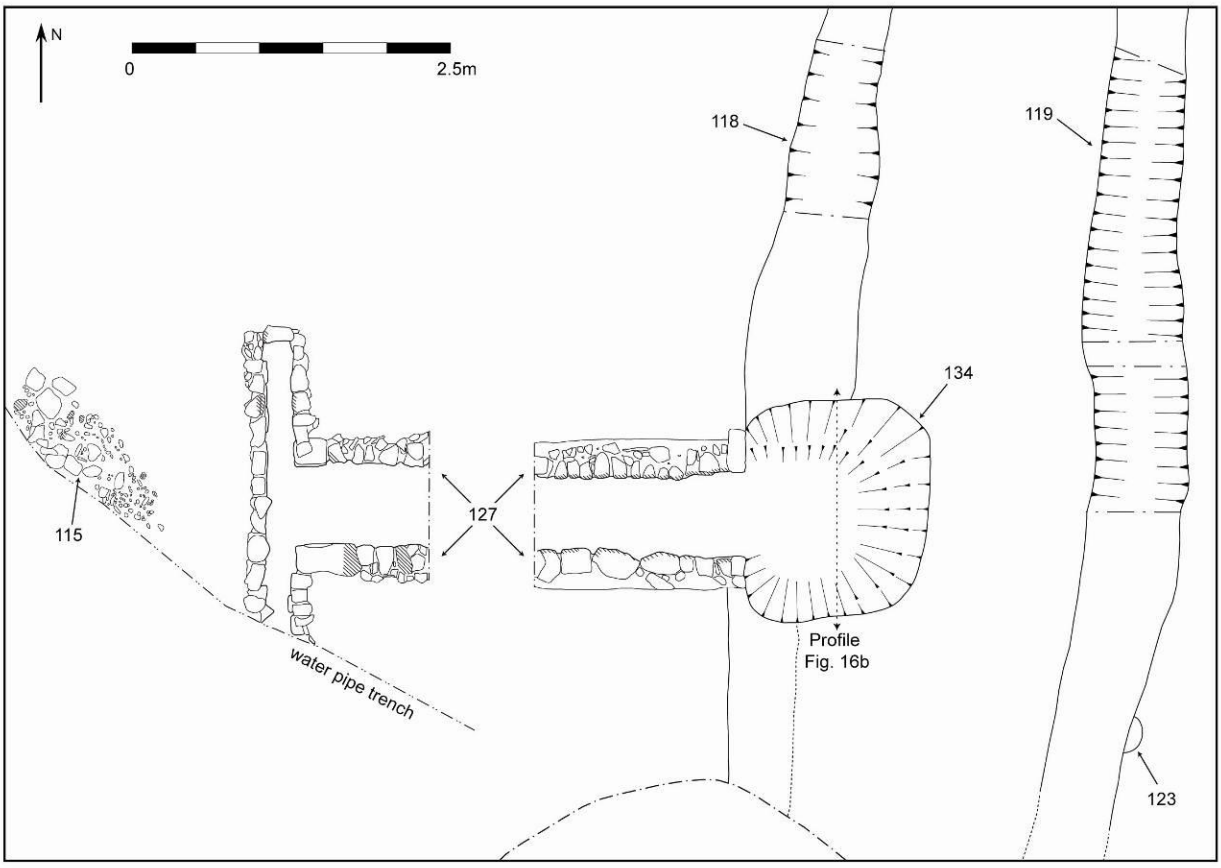

Fig. 18: Road strip area 3. Plan of corn drier 127 after removal of all fills

Less than a metre west of structure (127) was (115) (Fig. 18), part of another structure formed from roughly hewn oolitic limestone, and possibly bonded with an orange-brown clayey silt. This was first recognised during the excavation of a modern water pipe trench, in the side of the construction cut, and was up to 1.50 m in length and 0.50 m in width. The full extent of structure (115) could not be determined. It may have represented the footings of a stone structure associated with corn drier (127).

The two fire or rake out pits (132 and 134) were dug through the fill (116) of a ditch [118]. This was up to 0.85 m in width and aligned roughly north-south. It seemed to extend southwards from the corn drier 127 for approximately 1.50 m, but after this it could not be traced. North of corn drier (127), it was traced for approximately 5 m. Fill (116) contained animal bone and ceramic tile or brick fragments, and two sherds of 2nd century pottery.

Roughly 1.60-2.00 m further east of ditch [118] was ditch [119], (Fig 16c), up to 1.00 m in width and 0.50 m in depth, with steep sides and a flat base. At least 42 m of this feature was recorded, for much of its length broadly parallel to ditch [118] on a north-south alignment. Towards the northern limit of area 3 it appeared to curve slightly towards the north-east. South of the corn drier, however, [119] appears to have curved round to the south-west and seemed to be taking an east-west alignment, although this was at the extreme western limit of the excavation area. The single fill of this ditch produced animal bone and ceramic tile or brick fragments, one piece of flint but no pottery. Its northern extent was truncated at an oblique angle by the cut of a modern land drain.

Ditch [119] appeared to truncate the fill of a small rounded posthole [123]. Three other postholes (129, 130 and 131) of the same approximate size (0.24-0.30 m across) and spacing (0.80-0.85 m) seemed to form part of a north-south alignment with [123], and these may have represented a timber fence or part of a wooden structure. Postholes [129], [130] and [131] were excavated and are described as having near vertical sides and 'U-shaped' bases, and one at least seems to have had a postpipe. The two fills (122 and 123) of [129] and [130] contained fragments of ceramic tile or brick and some sherds of pottery, one of which could be identified as Roman Severn Valley ware.

Roughly *c*. 4 m to the north of corn drier (127) and in between ditches [118] and [119], there was another rounded posthole [148], up to 0.38 m across. Its fill (147) contained some small bone fragments. This feature was in line with postholes [123] and [129]-[131], and was presumably part of the same wooden structure. It is possible that ditch [119] may have removed other postholes in the same alignment.

Approximately 10 m east of ditch [121] was the terminal of a ESE-WNW orientated ditch [139], whose length was traced for *c*. 29 m further to the east, where it appeared to continue beyond the limit of excavation and beneath the line of the M5 motorway. This ditch was 0.60-0.80 m in width and up to 0.30 m in depth with steeply sloping sides and a flat base. One small section was excavated, but its fills (138) and (144) did not produce any finds. It was truncated by several NNE-SSW orientated plough furrows. To the north of ditch [139] were two further broadly east-west orientated ditches, [141] and [143]. Ditch [141] was up to 1.65 m in width and 0.50 m in depth, asymmetrical in section, with a steeper southern edge and a concave base. Ditch [143], nearly 5 m further north, was up to 1.10 m in width and 0.35 m in depth, with gently sloping sides and a concave base. The two fills of these features, (140) and (142), did not produce any finds.

The probability that some of the few dateable finds were intrusive or residual and the limited amount of excavation possible at area 3, means that interpretation and even broad phasing of the enclosures recorded is speculative. Ditches [118] and [119] could have been broadly contemporary and formed two sides of a double ditched trackway or droveway, although the gap between them was rather narrow. Towards the northern edge of the excavation area, however, the distance between the two ditches widened to about 3 m, so this could imply that they formed part of a livestock-controlling feature such as a 'crush', narrowing to the south where the near right-angled turn might also have been linked to the need to restrict animal movements. Features such as these have been identified within later prehistoric and Romano-British landscapes elsewhere in Britain, where large numbers of livestock were managed (Chadwick 2007; Pryor 1996). Alternatively, however, one of the ditches may have been dug along the line of an earlier bank and ditch boundary, and the gap between them may simply have reflected the presence of a remnant of upstanding bank, or possibly a hedge.

The line of postholes from [148] to [131] may have been a fence line, or one side of a timber structure that could have been associated with the T-shaped stone corn drier. If ditches [118] and [119] were broadly contemporary, however, this creates problems for the phasing, with one ditch being truncated by the construction cut of corn drier (127), with the other apparently cutting one of the postholes. Of course, a later recut of ditch [119] may have taken place, but there was no evidence found for such a recutting episode.

It is also possible that ditch [141] eventually joined up with [150], and ditch [143] with [152]. Both sets of features were approximately 5 m apart, and may have formed part of a trackway or droveway. Given the sparsity of dateable finds from these features, however, this remains conjecture. Similarly it is tempting to suggest that ditch [118] turned west and continued the alignment represented by [150] and that the area therefore comprised a series of enclosures defined by double ditched trackways. The presence of two sherds of medieval pottery in the fill of ditch [120], which was apparently cut by [150], does not support this, however.

Area 4

A ditch [162] was identified in this area during topsoil stripping in the road corridor (centred on SO 8775 1785) and a small broadly rectangular area 3.60 m in length and 1 m in width was cleaned to allow a record to be made. The feature was 2.80 m in width and up to 0.65 m in depth, with an irregular but flattish base. Orientated *c*. east-west, its northern edge was noticeably steeper than its more gently sloping southern side. Its single fill (161) contained a few animal bone fragments and two sherds of pottery, one of which may have been late Iron Age/early Romano-British Malvernian ware. Topsoil finds in the vicinity, however, included Roman and medieval pottery, so it is possible that even the stratified sherds were residual.

Summary

The archaeological features revealed in the four areas excavated as part of the watching brief on the road strip and environmental bunds confirmed the presence of outlying features and activities connected with occupation of the Hucclecote villa, particularly the stone-built corn drier and some of the boundary ditches found in area 3 (Glos 15503). Many of the ditches in area 3, and the ditches and stone wall recorded in areas 1, 2 and 4, were either undated, or, with the exception of ditches [118] in area 3 and [162] in area 4, possibly of medieval or later date.

Although the complicated modern road layout makes it appear that watching brief features were physically distant from the Hucclecote villa, in fact the corn drier was less than 200 m to the east of the central villa building and all the features recorded in the slip road, sewer and water main diversions, and those in watching brief areas 1 and 3 were in the same field as the villa in 1880.

Badgeworth Round Barrow (Site BRB 94)

The watching brief phase of archaeological work also included the recording of accidental damage to the already much reduced Badgeworth round barrow (HER Glos 3797, Fig. 1), caused by earth-moving machinery storing soil from the road strip.

An area approximately 18 m in length and 5 m in width on the western side of the mound was damaged by contractor's vehicles, and this disturbed soil deposits to a depth of *c*. 0.5 m, including 0.25 m of topsoil but also underlying archaeological deposits. The mound was thus effectively partly sectioned along a north-south axis. The barrow mound itself comprised mottled clay material that appeared to be the local Lias clay substrate dumped in haphazard fashion to form a mound. The excavation team were therefore uncertain whether the mound actually represented a constructed round barrow (Charles Parry pers. comm.). The mound appeared to be bordered or partly defined by a darker, curvilinear feature, with an apparent break in it approximately 4 m in width. It is possible that this feature was part of the siltier fill representing a barrow ditch, with a possible entrance or causeway through the ditch. The 'smearing' and general disturbance caused by the soil stripping, however, made the identification of features difficult, and the focus of the archaeological work was simply to record the area of damage, not expose or further investigate the nature of the archaeology present. A contour survey of the damaged mound was also produced.

During recording of the damage, 14 worked flints, pottery, coins, iron artefacts, copper alloy fragments and a glass fragment were recovered (see Barclay and Cool below), as well as animal bone fragments, and a single fragment of human bone (see Boylston below). Most of the identifiable finds, including the pottery, were medieval or later in date, although eight Roman pottery sherds and two late Roman coins were identified. Several iron nails, a post-medieval copper-alloy strap end and a post-medieval iron horse shoe were amongst the metal finds. In addition, a possible bead proved to be a fossilised burrow from a marine boring bivalve (see Roe and MacKerrow below) that had probably been reused as a bead. This highly unusual find, together with the human bone fragment identified, suggest that an inhumation burial had been disturbed, either by the earth-moving heavy plant, or in antiquity.

Following the recording of the damage, and retrieval of finds, archaeological monitoring was also undertaken during repairs to repair the mound, which involved bringing in additional soil to reinstate the profile.

SPECIALIST FINDS REPORTS

The pottery by Jane Timby

Introduction and methodology

The various archaeological interventions at Brockworth collectively produced an assemblage of 1730 sherds weighing 18.192 kg, mostly of Romano-British date, but also including a single prehistoric sherd and several sherds of medieval and post-medieval date.

The assemblage was sorted into fabrics using the Gloucester City type fabric (TF) codes and, where relevant for the traded Roman wares, the National Roman fabric reference codes (Tomber and Dore 1998). Detailed descriptions are not given as the wares have been published in detail elsewhere (cf. Ireland 1983; Vince 1983). The Romano-British assemblage was quantified by sherd count, weight and estimated rim equivalence (EVE) for each recorded context. A quantified summary of the resulting data can be found in Table 1. The post-Roman finds were quantified by sherd count and weight. A copy of the complete pottery database will be deposited with the site archive.

In the following report the assemblages from each of the main archaeological interventions is briefly described; followed by an overview of the assemblage comparing it with other published material from the locality.

Table 1: Quantified summary of the Romano-British pottery assemblage.

Roman	Fabric	Description	No	No %	Wt	Wt %	EVE	EVE%
Imports	LGF SA	South Gaulish samian	2	0.1	10.5	0.1	2	0.1
	LEZ SA	Central Gaulish samian	28	1.6	347	2.1	45	2.3
	BAT AM	Baetican amphora	2	0.1	163	1.0	0	0.0
Regional	DOR BB1	Dorset Black Burnished ware	489	27.9	4314.5	25.6	583	29.6
	SOW BB1	South-west Black Burnished ware	9	0.5	34	0.2	7	0.4
	LNV CC	Lower Nene Valley colour-coat	1	0.1	22	0.1	11	0.6
	OXF RS	Oxon red slipped ware	8	0.5	38	0.2	19	1.0
	OXF RSM	Oxon red-slipped mortarium	28	1.6	358	2.1	21	1.1
	OXF WHM	Oxon whiteware mortarium	5	0.3	481	2.9	95	4.8
	ROB SH	Late Roman shelly ware	6	0.3	74	0.4	7	0.4
	SAV GT	Savernake ware	2	0.1	123	0.7	0	0.0
	WIL OX	N. Wiltshire oxidised sandy	1	0.1	1	0.0	0	0.0
	Glos TF5	Grey micaceous ware	117	6.7	1310.5	7.8	125	6.3
	Glos TF 19	Wheel-made Malvernian ware	3	0.2	8.5	0.1	0	0.0
Native ware	Glos TF 2	hm grog-tempered ware	4	0.2	10	0.1	8	0.4
	MAL REA	Malvernian rock-tempered	9	0.5	75	0.4	20	1.0
	MAL REB	Malvernian limestone-tempered	155	8.8	13	0.1	12	0.6
Local	SVW OX	Severn Valley ware (oxidised)	854	48.7	9283	55.2	1003	50.9
	SVW RE	Severn Valley ware (reduced)	19	1.1	81.5	0.5	0	0.0
Unknown	GYF	Fine grey ware	1	0.1	8	0.0	0	0.0
	MISC	Miscellaneous sandy wares	6	0.3	35	0.2	14	0.7
	OXID	Misc. oxidised ware	1	0.1	4	0.0	0	0.0
	OXIDCC	Oxidised colour-coated ware	2	0.1	35	0.2	0	0.0
TOTAL			**1752**	**100.0**	**16830**	**100.0**	**1972**	**100.0**

Sewer diversion (Site BS 93)

Work along the Sewer Diversion resulted in the recovery of 166 sherds of pottery, most of which is Roman in date (Table 2). In broad terms the pottery was quite fragmented with an average sherd size of 7.6 g. Many of the sherds had a leached appearance with loss of surface finish and abraded edges. Despite this, there were instances of multiple sherds from single vessels.

Pottery from the topsoil, machining and plough furrows accounted for 45% of the total assemblage. Included in this group were the post-medieval and medieval sherds. The Romano-British wares mainly comprised later pieces dating to the 3rd-4th centuries, although there were three pieces of potentially earlier 2nd-century Central Gaulish samian present.

Table 2: Pottery from the Sewer Diversion site (BS 93).

BS 93	Fabric	Description	No	No %	Wt	Wt %	EVE	EVE%
ROMAN	LEZ SA	Central Gaulish samian	4	2.4	81	6.4	10	6.0
	DOR BB1	Dorset Black Burnished ware	58	34.9	480	38.1	83	50.0
	OXF RS	Oxon red slipped ware	1	0.6	16	1.3	0	0.0
	OXF RSM	Oxon red-slipped mortarium	2	1.2	40	3.2	0	0.0
	ROB SH	Late Roman shelly ware	2	1.2	8	0.6	7	4.2
	Glos TF5	Grey micaceous ware	3	1.8	58	4.6	5	3.0
	Glos TF 19	Wheel-made Malvernian ware	1	0.6	3	0.2	0	0.0
	MAL REB	Malvernian limestone-tempered	2	1.2	16	1.3	0	0.0
	SVW OX	Severn Valley ware (oxidised)	83	50.0	504	40.0	61	36.7
	SVW RE	Severn Valley ware (reduced)	1	0.6	1	0.1	0	0.0
MEDIEVAL	Glos TF 40	Malvernian cooking ware	3	1.8	28	2.2	0	0.0
POST-MEDIEVAL		Various late glazed wares	6	3.6	26	2.1	0	0.0
TOTAL			**166**	**100.0**	**1261**	**100.0**	**166**	**100.0**

Most of the remaining pottery came from four ditches (5, 21, 28 and 45), and robber trench [31]. The earliest of these ditches appears to have been ditch [5], with 47 sherds comprising a mixture of Dorset Black Burnished ware (DOR BB1) and Severn Valley ware (SVW OX). The former consisted exclusively of flat-rim bowls, of which there were several sherds from a single vessel; the latter included a tankard. These sherds probably date the abandonment of this feature to the latter part of the 2nd century. Ditch [21], by contrast appears to have been later, with a sherd of Central Gaulish samian mortarium, a DOR BB1 jar with a narrow band of oblique lattice decoration and a bifid rim SVW OX jar, all pointing to a date in the later 3rd or 4th centuries.

Ditch [45] with two plain-rimmed, DOR BB1 dishes and uncharacteristic SVW OX was also probably later Roman in origin, although it cannot be closely dated beyond the later 2nd century. Ditch [28] with just four sherds was difficult to date closely other than the 2nd century or later. A sherd of Oxfordshire red-slipped ware from robber trench [31] suggested this dated from the mid-3rd century onwards.

M5 slip road (Site HC 93)

A fairly substantial assemblage of 1017 sherds was recovered from Site HC 93 (Table 3), of which 80.6 % was recovered from numbered features. As a result, the overall average sherd weight was slightly higher at 10.9 g. The pottery from the furrows and unstratified collection was mainly from the Roman period, but there were also a marked number of medieval, post-medieval and early modern sherds, along with several clay pipe stems. The Romano-British wares were heavily biased towards sherds of oxidised SVW OX, and the general emphasis was towards the later Roman period. Of note is an unstratified sherd of DOR BB1, with part of a post-firing graffiti (Fig. 19.17).

Table 3: Pottery from the M5 Slip Road site (HC 93).

HC 93	Fabric	Description	No	No %	Wt	Wt %	EVE	EVE%
ROMAN	LGF SA	South Gaulish samian	1	0.1	0.5	0.0	0	0.0
	LEZ SA	Central Gaulish samian	18	1.8	217	2.0	22	1.8
	BAT AM	Baetican amphora	1	0.1	102	0.9	0	0.0
	DOR BB1	Dorset Black Burnished ware	320	32.0	2738.5	25.3	311	25.3
	SOW BB1	South-west Black Burnished ware	7	0.7	26	0.2	7	0.6
	LNV CC	Lower Nene Valley colour-coat	1	0.1	22	0.2	11	0.9
	OXF RS	Oxon red slipped ware	2	0.2	5	0.0	12	1.0
	OXF RSM	Oxon red-slipped mortarium	1	0.1	3	0.0	12	1.0
	OXF WHM	Oxon whiteware mortarium	4	0.4	434	4.0	100	8.1
	SAV GT	Savernake ware	1	0.1	96	0.9	0	0.0
	WIL OX	N Wiltshire oxidised sandy	1	0.1	1	0.0	0	0.0
	Glos TF5	Grey micaceous ware	95	9.5	1027.5	9.5	97	7.9
	Glos TF 19	Wheel-made Malvernian ware	2	0.2	5.5	0.1	0	0.0
	Glos TF 2	hm grog-tempered ware	3	0.3	6	0.1	0	0.0
	MAL REA	Malvernian rock-tempered	9	0.9	75	0.7	20	1.6
	SVW OX	Severn Valley ware (oxidised)	510	51.1	5902.5	54.5	614	49.9
	SVW RE	Severn Valley ware (reduced)	2	0.2	7.5	0.1	0	0.0
	GYF	Fine grey ware	1	0.1	8	0.1	0	0.0
	MISC	Misc. sandy wares	6	0.6	35	0.3	14	1.1
MEDIEVAL	Glos TF 40	Malvernian cooking ware	6	0.6	22	0.2	10	0.8
	Glos TF 44	Minety ware	1	0.1	0.5	0.0	0	0.0
	Glos TF 52	Herefordshire border ware	6	0.6	89	0.8	0	0.0
POST-MEDIEVAL	Glos TF 59	Surrey-Hampshire border ware	1	0.1	2	0.0	0	0.0
	Glos TF 66	Porcelain	1	0.1	2	0.0	0	0.0
	Glos TF 72	Moulded slip ware	1	0.1	24	0.2	0	0.0
		Various glazed earthenwares	16	1.6	221	2.0	0	0.0
TOTAL			**999**	**100.0**	**10826**	**100.0**	**1230**	**100.0**

The quantity of material recovered from the features was quite variable, with intrusive post-Roman sherds in some instances. Ditch [50] appears to have been amongst the earlier features on the site on the basis of the pottery. The fill produced 40 sherds, including two pieces of samian, grog-tempered ware, DOR BB1 and SVW OX, suggesting a provisional date in the 2nd century.

Slightly later in date, potentially dating to the 3rd century, was ditch [70] and feature [95], and less certainly, ditch [105] and its fill (104). Ditch [70] contained mainly sherds of

DOR BB1 and SVWOX. The former included several sherds from a jar (SF4) decorated with a just oblique burnished line lattice (Fig. 19.14) and at least two plain-rimmed dishes; the latter a flat-rim bowl. Feature [95] produced only five sherds but these included two large joining pieces from an Oxfordshire white-ware mortarium, Young (1977) form M20, dating to the period AD 240-300 (Fig. 19.16).

Amongst the later features on the site were ditches [60], [85] and [100], and feature [99]; all with later 3rd-4th century finds. Ditch [60] yielded the largest individual assemblage on the site with 362 sherds weighing 4.9 kg. This group included one of the only two sherds of Baetican olive-oil amphora recovered from the overall project, the only sherd of a Lower Nene Valley colour-coat vessel, the lid from a ceramic box (Fig. 19.03), and an unusually small Oxfordshire white-ware mortarium Young (1977) M22 variant (Fig. 19.12). Three fabrics dominated the group – DOR BB1 accounted for 39.5 % by count; SVW OX for 48 % and micaceous grey-ware Gloucester TF 5 for 9.7 %. The former included at least two conical, flanged-rim bowls (Fig. 19.06), plain-rimmed dishes and jar decorated with oblique latticing (Fig. 19.07). The SVW OX included wide-mouthed flared rim and narrow necked jars (Fig. 19.8 and 11), bowls, tankards (Fig. 19.09) and a slightly splayed bowl-like vessel, possibly a failed tankard (Fig. 19.10). The micaceous grey ware included flanged and grooved rim bowls and jars copying DOR BB1 types (Figs 19.04, 05 and 13). Ditch [100] and feature [99] contained lesser quantities of material, but with a similar range of the more common fabrics and forms. Amongst the finds recovered from ditch [100]/[107]/[109] was a base sherd with a post-firing graffito (Fig. 19.15).

Ditch [85] was stratigraphically later than ditch [100] suggesting that it was later in the sequence, although the pottery did not contain any specifically later Roman material. The 25 sherds included one intrusive post-medieval piece, but also had Central Gaulish samian, three sherds of hand-made Malvernian ware, one sherd from a lid and one from a jar, several SVW OX tankard sherds, and two small sherds of DOR BB1. It is nevertheless possible that most of the assemblage was redeposited.

Water main diversion (Site BWM 94)

Archaeological work along the line of the Water Main Diversion trench recovered 385 sherds of pottery weighing 4.25 kg (Table 4). Medieval and post-medieval material accounted for 8.7 % of this, the rest was Romano-British. The furrows and ploughsoil produced 22 % of the assemblage and several of the post-Roman pieces, but there were further intrusive sherds in some of the numerous ditches that produced most of the remaining material.

Most of the ditches, where dateable, appear to have belonged to the late Roman period. Ditch [54] produced some 82 sherds, of which 50.2 % was DOR BB1 and 58.5 % SVW OX, with a single piece of post-medieval stoneware. The DOR BB1 contained a high number of jar rims and a single plain-walled dish, none necessarily post-dating the later 2nd-3rd centuries. Ditch [45], with far less material, may also have been 3rd century in origin. Ditch [28] similarly contained much DOR BB1, but this included two conical flanged-rim bowls and examples of oblique latticing, indicating a date in the 4th century. Even later in abandonment date were ditches [30] and [52], all of which contained sherds of later Roman shelly-ware (as did furrow [38]) usually seen as current from the last quarter of the 4th century. In addition, ditch [30] also produced three sherds of Central Gaulish samian, and an Oxfordshire colour-coated bowl. Ditch [52] also contained single sherds of samian and Savernake ware, alongside other typical later wares.

Table 4: Pottery from the Water Main Diversion site (BWM 94).

BWM 94	Fabric	Description	No	No %	Wt	Wt %	EVE	EVE%
ROMAN	LEZ SA	Central Gaulish samian	5	1.3	39	0.9	3	0.6
	BAT AM	Baetican amphora	1	0.3	61	1.4	0	0.0
	DOR BB1	Dorset Black Burnished ware	100	26.0	1060	24.9	189	40.8
	SOW BB1	South-west Black Burnished ware	1	0.3	8	0.2	0	0.0
	OXF RS	Oxon red slipped ware	2	0.5	12	0.3	7	1.5
	OXF WHM	Oxon whiteware mortarium	1	0.3	47	1.1	0	0.0
	ROB SH	Late Roman shelly ware	4	1.0	66	1.6	0	0.0
	SAV GT	Savernake ware	1	0.3	27	0.6	0	0.0
	Glos TF5	Grey micaceous ware	16	4.2	182	4.3	13	2.8
	Glos TF 2	hm grog-tempered ware	1	0.3	4	0.1	8	1.7
	MAL REB	Malvernian limestone	1	0.3	1	0.0	0	0.0
	SVW OX	Severn Valley ware (oxidised)	201	52.2	2409	56.7	243	52.5
	SVW RE	Severn Valley ware (reduced)	15	3.9	71	1.7	0	0.0
	OXID	Misc.oxidised	1	0.3	4	0.1	0	0.0
	OXIDCC	Misc. colour-coat	2	0.5	35	0.8	0	0.0
MEDIEVAL	Glos TF 40	Malvern Chase cooking ware	2	0.5	24	0.6	0	0.0
	Glos TF 44	Minety ware	3	0.8	2	0.0	0	0.0
	Glos TF 52	Herefordshire Border ware	3	0.8	50	1.2	0	0.0
POST-MEDIEVAL	Glos TF 54	Herefordshire Border ware	1	0.3	10	0.2	0	0.0
	Glos TF 68	German stoneware	1	0.3	3	0.1	0	0.0
		Various glazed	23	6.0	136	3.2	0	0.0
TOTAL			**385**	**100.0**	**4251**	**100.0**	**463**	**100.0**

Road strip and environmental bunds (Site BBP 94)

The watching brief during road construction produced a small assemblage of 159 sherds weighing *c.* 1.4 kg (Table 5). Just over one third of the group comprised medieval sherds, with examples of vessels from Malvern Chase (Glos TF 40), the Herefordshire borders (TF 52), Haresfield near Gloucester (TF 41) and Minety, north Wiltshire (TF 44). Twenty-three percent of the assemblage or 38 sherds came from five ditches, the remainder was largely unstratified. Ditches [103] (area 2) and [118] (area 3) produced just Roman sherds but, with nine and two pieces respectively, dating was tenuous. Both could have been later 2nd or 3rd century. Ditches [106], [109] (both area 2) and [121] (area 3) all contained a mixture of Romano-British and medieval sherds and may thus be of medieval date, with redeposited or residual Roman sherds.

The assemblage contained ten hand-made, limestone-tempered sherds of later Iron Age/early Roman Malvernian ware, and one piece of South Gaulish samian, perhaps indicative of some earlier 1st-century AD occupation in the vicinity.

Table 5: Pottery from the road strip and environmental bunds (BBP 94).

BBP 94	Fabric	Description	No	No %	Wt	Wt %	EVE	EVE%
ROMAN	LEZ SA	Central Gaulish samian	1	0.6	10	0.7	0	0.0
	LGF SA	South Gaulish samian	1	0.6	10	0.7	2	1.5
	DOR BB1	Dorset Black Burnished ware	11	6.9	36	2.6	0	0.0
	OXF RS	Oxon red slipped ware	3	1.9	5	0.4	0	0.0
	OXF RSM	Oxon red slipped mortarium	25	15.7	298	21.4	21	16.2
	Glos TF5	Grey micaceous ware	3	1.9	43	3.1	10	7.7
	MAL REB	Malvernian limestone	10	6.3	138	9.9	12	9.2
	SVW OX	Severn Valley ware (oxidised)	45	28.3	466.5	33.6	85	65.4
	SVW RE	Severn Valley ware (reduced)	1	0.6	2	0.1	0	0.0
MEDIEVAL	Glos TF 40	Malvern Chase cooking ware	26	16.4	97	7.0	0	0.0
POST-MEDIEVAL	Glos TF 54	Herefordshire Border ware	1	0.6	13	0.9	0	0.0
		Various glazed	2	1.3	13.5	1.0	0	0.0
TOTAL			**385**	**100.0**	**4251**	**100.0**	**463**	**100.0**

Badgeworth round barrow (Site BRB 94)

Monitoring work at the round barrow resulted in the recovery of a small assemblage of 55 sherds. Most significant was a rim sherd in the unstratified collection which was probably of Bronze Age date (Fig. 19.01). This may suggest disturbance of a burial within the barrow, or of a satellite burial.

The remaining group of material comprised eight Roman sherds, 44 medieval sherds and three post-medieval pieces, along with a fragment of probable post-medieval roof-tile, and four fragments of fired clay. The Romano-British pottery appeared late in date, with two Oxfordshire colour-coated sherds and the rest oxidised SVW OX.

Overview

The assemblage recovered from the various sites associated with the Brockworth Bypass was quite modest in quality and quantity, although it augments that already documented from the area. Prehistoric pottery was found below the Hucclecote Roman villa (Clifford 1933, fig. 23) where at least three Deverel-Rimbury style vessels, probably from middle Bronze Age occupation were found, although published details of them are vague. Archaeological work associated with Gloucester Business Park Link Road, Hucclecote (Thomas *et al.* 2003) also found traces of middle Bronze Age activity in the form of a flat cremation cemetery, and this area was subsequently occupied by a later Bronze Age/early Iron Age settlement. Unfortunately, little diagnostic pottery was associated with this (Timby 2003).

The Romano-British ceramic assemblage appears to indicate phases of use of the landscape throughout the entire Roman period, but with the greater emphasis towards the later Roman period. Examining the overall Romano-British assemblage (Table 1), it can be seen that there was a clear emphasis on Severn Valley wares which accounted for 49.9 % of the total

assemblage by count, and Dorset Black Burnished wares that formed a further 27.9 %. Imported continental wares were scarce, with only a small quantity of samian and two sherds of Baetican olive-oil amphorae from southern Spain. The samian amounted to 1.7 % of the total assemblage, entirely typical of a rural site. This assemblage is broadly comparable to that from the Business Park Link Road (Timby 2003, table 3), which had a similarly low level of imported wares.

The excavations at Brockworth by Rawes (1981) appear to have produced quite a substantial samian assemblage, although precise figures are not given in the published report. This may be a reflection of more definite 2nd-century occupation and perhaps closer proximity to an occupied area. A small quantity of samian was noted from Hucclecote villa itself (Clifford 1933, 354), but probably not a great amount and mainly 2nd century or later.

The estimated vessel equivalence (EVE) for the Bypass assemblages overall show that jar forms dominated, accounting for 48.3 % of the measured rims; followed by dishes/bowls at 30.3 % and tankards at 11.6 %. Other forms were present in small amounts, and included mortaria (5.9 %), lids (1.1 %), beakers (1.1 %), cups (1 %) and flagons (0.8 %). This pattern is typical for a later Roman rural assemblage where there was a general decrease in the number of jars compared to earlier periods, and a commensurate increase in bowls/dishes. This probably represented changes in food preparation and consumption practices.

It is clear from the reports dealing with pottery from Hucclecote/Brockworth that the composition of the assemblages was broadly similar with the same wares dominating, although the overall percentages varied slightly. At both the Gloucester Park Link Road (GPLR) and the Bypass works Severn Valley wares were the commonest type present, followed by DOR BB1. Severn Valley ware accounted for 66 % at the former compared to 49.9 % at the latter, whilst DOR BB1 accounted for 16% at the GPLR compared to 27.9 % at the Bypass. The Bypass sites produced a less diverse assemblage compared to the GPLR group, which embraced a higher number of regional traded wares and significantly more 1st-2nd century local ware, but no late Roman shelly wares. This suggests that occupation in the area ceased well before AD 360/370.

The published assemblage from Hucclecote was very much a later Roman assemblage, with everted rim jars and flanged bowls typical of the DOR BB1 industry and copied in micaceous grey wares (TF 5), Severn Valley wares, Oxfordshire colour-coated wares and late 4th-century shelly ware (Clifford 1933, figs 26-31). The assemblage from Brockworth (Rawes 1981) similarly seems to have been dominated by Severn Valley ware and DOR BB1, but in addition the author noted some 1st-2nd century Malvernian wares, a marked number of vessels from the Oxfordshire industries and some later Roman shelly ware, suggesting a greater time span was involved there. Small-scale work by Clifford to the south of the villa produced a small group of material with a 2nd-century bias (Clifford 1961).

Further afield, the same dominance of the two main fabric groups can be seen at Witcombe Roman villa, also a predominantly late Roman assemblage, where SVW OX varied between 42 % and 50 % and DOR BB1 between 20 % and 34 % per period (Leach 1998, 66). The impression from the samples collected to date is that these sites lying in Gloucester's hinterland did not display the same diversity and richness of imports seen within the *colonia* at the same period. It is difficult to pick up any chronological trends across the different areas investigated as part of the Bypass work. Very little early Romano-British pottery was present, and this came mainly come from site BBP (areas 15502/15504) to the north. The sites closest to the Hucclecote villa (BWM 94 and BS 93) had a notably large proportion of late Roman wares, indicating activity contemporary with the occupation of the villa.

The highest incidence of medieval pottery appears to have been from site BBP 94, where there seems to have been at least three ditches of this date, two in area 15502 and one in 15503.

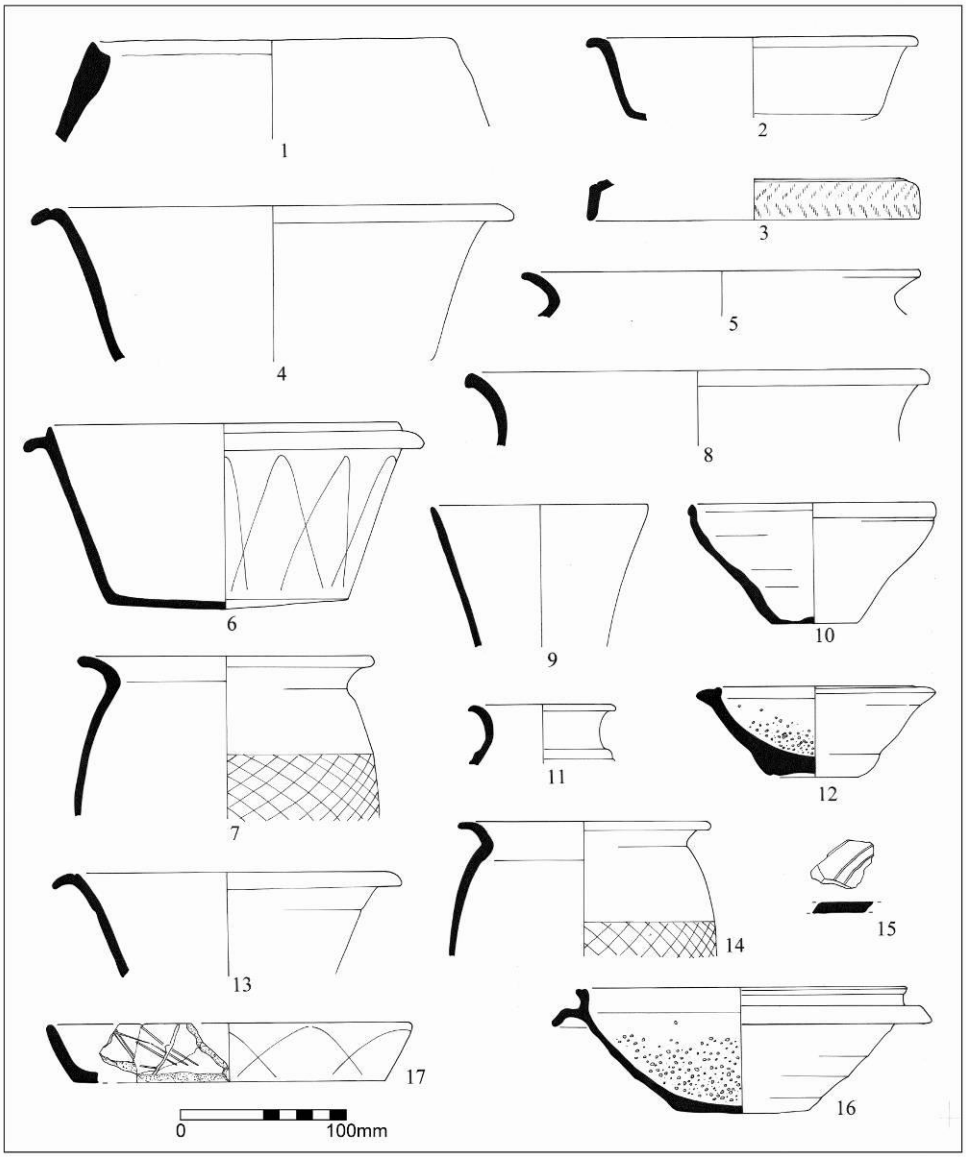

Fig. 19: Pottery (Jane Timby)

Catalogue of illustrated sherds

1. Rimsherd from a large handmade vessel. The sherd is mid to dark brown in colour with black patches. The paste contains a moderate to common frequency of sub-angular to rounded white limestone up to 2 mm in size, producing a white speckled appearance on the outer surface. The interior is leached with just surface voids. In addition, there is a sparse frequency of fine calcitic fragments, and dark red-brown rounded argillaceous pellets up to 1 mm in size, and rare fine sandstone inclusions. The clay is probably from the Woolhope series in the Malvernian area. The sherd could have come from an urn broadly similar to those from the Bevan's Quarry round barrow, Temple Guiting (O'Neil 1967, fig. 3). The Badgeworth piece shares the slightly recessed rim form but has broken too high up the vessel to determine whether it comes from a biconical form.

It also differs in fabric; the Bevan's Quarry examples being described as containing shell grit. Site: BRB 94, unstratified.

2. Flat-rimmed bowl with much leached surfaces. Fabric: DOR BB1. Site: BS 93 (context 6).

3. Lid from a Lower Nene Valley box with rouletted decoration. Fabric: LNV CC. Site: HC 93, Ditch 60 (context 61).

4. Large grooved-rim bowl. Fabric: Glos TF 5. Sooted under the rim. Site: HC 93, Ditch 60 (context 61).

5. Everted rim, wide-mouthed jar. Fabric: Glos TF 5. Site: HC 93, Ditch 60 (context 61).

6. Large flanged rim bowl with burnished line arcading. Fabric: DOR BB1. Site: HC 93, Ditch 60 (context 61).

7. Everted rim jar with burnished lattice decoration. Fabric: DOR BB1. Site: HC 93, Ditch 60 (context 61).

8. Flared rim, wide-mouthed jar. Fabric: SVW OX. Site: HC 93, Ditch 60 (context 61).

9. Tankard with slightly flaring walls. Fabric: SVW OX. Site: HC 93, Ditch 60 (context 61).

10. Small bowl or perhaps a collapsed tankard. Slightly asymmetrical rim. Fabric: SVW OX. Site: HC 93, Ditch 60 (context 62).

11. Narrow necked, cordoned jar. Fabric: SVW OX. Site: HC 93, Ditch 60 (context 62).

12. Small mortarium, 75% present. Wire cut base with abraded external base angle. The interior has a slightly off-centre worn zone of use. A variant of Young (1977) type M22 dated AD 240-400 +. Fabric: OXF WH. Site: HC 93, Ditch 60 (context 62).

13. Grooved rim bowl. Fabric: Glos TF 5. Site HC 93, Ditch 60 (context 62).

14. Everted rim jar with burnished lattice decoration. Site HC 93, Ditch 70 (context 69), SF 4.

15. Base sherd from a bowl with two parallel concentric lines incised after firing. Fabric: DOR BB1. Site: HC 93, Ditch 100/107/109 (context 83).

16. Small mortarium. Young (1977) form M20, AD 240-300. Fabric: OXF WH. Site: HC 93, Ditch 95 (context 94).

17. Plain-walled dish. Various incised lines on the interior made after firing. Fabric: DOR BB1. Site: HC 93, unstratified.

Ceramic building material by Emma Durham

Introduction

A total of 1267 fragments of ceramic brick and tile material (CBM) weighing 78.6 kg was recovered from investigations along the Brockworth Bypass. All of the material is Roman in date, except for a few fragments of post-medieval brick and drain.

The assemblage was divided into form and fabric types; then quantified by number and weight. The forms identified included *tegulae*, *imbrices*, box tile and bricks. Unidentifiable flat fragments were divided into two groups on the basis of thickness. Those less than 30 mm thick are likely to be either *tegulae* or box tiles, while those over 30 mm thick are brick. The generally small size and abraded state of the fragments, in particular that from the sewer diversion (BS 93) and the M5 slip road (HC93), meant that many could not be assigned to known types. Flanges were recorded on 39 *tegulae* fragments, and seven types were identified. The most common were simple convex flanges with rounded or squared edges. Details are listed in Table 6 below.

Table 6: Types of flanges recorded on the Romano-British tiles from the Brockworth Bypass.

Type	Description	No.
1	Simple flange with rounded, convex top	4
2	Flange with sloping, rounded front face	2
3	Flange with sloping, angled front face	4
4	The top of the flange has a rounded convex ridge	1
5	The top of the flange is pointed	1
6	The top of the flange has a rounded concave surface	3
7	The top of the flange is flat with a squared rear edge and squared or rounded front edge	21

Five basic fabric types were identified, although there is some variation within each fabric. All are primarily orange in colour, with variations from light to red- or brown-orange. The details of each fabric are given below:

- Fabric A: a fine sandy, sparsely micaceous fabric with few inclusions including red iron, grog and very occasionally limestone;
- Fabric B: a fine sandy fabric similar to A but with no mica;
- Fabric C: a sandy fabric with sparse to moderate rounded and sub-rounded quartz inclusions. Occasional red iron or grog may also be present;
- Fabric D: hard fired fabric with few inclusions;
- Fabric E: a sandy fabric with abundant rounded and sub-rounded quartz inclusions.

Sewer diversion (Site BS 93)

A small group of 173 fragments weighing 12,742 g was recovered (Table 7). Like the pottery from this site, much of the material was abraded and had suffered from loss of surface finish. Some 70 % of the brick and tile was recovered from the topsoil, machining or plough furrows, whilst most of the remainder from ditches 5, 21, 28 and 75, with small groups from robber trench 9 and pit 26.

The identified fragments were three box tiles with combed decoration, 35 *imbrex* fragments and ten *tegulae*. Two of the *tegulae* fragments had partial signature curves, and two flanges of type 7. The majority of the fragments were in fabrics A (63 % by weight) and C (32 %) with only small quantities of fabrics B (4 %) and D (1 %). One possible post-medieval brick fragment was recovered during machining.

Table 7: CBM from the Sewer Diversion site (BS 93).

Type	**No.**	**Wgt.**
Box	3	188 g
Imbrex	35	5264 g
Tegula	10	2638 g
<30	17	1753 g
Fragments	107	2867 g
Post-med	1	32 g
Total	**173**	**12742 g**

M5 slip road (Site HC 93)

A moderate assemblage of 268 fragments weighing 15492 g was recovered (Table 8). Some 69 % of this was from ditches, in particular ditch cuts 50 and 60; and two fragments from posthole 91. The remainder was unstratified or from medieval or post-medieval furrows.

The identified fragments were one brick, two box tiles with diagonal combing, 11 *imbrex* and 26 *tegulae*. One *tegula* fragment had a partial 'signature' with three concentric curves, and nine had identifiable flanges. Four of these were type 7, two type 8 and one each of types 1, 3 and 5. Of note was a complete tile from ditch 70 with flange type 5 and lower cutaways that had removed the lower corner of the tile with an angled cut. It was 430 mm long and 340 mm wide. The most common fabric was A (55 % by weight), with fabric C comprising a further 38 %. There were also small quantities of B (1 %), D (3 %) and E (2 %), and seven post-medieval brick fragments.

Table 8: CBM from the M5 Slip Road site (HC 93).

Type	**No.**	**Wgt.**
Box	2	696 g
Imbrex	11	1282 g
Tegula	26	7498 g
<30	29	3570 g
>30	1	204 g
Fragments	192	2146 g
Post-med	7	96 g
Total	**268**	**15492 g**

Water main diversion (Site BWM 94)

This comprised the largest assemblage from the excavations with 801 fragments weighing 48,532 g (Table 9). The majority (77 %) was recovered from ditches, and the rest from unidentified deposits, furrows or the ploughsoil.

The identified fragments were 17 brick, 11 box tile, 81 *imbrex* and 68 *tegulae*. All except one of the box tile fragments had combed decoration. Most had a pattern of straight or diagonal combing, but one was curved. The flanges identified on the *tegulae* comprised three type 1, two type 2, three type 3, 1 type 4, three type 6 and 13 type 7. Two fragments had lower cutaways – one was an angled cut which removed the lower corner of the tile, and the second removed both the lower corner and a small vertical section of the back of the tile. One fragment had a nail hole, and two partial 'signatures' (one a double and one a triple concentric curve).

Almost equal proportions of fabrics A (37 % by weight) and C (36 %) were identified. Fabric B comprised a further 18 %, while fabrics D (4 %) and E (5 %) occurred in small quantities.

Table 9: CBM from the Water Main Diversion site (BWM 94).

Type	**No.**	**Wgt.**
Box	11	2830 g
Imbrex	81	9264 g
Tegula	68	10992 g
<30	123	13106 g
>30	17	2856 g
Fragments	500	9466 g
Post-med	1	18 g
Total	**801**	**48532 g**

Road strip and environmental bunds (Site BBP 94)

A small assemblage of 25 fragments weighing 1893 g was recovered (Table 10). Fourteen of these fragments were from ditches [106], [118], [119] and [121], seven were unstratified, and four were from a post-medieval context. The identified fragments were 2 box tiles with straight combing, three *imbrex* and one *tegula*. The identified fabrics were A (40 % by weight), C (46 %) and D (14 %).

Table 10: CBM from the road strip and environmental bunds (BBP 94).

Type	**No.**	**Wgt.**
Box	2	100 g
Imbrex	3	208 g
Tegula	1	218 g
<30	10	976 g
Fragments	9	391 g
Total	**25**	**1893 g**

Discussion

The heavily abraded state of the assemblage made it difficult to identify fragments or measure the size of the tiles. The presence of both *imbrices* and *tegulae* indicated that there was ceramic roofing at the site, and the small quantities present may have been due to the use of stone tiles as well (Clifford 1933, 328-329, see below). The box tiles also indicate the presence of underfloor or wall flue heating, and/or bath buildings at the site, as discussed by Knowles (1933, 342-344). Although examples of RPG and other stamped tiles were found in previous excavations (Clifford 1933, 350-352), none was found during the bypass investigations. The tiles were likely to have been produced locally, however, and RPG tiles were produced at St Oswald's Priory, Gloucester (Heighway and Parker 1982). Fabrics A and C were the most common fabric types. Both *tegulae* and *imbrices* occurred in all five fabric types, but box tiles and brick occurred only in fabrics A, B and C.

Metal and glass finds by Hilary Cool

Introduction

In what follows, items that can be dated independently to the medieval period or earlier are catalogued, and other material is mentioned as appropriate. The majority of the metalwork found on all sites other than the Badgeworth Round Barrow (BRB 94) consisted of iron items. Unfortunately, none of this material was X-radiographed at the time, and most had disintegrated in storage over the years. The majority of the iron appears to have consisted of nails, but without X-radiographs such a statement cannot be confirmed, and in its current fragmented state X-radiography would no longer be of any assistance. In the case of the M5 Slip Road (HC 93), some of the items were obviously selected for conservation at an earlier date and were completely cleaned, which has enabled them to be identified.

The finds examined ranged in date from the 2nd to the 4th century. There were some hints of links with the Hucclecote villa in the form of a piece of 4th century window glass from BS 93 (No. 3), and the ivory hairpin found at HC 93 (No. 4) was also indicative of a wealthy household. The other items recovered would not be unusual on more modest rural settlement in this area.

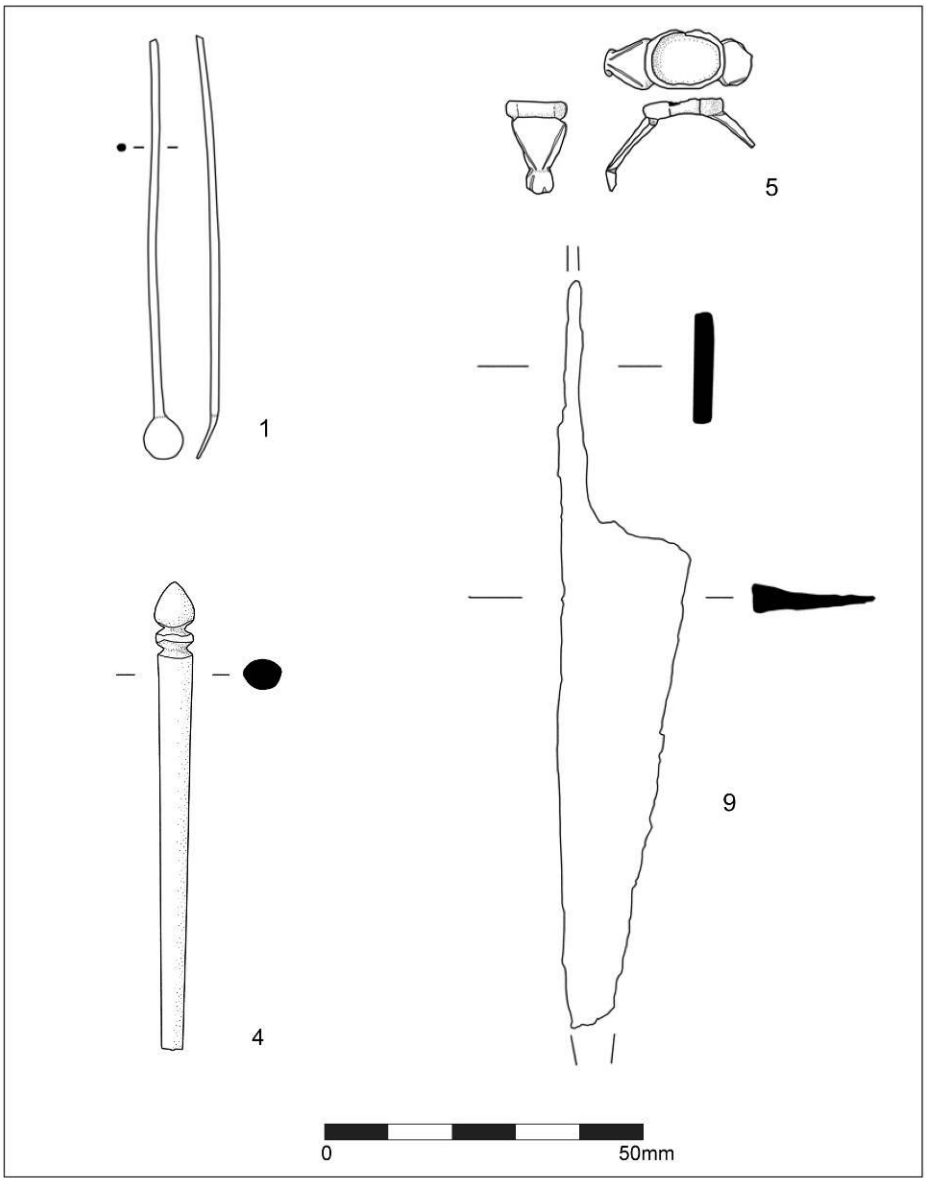

Fig. 20: Metal and bone objects (Hilary Cool)

Sewer diversion (Site BS 93)

These excavations produced three items of undoubted Roman date. No. 1 was a *ligula*, a common type of long-handled implement that could be used as toiletry and/or medical implements (Fig. 20, no. 1). These are not closely dateable within the Roman period. Previous excavations at Brockworth produced part of an olivary probe which was another multi-purpose implement suitable for both toiletry and medical purposes (Rawes 1981, 66, no. 6). No. 2 was most probably part of the shoulder of a blue/green glass bottle, though it is rather thicker than is normal. Such bottles were common from the later 1st century AD into the 3rd century (Price and Cottam 1998, 191-200). The majority of the small vessel glass assemblage found during the earlier excavations consisted of fragments from such bottles (Price 1981), and in general rural sites of the 1st and 2nd centuries frequently produce fragments of these utilitarian containers, even when no other glass vessels are found.

No. 3 was the most interesting of the finds from this site – a fragment of blown 4th century window glass. This indicated that a 4th century building with glazed windows was located somewhere in the vicinity. It may well have come from the same building that was suggested by the roofing stone found at this site (see Shaffrey below). The Hucclecote villa would of course be a very good candidate to have had glazed windows, and window glass was reported as having been found during the excavations on the site of the villa (Clifford 1933). Whether this was the earlier cast variety or blown glass such as this is not stated in the report, and it should be noted that the possibility exists that body fragments of prismatic bottles might have been mistaken for window glass at the time the report was written.

The only other finds from this site were a minimum of nine iron nails, and they were itemised on the database.

1. *Ligula*. Copper alloy. Slightly faceted circular-sectioned broken shank; flat circular blade at a slight angle. Present length 61 mm, diameter shank 2 mm, diameter blade 6 mm. Site: BS 93 (Area A, context 2).

2. Bottle; shoulder fragment (?). Blue/green glass. Site: BS 93 (Area A, context 6).

3. Window glass fragment. Light green with many small slightly curved elongated bubbles; one fire rounded edge, very slightly curved. Area *c*. 9 cm^2. Site: BS 93 (Area B, context 22).

M5 slip road (Site HC 93)

This site produced the largest range of finds, most notably the hair pin (Fig. 20, no, 4). The decoration was cut into the shank to produce both the knob finial and the rib, so it falls into Crummy's (1983) Type 2 hairpin category which was a 2nd century AD form. This example, however, came from a ditch fill dated by pottery to the late Roman period. The structure visible on the broken end was more typical of ivory than of bone, and the appearance of the polished surfaces also suggested that this piece is made of ivory. The unusual material might account for the apparent discrepancy in the dates, making it more likely to have been a curated piece. Ivory finds from Roman Britain are not common. Greep, originally writing in the late 1980s, only knew of about 60 pieces (Greep 2004, 403). More ivory items have been found in Romano-British contexts since then, including a notable example carved in the shape of a female figure or deity recovered from a pit excavated in Barnwood (Garrod 1988, 25), 1.3 km to the south-west of the Hucclecote villa. Ivory nevertheless still remains rare compared with artefacts made from bone, so the recovery of this hair pin is noteworthy.

The fragmentary finger ring (Fig. 20 no. 5) would have had an elbowed profile when complete, which was a 3rd century type (Henig 1978, 38 type VIII). This form had a wide range of decoration on the shoulders and different bezel types, but the presence of decoration on the hoop behind the shoulders is unusual. Most of the hobnails from a late Roman ditch fill were packaged together, suggesting they were probably excavated together on site. The fragmentation they suffered made it difficult to identify just how many there were originally, but there were certainly enough for one shoe, and it is likely that what was originally discarded was a complete shoe, rather than these representing individual, accidental losses.

Two different Roman glass vessels were present. No. 7 came from a bottle of the sort discussed in connection with No. 2 above, and could be dated to the later 1st to earlier 3rd

century. No. 8 clearly came from a flask, but was not sufficiently diagnostic for it to be more closely dated.

Object No. 9 (Fig. 20) was one arm of a set of small iron shears (Manning 1985, 34 Type 3). Shears were the equivalent of modern scissors, and somewhat surprisingly are not as frequently identified in the archaeological record as might be expected. Examples the size of no. 9 would have been suitable for domestic and personal use, such as for cutting hair or beards. Object Nos. 10 and 11, an iron staple and an iron riveted mount, cannot be dated to the Roman period on typological grounds but they both came from Roman contexts. The site also produced at least 13 nails, itemised on the database.

4. Hair pin. Ivory. Oval-sectioned tapering shank; upper end formed into a facetted pointed oval knob; two grooves cut into upper part of shank forming one rib; shank broken and fracture shows linear pattern. Present length 73 mm, maximum section 5 x 4.5 mm. Site: HC 93 (context 62, SF 5).

5. Finger ring; bezel and shoulder fragment. Copper alloy. Oval box-bezel now empty; triangular, angled shoulders with groove parallel to each edge; one shoulder broken, other retains angular junction with hoop, junction accentuated by small edge nicks; small part of hoop remaining has two grooves parallel to edge. Bezel dimensions 13 x 9 mm; maximum shoulder section 7.5 mm. Site: HC 93 (context 31, SF 2).

6. Hobnails. Iron. At least 30 heads and shanks recognisable; but many more are implied by fragments. Also one additional hobnail packaged separately from this context. Site: HC 93 (context 61).

7. Bottle; two chips from upper part of a folded rim. Blue/green glass. Site: HC93, unstratified.

8. Flask; neck fragment. Green-tinged colourless glass with small bubbles. Cylindrical neck fragment curving out towards body. Dimensions 28 x 27 mm. Site: HC 93 (context 98).

9. Shears; one arm. Iron. Majority of one triangular blade with straight back and lacking tip; lower part of expanding spring. Present length 103 mm, maximum width of blade 20 mm. Site: HC93 (context 55, SF 3).

10. Staple (?) Iron. One arm of small ‘U’-shaped staple. Length 38 mm. Site: HC93 (context 105).

11. Riveted mount. Iron. Rectangular-sectioned elongated triangular blade with slightly curved edge; other end broken across an expansion retaining circular-headed rivet. Present length 61 mm, maximum blade width 17 mm, diameter of rivet head 9 mm. Site: HC 93 (context 63, SF 6).

Water main diversion (Site BWM 94)

The only item worthy of note here is a lead pottery repair (No. 12). When complete it would have resembled one from Somerford Keynes (Miles *et al.* 2007, 257 nos. 51). As noted in the discussion from that site, lead pottery repairs have frequently been found on sites in the Gloucestershire/Oxfordshire area in surprisingly large numbers, given that replacement pottery would not have been difficult to acquire (*ibid.*, 347). This example therefore falls into a well-established regional pattern.

Other items from the site consisted mostly of iron nails, a minimum of 15 examples. A possible hobnail was also identified, but it may just have been a small nail. There was also a cylinder of lead from the same context as No. 12.

12. Pottery cramp. Lead alloy. Two D-sectioned bars, one broken; small fragment of reduced pottery between bars. Complete bar length 62 mm, section 8 x 6 mm. Site BWM 94 (context 29).

Road strip and environmental bunds (BRB 94)

A hinge pivot (No. 13) came from a context that contained pottery ranging in date from Romano-British to the post-medieval period. It was of a type used with wood rather than masonry (Goodall 1990, 330), and has to be medieval or later in date, as such pivots were not used in the Roman period.

13. Hinge pivot. Iron. Tapering guide arm; short square shank. Length – shank 60mm, guide arm 105mm. Site: BBP 94 (context 160).

Badgeworth round barrow (BRB 94)

With the exception of two Roman coins including a barbarous radiate reported on elsewhere (see Adams below), all of the metalwork collected from this site was of post-medieval, early modern or modern date where it could be independently dated. There was also one fragment of a post-medieval glass wine bottle.

The coins by Kurt Adams

Badgeworth round barrow (BRB 94)

1. Glos 3797. Copper alloy barbarous radiate; unknown emperor. Diameter 17 mm, thickness 2.2 mm, weight 2.28 g.

   Obverse: radiate bust facing right

   Obverse inscription: […]

   Reverse: figure standing

   Reverse inscription: […]

   Condition: fair

Barbarous radiates were unofficial copies that were issued during the 3rd century AD and the 230s-290s. The majority, however, were produced between AD 275-285, when regular coinage was in short supply following the re-conquest of the breakaway Gallo-Roman Empire.

2. Glos 468, SF No. 1. Copper alloy radiate or *nummus* fragment of unknown emperor. Length 12 mm, width 8 mm, thickness *c*. 1 mm, weight 0.32 g.

   Obverse: illegible

   Obverse inscription: […]S[…]

   Reverse: illegible

   Reverse inscription: illegible

   Condition: poor

Note: only about 45% of this coin remained. The coin was heavily encrusted in corrosion products, resulting in the loss of all of the detail. It probably dated to the 3rd or 4th century.

Stone tile by Ruth Shaffrey

Excavations along the A417 Brockworth bypass produced approximately 88 kg of roof-stones; of which a fifth by weight (5 specimens) were complete or almost complete. The remainder of the assemblage was very fragmentary.

Table 11: Quantification of stone roof tiles by site and weight.

Site code	Weight
BS 93	28762 g
HC 93	18392 g
BWM 94	39929 g
BRB 94	232 g
Total	**87315 g**

Table 12: Quantification of stone roof tiles by site, fragment count and broad phasing.

	Mid-R	Mid-late R	Late R	Roman	Med.	Unstrat.	Total
BS 93		19	11	16	1	14	61
HC93	3	1	28		1		33
BWM 94		24	30				54
BRB 894						1	1
Total	**3**	**44**	**69**	**16**	**2**	**15**	**149**

Table 13: Functional types by weight and fragment count.

Category	Count	Weight
Floor?	1	28 g
Frag	123	58207 g
Frag, hone	6	734 g
Roof	13	12046 g
Roof, complete	5	15100 g
Roof, hone	1	1200 g
Total	**149**	**87315**

Table 14: Stone tile fragment type by broad phase.

Phase	Floor?	Frag.	Frag., hone	Roof	Roof, complete	Roof, hone	Total
Mid-R		3					3
Mid-Late R	1	37	5	1			44
Late R		55	1	6	5	1	68
MED		2					2
Unknown		26		6			32
Total	1	123	6	13	5	1	149

Sewer diversion (Site BS 93)

Almost 29 kg of roof-stones were recovered during excavations along the Brockworth sewer. This included eight specimens (7 kg) with features positively identifying them as roofing, and 53 smaller fragments weighing 22 kg. The assemblage was entirely of Old Red Sandstone.

M5 slip road (Site HC 93)

Just over 18 kg of roof-stones were recovered from excavations near the Hucclecote Centre at the M5 Slip Road. This included four specimens (4 kg) that could be positively identified as roofing, and 29 further small fragments. The vast majority of fragments were 3rd and 4th century AD in date, including all of the definitive roofing, one of which had also been reused as a hone (64). The assemblage was entirely of Old Red Sandstone.

Water main diversion (Site BWM 94)

Five items (approximately 15 kg) were almost complete roof-stones, and a further 2 kg (two items) were identifiable as roof-stones. The remaining 23 kg (46 items) were smaller fragments, almost certainly fragmentary roofing. Five of the fragments had been reused as hones prior to deposition. The vast majority were recovered from late Roman 3rd-4th century contexts (33 kg), with the remainder from mid to late Roman contexts including the examples used for sharpening. The assemblage was entirely of Old Red Sandstone.

Discussion

All the stone roofing was made of fine-grained slightly micaceous reddish brown sandstone, almost certainly Old Red Sandstone, major outcrops of which are located just to the west of Gloucester in the Wye Valley area. Other excavations in the Brockworth area have also produced fragments of Old Red Sandstone, considered to have been used for both flooring and roofing (Rawes 1981, 73), although it was not possible to locate these for verification (Saunders 1998).

Occasionally, assemblages of roof-stone fragments on archaeological sites represent only the movement of stone for a secondary purpose, for example at Overton Down (Saunders 1998, 95) where they were used for sharpening or polishing; and at Biglis where they were interpreted as 'bakestones' (Parkhouse 1988, 2). More locally this was also the case at Kingscote Chessals where fragments all showed evidence of reuse for polishing (Gutierrez and Roe 1998), and Haymes Cleeve Hill (Rawes 1987, 87). At Brockworth, however, the proportion of fragments used as hones was small, suggesting that sharpening was not a significant function. In addition, the complete roof-stones must have come from a roofed building extremely close by, presumably the villa complex at Hucclecote. Earlier excavations around Hucclecote produced around 12 kg of Old Red Sandstone roofing (Roe 2003, 51), and the same stone is recorded as having been used both in the construction of the villa at Hucclecote (Clifford, 1961, 45) and for the later roof (Clifford 1933, 328-329; 1961, 46).

Old Red Sandstone roofing was common in the Gloucester/Cirencester region. It occurred on a variety of rural sites such as Portway (Rawes 1984) and Frocester (Price 2000b), to urban settings in towns as at Beeches Road, Cirencester (McWhirr 1986, 44) and the harbour walls at Gloucester (Fryer 1974, 262). It seems likely that the Hucclecote roofing was sourced in either Gloucester or Cirencester rather than from the quarry, as the use of Old Red Sandstone roofing was concentrated around these two centres (Saunders 1998, fig. 5.1/5.2).

The vast majority of fragments (52kg) were recovered from late Roman contexts. This is in keeping with the evidence that the use of stone for roofing became widespread in the 3rd and 4th centuries (Blagg 1990, 33; Williams 1971, 99). What is not clear is exactly how significant a component of roofing the stone actually was. Old Red Sandstone flags were apparently used in conjunction with other lithologies, for example at Beeches Road Cirencester (McWhirr 1986, 44) and in Gloucester (Heighway 1983, 219), but no evidence of other stone roofing types was noted at Brockworth suggesting that it was the only stone used. The recovery of Roman fired clay roof tiles (see Durham above) suggests that it was used alongside ceramic roofing, as was also the case at the Bon Marché site (Hunter 1963, 43) and at the Witcombe villa (Clifford 1954, 24).

Other worked stone by Ruth Shaffrey

Sewer diversion (Site BS 93)

The excavations at the sewer diversion produced two items of worked stone – a possible millstone fragment, and a whetstone. The millstone fragment was very small, so it was not possible accurately to measure the diameter, but the surviving angle suggests it may have been from a large millstone rather than a rotary quern. It is made of a slightly less coarse than usual variety of Millstone Grit, and was recovered from stone spread 13 (SF 4). Although Old Red

Sandstone querns were the dominant lithology type during the Roman period in this region, querns and millstones of Millstone Grit do occur, with notably large examples nearby at Chedworth villa (Shaffrey 2006, 48). A single well-used Kentish Rag whetstone was recovered from machining level 22 (SF 1, Fig. 21c); these were common during the Roman period.

M5 slip road (Site HC 93)

Two pieces of worked stone from the M5 Slip Road site comprised a single rotary quern fragment, and a spindle whorl. The rotary quern (Fig. 21a) was recovered from ditch 60 (62); it was a small fragment of Old Red Sandstone with deep grooving and of indeterminate diameter. The spindle whorl (SF 8 Fig. 21b) was an unstratified find, and was crudely formed but perfectly serviceable.

Water main diversion (Site BWM 94)

The only item of worked stone from the Brockworth water main diversion trench was a lump of shelly limestone which may have been a partially worked spindle whorl (15). It is of the same lithology as a finished spindle whorl from the M5 Slip Road, but it is rather irregular.

Road strip and environmental bunds (Site BBP 94)

A large lump of oolitic limestone with a shelly matrix was partially moulded on one side, but does not appear to have been finished and was unlikely to have been used (114). Initial working of the stone exposed several flaws (voids) in the stone which probably rendered it useless. It seems likely that it was intended for use in the villa.

Fig. 21a: Rotary quern fragment (HC93)

Fig 21c: Kentish rag whetstone (BS93)

Fig 21b: Limestone spindle whorl (HC93)

Fig. 21d: Fossil worm burrow 'bead' (BRB94)

Fig. 21: Stone objects (photographs Kurt Adams)

Catalogue of illustrated items

1. Upper rotary quern fragment. Old Red Sandstone. Small chunk with deep cross-concentric grooves, which could be part of a segmented radially grooved pattern. The top surface has been extensively reused and is worn smooth and quite concave suggesting use as a hone/smoother. Measures 44 mm max thickness at the edge. Weight: 250 g. Site: HC 93. Ditch 60 (context 62).

2. Spindle whorl. Shelly limestone. Crudely formed roughly circular spindle whorl. The perforation is 12.5 mm in diameter. The whorl is roughly flat but slightly tapered towards the irregular edges. Measures 56-61 mm diameter x 12 mm maximum thickness. Weight: 55 g. Site: HC 93. Unstratified. SF 8.

3. Whetstone. Kentish Rag. One end is missing. Sub-rectangular cross section, only slightly rounded corners. Used across the arrises so that these are slightly bevelled.

Measures 30mm wide, 24 mm thick and *c*. 76 mm long. Weight: 131 g. SF 1. Site: BS 93. Context 22, machining.

The stone 'bead' from Badgeworth round barrow (Site BRB 94) by Fiona Roe and the late Stuart MacKerrow

When recovered from the disturbed area at the Badgeworth Round Barrow (Site BRB 94), this find was initially thought to be a ceramic bead (Fig. 21d). On closer examination, it proved to be stone, though of an unusual nature. It was eventually identified as a fossilised worm burrow from the bivalve mollusc *Toledo sp.*, better known as the wood-boring ship 'worm'. This lamellibranch bores into wood (such as driftwood, or ships' timbers) at sea, and lines its burrows with calcareous excreted tubing. Such burrows occur in wood of Mesozoic and Tertiary age, and may well have been derived from the Severn Estuary.

Given the distance of the round barrow from the River Severn, either this object was imported onto the site within wood, probably driftwood, or it was a manuport. It may well have been used as a bead, and might have been associated with a disturbed prehistoric burial.

Worked flint from Badgeworth round barrow (Site BRB 94) by Alistair Barclay

A total of 14 worked flints were recorded on site, the majority unstratified. One flake was burnt, and several flakes had been broken. One broken bladelet had evidence for edge use and damage, but most of this material was probably debitage, and thus not closely dateable. Both hard and soft hammers had been used, and some knapping 'accidents' in the form of hinge fractures were also noted on some pieces. Two possible core rejuvenation flakes were identified, and these would have been used to make core faces workable once more. Although not diagnostic, this material would not be out of place in a Neolithic or Bronze Age context.

The human bone from Badgeworth Round Barrow (Site BRB 94) by Anthea Boylston

Of the bone fragments recovered during archaeological recording of the damaged Badgeworth Round Barrow (Site BRB 94), only one small find (SF 41) was definitely of human origin, and this consisted of two large and five small pieces of femoral shaft from the mid-bone shaft region below the lesser trochanter. The bone had a polished appearance.

Unfortunately none of the articular surfaces were present, although this was perhaps not surprising since these are the parts of the bone that are most attractive to predators who prefer the marrow-containing spongy bone of the long bone ends, where the cortex is thin. The bone had evidently been gnawed in antiquity, probably by a dog, and must therefore have been exposed at some time in its history. It was impossible to tell whether the root impressions overlay the gnaw marks on the shaft's posterior aspect. The cracking also indicated exposure to the elements at some time in the past, and the colouration was probably caused by the burial environment.

A further small fragment of cortical bone (SF 33) was possibly a human femoral shaft fragment, due to its considerable thickness, but it was too small to allow positive identification.

Discussion

Since it was unlikely that the primary burial had been disturbed, the inference must be that the human femur was probably derived from a secondary burial, inserted into the side of the mound at a slightly later date than its original construction. The skeletal evidence was so fragmentary that it was impossible to be more precise either about the sex or age of the individual, or about the taphonomic history of the bone.

Animal bone by Claire Ingrem

A considerable quantity of animal bone was recovered from the excavations undertaken in advance of the construction of the Brockworth Bypass. Most of the material came from Romano-British ditches and later furrows at the site of the Hucclecote Centre (M5 slip road) where, as a result of residuality, much of the material had to be assigned to broad age ranges. The other assemblages were small, and consequently were unable to provide reliable information regarding the economic and cultural role of animals.

Methodology

Anatomical elements were identified to species where possible, with the exception of ribs and vertebrae which were assigned to animal size categories. Mandibles and limb bones were recorded using the zonal method developed by Serjeantson (1996) to allow the calculation of the minimum number of elements (MNE) and individuals (MNI); this is based on the most numerous zone of a single element taking into account side. Percentage survival of selected elements was based on the minimum number of elements (MNE) calculated as a percentage of the maximum number possible according to MNI. In addition, all bone fragments over 10 mm were recorded to species or size category to produce a basic fragment count of the Number of Identified Specimens (NISP). Fragments categorised as 'large mammal' are likely to have belonged to horse or cattle; those in the 'medium mammal' category to sheep/goat or pig and consequently, for the purposes of this report, are included with the identifiable remains.

The presence of gnawing, butchery and burning together with the agent responsible was recorded. Measurements were taken according to the conventions of von den Driesch (1976) and Payne and Bull (1982) for mammals. The wear stages of the lower cheek teeth of cattle, caprines and pig were recorded using the method proposed by Grant (1982), and age attributed according to the method devised by Payne (1973), Halstead (1985) and O'Connor (1988). The fusion stage of post-cranial bones was recorded and age ranges estimated according to Getty (1975). Measurements of the crown height of horse teeth were recorded, and age estimated according to the method of Levine (1982).

A selected suite of elements was used to differentiate between sheep and goat (Boessneck 1969; Payne 1985) – the distal humerus, proximal radius, distal tibia, distal metapodials, astragalus, calcaneus and deciduous fourth premolar. No elements were positively identified to goat, but for the purposes of this report the caprine remains are referred to as sheep/goat.

Withers height was calculated using the factors of Kiesewalter for horse, Matolsci for cattle and Teichert for sheep (Boessneck and Von den Driesch 1974). The factors of Harcourt (1974) were used for calculating dog shoulder (withers) height.

Data

A total of 2,630 fragments of animal bone was recovered, of which 1,604 were identifiable (Table 15). Most of the material came from the M5 slip road (HC 93), with relatively small amounts derived from the sewage diversion (BS 93) and water main diversion (BMW 94) sites. The areas excavated as part of the watching brief (BRB 94, BBP 94) and evaluation produced very small samples. Overall, the assemblage was dominated by the remains of cattle with dog and horse more numerous than caprines, whilst pig and wild animals were scarce.

Table 15: Taxa representation (NISP) according to site

Site name	**Sewer**	**Slip Road**	**Water Main**	**Watching Brief**				**Eval**	**Total**
Site code	BS93	HC93	BWM94	BRB94	BBP94 Glos 15502	BBP94 Glos 15503	BBP94 Glos 15504		
Horse	18	81	16	2		2	2		120
Cattle	15	228	49	3	6	16	8		325
Sheep		7							7
Sheep/goat	8	82	5	1	1	1	1		99
Pig	1	14	2						17
Dog	5	135	1		1				142
Felis spp.		1							1
Cervus elaphus		1							1
Capreolus capreolus							1		1
Large mammal	112	557	124	19	2	34	6	1	855
Medium mammal	2	29	4	1					36
Unidentifiable	12	889	58	4	2	60			1026
Total	**173**	**2024**	**259**	**30**	**12**	**113**	**18**	**1**	**2630**
Total identifiable	161	1135	201	26	10	53	18	1	1604
% identifiable	93	56	78	87	83	47	100	100	61

Sewer diversion (Site BS 93)

One hundred and eight pieces of animal bone came from the Sewer Diversion site, but only 48 were identifiable and recovered from securely dated contexts (Table 16). All were from Romano-British deposits, and most of these were fragments that can only be assigned to the large size mammal category. Horse, cattle, caprine and dog were all represented, but the samples were too small to provide meaningful information concerning animal husbandry, the economy or cultural practices. Calculation of the minimum number of elements indicated that horse was represented by a minimum of one femur and one pelvis. Apart from an unfused distal epiphysis from a radius that came from an animal below four years of age, cattle were

represented solely by elements from the head and feet. Caprines were represented only by upper and lower loose teeth and dog by an atlas. A cut mark was visible on an ulna belonging to a large size mammal.

Table 16: Taxa representation (NISP) according to period at the Sewer Diversion site (BS 93).

Period	Roman	Med/P-med	Uncertain	Total
Horse	5	3	7	15
Cattle	8	1	4	13
Sheep/goat	5	1	2	8
Pig			1	1
Dog	1	1	3	5
Large mammal	29	7	16	52
Medium mammal		2		2
Unidentifiable	2	10		12
Total	**50**	**25**	**33**	**108**

M5 slip road (Site HC 93)

The assemblage recovered from the M5 slip road site consisted of 1,135 identifiable fragments, most of which were from Romano-British contexts (Table 17). The remaining material was from deposits where the stratigraphy was uncertain, or finds residuality indicated that mixing had taken place. Consequently, this material was not considered further, although the data are shown in Table 15.

Table 17: Taxa representation (NISP) according to period at the M5 Slip Road site (HC 93).

Period	RB	RB/ Med	Med/ P-Med	RB/ P-Med	RB/ Modern	Uncertain	Totals	
							n	%
Horse	*74	1	4	2			81	*15*
Cattle	**207	2		6	4	9	228	*42*
Sheep	6					1	7	*1*
Sheep/goat	74	1	1	5		1	82	*15*
Pig	14						14	*3*
Dog	*** 135						135	*25*
Felis spp.	1						1	*<1*
Cervus elaphus	1						1	*<1*
Large mammal	487	7	3	23	22	15	557	
Medium mammal	29						29	
Unidentifiable	844	11		3	19	12	889	
Total	**1872**	**22**	**8**	**39**	**45**	**38**	**2024**	
Total identifiable	**1028**	**11**	**8**	**36**	**26**	**26**	**1135**	
% identifiable	**55**	**50**	**100**	**92**	**58**	**68**	**56**	

* includes 17 fragments from articulated remains/partial skeletons
** includes 19 fragments from articulated remains/partial skeletons
*** includes 133 fragments from partial skeleton

Almost all of the animal bone was recovered from ditches and other linear features (Table 18). Cattle remains (n = 207) dominated the assemblage, although horse, caprines and dog were also well represented, whilst pig was scarce. Only two bones were from wild animals – a red deer (*Cervus elaphus)* metacarpal, and part of a cat mandible that was assigned to wild cat (*Felis silvestris)* on the basis of size.

Anatomical representation is shown in Table 19, and this indicated that horse was represented by bones from most parts of the body. Metacarpals were the most numerous elements representing a minimum number of five individuals, although mandibles and radii were also well represented according to the NISP totals. The horse assemblage included 14 bones from an articulated forelimb recovered from a ditch (context 78), and three articulated bones from a lower forelimb that were recovered from another ditch deposit (context 63). Epiphyseal fusion data indicated that most of the bones belonged to adult horses, although a proximal tibia that was in a state of fusion provided evidence that one horse was approximately 42 months old when it died. Tooth wear also indicated that most horses were adult (Table 20.1). Two specimens (3 %) displayed gnaw marks (Table 21). Metrical data generally fell within the range recorded at contemporary sites, and those held on the Animal Bone Metrical Archive Project (ABMAP) (http://ads.ahds.ac.uk/catalogue/resources/html). There were a few small anomalies, including a scapula with a proximal length 0.4 mm larger than previously recorded, and also the length of the glenoid cavity was larger by 1.2 mm, whilst a metacarpal had a shaft diameter 1.7 mm larger than the ABMAP material. Calculation of withers height indicated that horses stood approximately 1.45 and 1.67 metres (14.5 and 16.4 hands) high at the shoulder (Table 22.1).

Table 18: Taxa representation (NISP) according to feature type at the M5 Slip Road site (HC 93).

Feature type	Ditch	Enclosure ditch	Linear feature	Post hole	Uncertain feature	Total
Horse	73			1		74
Cattle	195	12				207
Sheep/goat	77	2			1	80
Pig	14					14
Dog	135					135
Felis spp.	1					1
Cervus elaphus	1					1
Large mammal	460	24	2		1	487
Medium mammal	20	2			7	29
Total	**976**	**40**	**2**	**1**	**9**	**1028**

Table 19: Anatomical representation (NISP) at the M5 Slip Road site (HC 93).

Species	Horse	Cattle	Sheep/ goat	Pig	Dog	Large mammal	Medium mammal
Skeletal element							
Horn core		10	2				
Frontal	1						
Zygomatic		1					
Occipital Condyle					2		
Maxilla	1	1	1		2		
Mandible	5	21	11	2	2	3	
Loose tooth	10	42	29	10	5		
Atlas		3			1	2	
Axis		2			1		
Scapula	1	16	2		3	4	
Humerus	2	9			3	8	
Radius	5	13	2	1	2	1	
Ulna	2	4			2	2	
Pelvis	1	9	1		2	3	
Femur	1	9			4	3	
Patella	1	2					
Tibia	3	8	1		3	5	2
Fibula					1		
Carpal	8	1					
Calcaneum	1	7			1		
Astragalus	2	8	1		1		
Navicular cuboid		4					
Cuboid	1						
Metacarpal	6	2	8				
Metatarsal	3	15	17				
Metapodial	2	2			17		
Lateral metapodial	4						
1st phalanx	2	7	3		3		
2nd phalanx	3	2					
3rd phalanx	4	1	1				
Rib					12	3	1
Cervical vert					5	6	
Thoracic vert.					8	2	
Lumbar vert					7		
Caudal vert.					2		
Tooth frag.	5	6	1				
Skull frag.				1	1		
Limb frag.					2	28	23
Rib frag.					38	27	3
Vert frag.		2			5	57	

Table 20: Tooth eruption and wear data at the M5 Slip Road site (HC 93).

1) horse

P2	P3	P4	M1	M2	M3	Estimated age
			25.2			14+ yrs
					80	4-5 yrs
>54.3						>3 yrs
	32.1	33.4				10-14 yrs

2) cattle

P2	P3	P4	M1	M2	M3	Estimated age
		(k)	j	g	b	30-36 months
		c	k	g	b	30-36 months
			k	g	c	30-36 months
		(n)	l	g	d	30-36 months
		(n)				30-36 months
					d	30-36 months
					g	adult
		g	l	k	j	old adult
		g	m	l	k	senile
					k	senile
					k	senile
					k	senile
					l	senile

3) sheep/goat

P2	P3	P4	M1	M2	M3	Estimated age
		f	b			6-12 mths
		e	g	f		12-24 mths
		e	g	g	c	2-3 yrs
					e	3-4 yrs
					e	3-4 yrs
					e	3-4 yrs
					e	3-4 yrs
					f	3-4 yrs
			m	k	g	4-6 yrs
					g	4-6 yrs

Table 21: Incidences of taphonomy (%) at the M5 Slip Road site (HC 93).

Process	Gnawed	Butchered			Burned	
		cut	chop	sliced	calcined	charred
Horse	3					
Cattle	9	4	1	1		
Sheep/goat	4	1				
Large mammal	<1	<1	<1			<1
Medium mammal					3	

Table 22: Calculation of withers (shoulder) heights at the M5 Slip Road site (HC 93).

1) horse

	GL(mm)	Factor	Withers height (m)
Radius	339.5	4.34	1.47
Radius	335	4.34	1.45
Tibia	383	4.36	1.67
Tibia	348	4.36	1.52
Metacarpal	235	6.41	1.51

2) cattle

	GL(mm)	Factor	Withers height (m)
Metacarpal	182.5	6.19	1.13
Metacarpal	181	6.19	1.12
Metatarsal	221	5.45	1.20
Radius	301	4.3	1.29
Radius	304	4.3	1.31
Radius	303.5	4.3	1.31

** factors for cows and steers combined*

3) dog from context 63

	GL	Factor	Shoulder height (m)
Humerus	144.3	(x3.43) - 26.54	0.468
Radius	138.1	(x3.18)+19.51	0.458

Cattle were also represented by all parts of the body, with mandibles and major limb bones well represented. Calculation of the minimum number of elements indicated that scapulae were the most numerous bones representing at least seven individuals. Tooth eruption and wear data revealed two peaks in mortality – between 30 and 36 months, and also when senile (Table 20.2). Nineteen of the cattle bones belonged to a partial neonatal/foetal calf skeleton that was recovered from a ditch (context 63). The cattle sample displayed the highest proportion of gnawing with 9 % of the bones affected, and a smaller proportion possessed evidence for butchery in the form of cut, chop and slice marks (Table 21). One scapula had a perforation that was probably caused by a meat hook. Calculation of withers height indicates that cattle were between 1.12 and 1.31 metres (Table 22.2). The metrical data generally conformed to that held on ABMAP, although a humerus had a shaft diameter slightly smaller (by 0.3 mm), three radii had slightly longer greatest lengths (maximum difference 5.5 mm), and a metatarsal had a proximal breadth 0.6 mm larger and a distal breadth at the point of fusion 1.9 mm larger.

The sheep/goat assemblage consisted mostly of bones from the head and feet, with major limb elements being scarce. The metatarsal was the most frequent bone and indicates that a minimum of four individual were represented. Dental data suggested that most caprines were culled when aged between three and four years, although there was also some evidence for young and also older animals (Table 20.3). In addition, two metacarpals and three metatarsals belonged to foetal/neonatal lambs/kids. Gnaw marks were visible on a few caprine bones, and one had a cut mark. Metrical data was scarce, but generally conformed to measurements recorded from contemporary sites held on ABMAP, with the exception of a metatarsal that had a proximal depth smaller by 0.1 mm, and a shaft diameter 0.2 mm smaller.

The pig assemblage was small (n = 14), and was comprised mainly of loose teeth. The only postcranial bone was a radius that had a proximal epiphysis in the process of fusing, indicating that it belonged to an animal that had died at the age of *c*. 12 months. Dental evidence was scarce but indicated at least one adult pig, and canine teeth showed at least two sows and one boar were present.

The dog assemblage was almost entirely made up of a partial skeleton recovered from context 63 in ditch 60. The proximal epiphysis of the left tibia was in the process of fusing, which suggests that the animal was approximately 18 months old when it died (Schmid 1972). Calculations of shoulder height based on the factors devised by Harcourt (1974) suggest that it was between 0.458 and 0.468 metres high (Table 22.3).

A few bones displayed evidence of pathology including a cattle upper molar with unusual wear, probably due to the loss of the corresponding lower tooth. Other abnormalities occurred on the articulating horse metacarpal and carpals (grand cuneiform and scaphoid), in the form of pitting on articular surfaces and exostosis and swelling in the anterior and medial regions similar to that seen in cases of spavin. This suggests that the animal was probably lame.

Discussion and interpretation

The range of animals present in Romano-British deposits at the M5 slip road site was normal for this period. Variations in the relative frequencies of the major domestic food animals (cattle, caprines and pig) are often believed to reflect settlement types and their degree of 'Romanisation'. In southern Britain, Romanised sites such as *coloniae* and those associated with the military tend to produce high values for cattle and pig, while native, rural settlements are more often associated with a high proportion of caprines (King 1991). More recently, changes in taxa frequency have been seen as part of a general intensification of agriculture that might have been taking place at the time, rather than simply indicating dietary preferences (Hamshaw-Thomas 2000). The predominance of cattle may therefore be an indication of more Romanised diets, and/or that cattle were being raised to meet the demands of the urban population at nearby Gloucester. Meat and hides were also in demand by the military.

The low incidence of caprines was rather unusual when viewed alongside other rural sites in the region such as Dymock (Ingrem 2007), Barnsley Park (Noddle 1985) and Haymes (Noddle 1986), which suggests that mutton made a much smaller contribution to the diet than beef. Caprines were also less numerous than cattle at the wayside shrine at Portway near Gloucester (Noddle 1984). Both of these assemblages came mainly from ditches, however, and consequently it is also possible that taxa representation has been biased by size related disposal practices. Maltby (1985a) has shown that the remains of cattle and large mammals tend to be more numerous in ditches than pits, probably as a result of large mammal butchery and meat filleting taking place on the periphery of settlements. In contrast, it may have been more

common to cook mutton and pork on the bone, with the waste being deposited in more centrally located features within settlements such as pits. The preferential disposal of cattle bones in the ditch and caprine bones in pits was also thought to be a possible explanation for differences in taxa representation during different phases at Denmark Road High School in Gloucester (Powell and Clark 1996).

Horse bones are relatively numerous compared to most of the other rural sites discussed above although they occur in similar numbers at Portway (17 %) suggesting again that their relative frequency may be a reflection of disposal practices. Horses would have been valued for transport and traction and their bones are generally more numerous at rural sites than they are in towns where the general scarcity is often attributed to an increased emphasis on the acquisition of beef by urban populations (Maltby 1985b). Differences between military and native beliefs may also explain the higher frequency seen at rural sites. Evidence from the Netherlands suggests that horses were buried inside native settlements but not at military sites – a pattern thought to reflect the existence of a taboo against eating horsemeat in the Roman military world, but not among 'native' populations (Lauwerier 1999). It might also have reflected differences in social and cosmological beliefs and practices.

Body part representation at the Brockworth Bypass sites indicates that whole carcasses of horse, cattle and caprine were originally present, and it is probable that most animals arrived on the hoof. The scarcity of the major limb bones belonging to sheep/goat is not at odds with this idea, as primary butchery (removal of head and hooves) of medium size animals might also have taken place on the outskirts of the settlement, with the remainder of the carcass being cooked and deposited elsewhere.

Evidence that cattle and caprines were raised in the vicinity of the site was attested by the recovery of bones belonging to a neonatal/foetal calf and lamb/kid. Mortality profiles indicated that a good proportion of cattle were probably kept to provide good quality beef, although the importance of secondary products such as traction and milk was also indicated by the presence of very old animals. Similarly, as most caprines were apparently more than three years old when slaughtered, it appears that wool and manure were more important to the local economy than the production of prime mutton. At Dymock (Ingrem 2007) there was also evidence to suggest that wool was important, and at Denmark Road although ageing data was scarce, it appeared that older juveniles and adults were similarly preferred for slaughter (Powell and Clark 1996). Pig was poorly represented at the Brockworth Bypass sites, but the presence of bones belonging to sows suggests that pigs may also have been bred at the settlement.

Dog remains are commonly found on Roman sites, and partial skeletons are not uncommon. They would have been kept for hunting, guarding and as pets, whilst feral dogs might have been attracted to human settlements in order to scavenge. Their presence at the Brockworth Bypass sites is evidenced not only by the partial dog skeleton and few occasional bones, but also by gnaw marks visible on the bones of the major food animals which suggest that at least some food waste was available to them. Dog skeletons and articulated or partially articulated remains recovered from pits are often considered suggestive of ideological/ritual practices and 'structured' deposits (e.g. Black 1983), whereas those found in ditches, as was the case at the M5 Sliproad Site, are more likely to have represented butchery waste or the remains of animals that died from sickness or other natural causes.

Conclusions

The Romano-British assemblage from the M5 Slip Road site was generally comparable with those recovered from other rural settlements in the region, particularly those located close to the urban centre at Gloucester. Cattle were important for both meat and secondary products, and appear to have been kept in greater numbers than caprines, possibly in order to meet the demands of the urban population at Gloucester. Sheep were valued for wool and manure as well as meat. It is likely that taxa representation has been biased as a result of size-related disposal practices, and consequently caprines and pigs may have been kept in greater numbers than their remains suggest.

Water main diversion (Site BWM 94)

The animal bone assemblage from the water main diversion site consisted of 259 fragments recovered from contexts spanning the Roman to post-medieval periods (Table 23). The majority came from Roman features, with very small samples derived from medieval and post-medieval contexts. All of the samples were insufficient large to allow detailed analysis or provide meaningful information concerning economic and social practices, and consequently only a basic description has been provided here. In addition, a small amount of material was from deposits of very broad Roman or medieval date, so was not considered further.

Table 23: Taxa representation (NISP) according to period at the Water Main Diversion site (BWM 94).

Period	RB	RB/Med	Med	Post-med	Total
Horse	6	6	1	3	16
Cattle	33	11	4	1	49
Sheep/goat	5				5
Pig	2				2
Dog				1	1
Large mammal	77	32	7	8	124
Medium mammal		2		2	4
Unidentifiable	27	25		6	58
Total	**150**	**76**	**12**	**21**	**259**
Total identifiable	**46**	**17**	**5**	**5**	**73**
% identifiable	**31**	**11**	**3**	**3**	**49**

Table 24: Anatomical representation (NISP) at the Water Main Diversion site (BWM 94).

Species	Horse	Cattle	Sheep/goat	Pig	Large mammal
Horn core		1			
Tooth	3	11	2	2	
Mandible		3			9
Scapula	1	2			10
Humerus		1	1		
Radius		3			1
Ulna					2
Pelvis		3			1
Tibia			1		1
Calcaneum		1			
Astragalus		2			
Metacarpal		3	1		
Metatarsal	2	1			
Metapodial		1			
1st phalanx		1			
Tooth frag.					2
Limb frag.					6
Rib frag.					5
Total	**6**	**33**	**5**	**2**	**37**

Most of the bones belonged to cattle with horse, sheep/goat and pig also present. A minimum of two cows/steers were represented by elements belonging to most parts of the carcass. The majority of specimens were loose teeth (Table 24), which suggests that anatomical representation has been biased by the effects of density mediated preservation. The horse remains represented a minimum of one animal, and included a few loose teeth, a scapula and a metatarsal. The few caprine bones were from both fore and hind limbs, whilst loose teeth indicated the original presence of upper and lower jaws. Pig was represented solely by loose teeth.

Two cattle mandibles provided an indication of age at death. One contained a third molar that had just come into wear, indicating that one cow/steer had died at the age of 30-36 months; whilst another with more advanced wear belonged to an adult. All of the cattle bones that could provide ageing data had fused epiphyses, apart from a proximal cattle calcaneum that came from an animal that had died before reaching three years of age. Crown height of the horse teeth indicated that the animal(s) had died between eight and eleven years old.

The presence of dogs was indicated by gnaw marks visible on five bones, with both cattle and caprine remains affected. A number of bones displayed evidence of butchery, with five specimens possessing chops and a single example with cut and slice marks. All belonged to cattle or a large mammal.

Road strip and environmental bunds (Site BBP 94)

Area 2

Twelve specimens came from area 2, but only five pieces were securely dated and these were all from a Romano-British ditch. Cattle were represented by an upper molar and a calcaneum,

and sheep/goat by a tibia. An ulna belonging to a large mammal displayed evidence for butchery in the form of a chop mark.

Area 3

The small assemblage from area 3 consisted of 113 specimens, but only 12 were identifiable to taxa or size category and were securely dated. All of these were from Romano-British deposits, and included a cattle femur and a fragmentary horse pelvis.

Area 4

Eighteen pieces of animal bone were recovered from area 4, but these were all from a deposit only dateable to the 1st century BC/1st century AD. Cattle were the only species identified, and were represented by a radius and a scapula which displayed two chop marks.

Badgeworth round barrow (Site BRB 94)

Twenty-six identifiable animal bone fragments were recovered from the area of the round barrow. Horse, cattle and caprines were all represented, but none of the bone was from securely dated contexts. The stratigraphic and finds evidence all indicated disturbance and the mixing of deposits and artefacts that ranged in date from the Roman to post-medieval periods.

DISCUSSION

The Hucclecote villa complex and its landscape

Earlier archaeological work in the vicinity of the Hucclecote villa led to the suggestion that few enclosures were present within the area surrounding the main villa building (e.g. Atkin and Garrod 1989, 241), and that the Roman landscape was largely open pasture (Atkin 1989a, 5). This interpretation is now less likely. It is probable that in previous investigations the clay subsoil, and the use of narrow trial trenches, made the identification of features difficult. There are still virtually no recorded cropmarks of archaeological features within the immediate area, partly as a result of the poorly drained, unresponsive clay soils, and the formerly extensive remains of ridge and furrow obscuring earlier features. The area has not yet benefitted from the systematic examination of aerial photography undertaken by the English Heritage National Mapping Programme.

Although a predominantly pastoral economy may well have been in operation in the area, as suggested by the faunal remains from the Gloucester Business Park farmstead site (Hickling 2007a, 14), the presence of a corn drier indicates that arable cultivation also took place. Moreover, livestock farming would have taken place within a landscape of fields, paddocks, pens and trackways. The Romano-British boundary ditches found east of the Hucclecote villa at the M5 slip road excavation, together with the Roman and possibly Roman period linear features at area 3, and the results of the 1993 geophysical survey, all indicate that the local area contains significant and widespread evidence for land allotment and land division. No evidence was recovered, however, that could be interpreted as relating to the planned centuriation proposed by some earlier researchers (Berry 1949; Rawes 1979, 1981). The varying patterns of Romano-British ditch recuts over time are instead testament to changing patterns and foci of inhabitation within the landscape, with an apparent increase in the intensity of activity during the later 3rd and 4th centuries.

Further evidence for the organisation of the landscape immediately surrounding the villa has subsequently been provided by archaeological work post-dating the Brockworth bypass investigations (Fig 22). South of the 1993 geophysical survey (GSB 1993), in 1996, additional gradiometry and resistivity survey was undertaken across the Scheduled area of the Hucclecote villa and to the north of the Hucclecote Centre (GSB 1996), ahead of the proposed construction of a new rugby club house, playing fields and a car park. This revealed the outline of the main villa building, and what were probably the remains of ridge and furrow. Additional low resistance features appeared to be buried ditches including the probable southwards continuation of a double ditched trackway seen on the 1993 geophysical survey, a broadly WNW-ESE linear feature that lined up with ditches [105], [100] and [85] at the northern end of the Slip Road site; and another WNW-ESE feature that was on the same orientation as linear features [34] and [80]. Two curving north-south features *c*. 30 m apart were also notable, as these may have been the villa enclosure itself. They seemed to be on a different alignment and were thus potentially of a different date to the double ditched trackway.

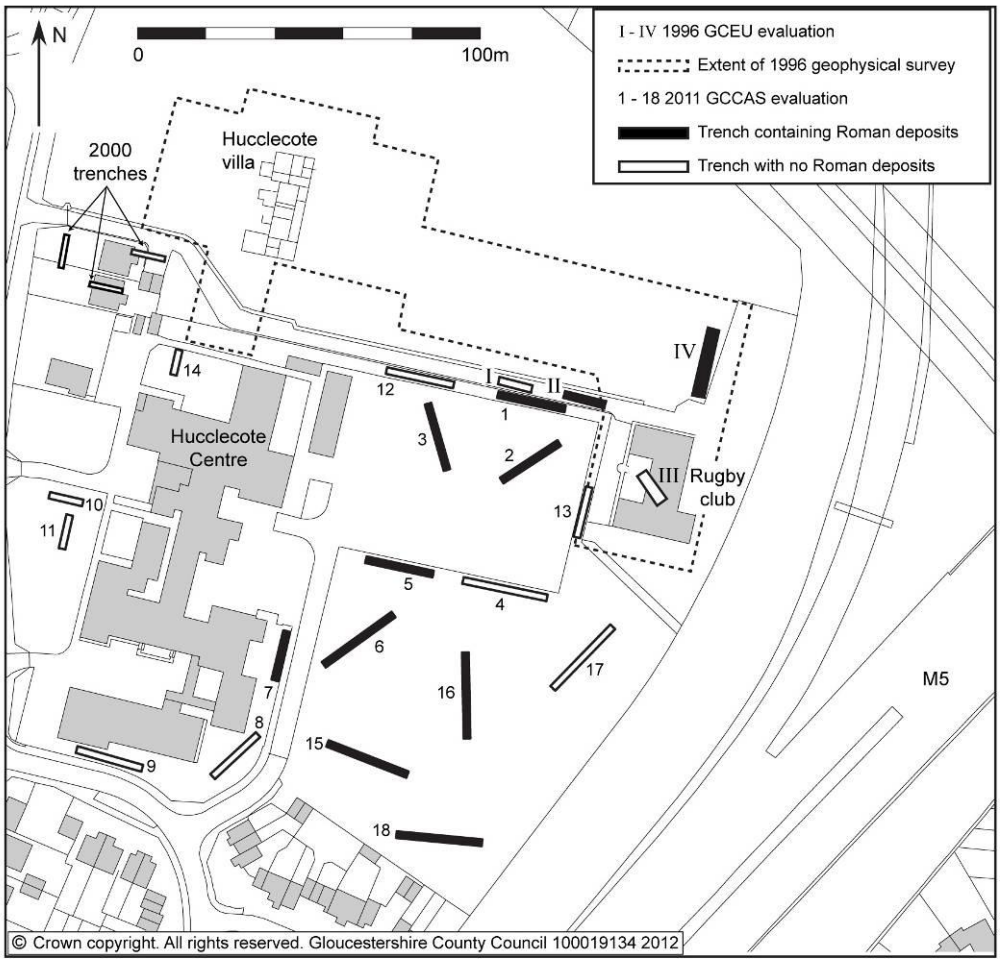

Fig. 22: Investigations around the Hucclecote Centre since 1994

Based on these geophysical survey results, an area in the east side of the grounds, to the west of the slip road site was evaluated (Greatorex 1997; Sermon 1997). Once again, it proved very difficult to discern cut features and to link those that could be defined between small trenches. Several ditches including those thought to identify a trackway and a small ditch that turned through right angles (similar to those recorded during the water main diversion trench) were recorded.

A subsequent development, to the north-west of the main Hucclecote Centre buildings, was evaluated in 2000 (Derham 2000). The three trenches produced no evidence for archaeological deposits and two houses, fronting Churchdown Lane, were built on the site.

In 2011 a further evaluation involved the excavation of 18 trenches around the Hucclecote Centre buildings, and the car park and field to their east. Trenches to the west and south of the Hucclecote Centre produced little evidence for Romano-British activity but those to its east produced evidence for an extensive rectilinear system of 2nd to 4th century Romano-British ditches interpreted as boundaries enclosing Romano-British fields or paddocks. Forty-three ditches were recorded in ten trenches and the complexity of the layout was such that identifying connections between the features in the various trenches was not possible. Tentative evidence for the presence of structures, in the form of two possible rubble wall foundations and a possible beam slot, was also recorded (Stratford 2011).

It has not proved possible to reconstruct and provide phase plans of the layout of enclosures around the Hucclecote Villa with any degree of certainty due to the previously mentioned issues of identification, uncertainty of dating, and the correlation of features across numerous small trenches.

Buildings and other structures in the villa landscape

In addition to information about land use in the vicinity of the villa, this group of archaeological investigations has also demonstrated the presence of buildings and other structures outside the main villa complex. The nature and purpose of the large structure with the timber piling and stone footings recorded in the sewer diversion site is unclear. The massive foundations indicated the need to support a significant downward weight load. Although the area does seem to have been relatively low-lying and boggy, accounting for the waterlogged preservation of the timbers, it also seems likely that this was a not a single storey structure. It may have been roofed with both ceramic and stone roof tiles, the weight of which would have been a significant factor in the need for sturdy foundations. Although pitched stone footings have been commonly found on higher-status Roman period buildings in Gloucestershire (e.g. Webster 1981; Williams 1971), there are no records of any timber piled footings outside Gloucester itself. This construction technique is known, however, from Roman buildings in Gloucester, York and London (e.g. Goodburn 1991, 1995). The fact that the densest concentrations of ceramic tile and bricks and stone tiles found during the evaluation and the Brockworth bypass project were found near the Hucclecote villa building (Summerfield 1989, see Durham and Shaffrey above) indicates the nature of the roofing of the higher-status buildings.

At *c*. 10 m in width and without any obvious evidence for flooring, internal subdivisions or fittings, this large structure does not appear to have had an obvious domestic function, although interpretation is, of course, hampered by the small extent that was actually exposed, and by the degree of later robbing. It is most probable that it was a large barn, perhaps even similar in scale (if not stature) to the aisled building excavated at Meonstoke in Hampshire (King 1996; King and Potter 1990), which seems to have had at least in part a storage function.

The *ligula* and ivory hair pin recovered during the Brockworth Bypass project, together with finds of shale bracelet fragments, a jet ring and painted wall plaster recovered from the 1988-89 evaluation (Summerfield 1989, 4-5), also suggest that the occupants of the Hucclecote villa were making clear statements about social identities and status through material culture. Nevertheless, the animal bone and pottery analyses indicate consumption patterns similar to smaller, non-villa farmsteads that have been excavated in the region. Despite the limited sample size, this may indicate that the inhabitants of the villa had adopted aspects of Romanised lifestyles (physical appearance, dress and architecture) but with less emphasis on others (diet and ceramic use), and overall it suggests a more modest establishment than many of the other larger villa complexes in the region. While those approaching the villa from Ermin Street may have been presented with a fairly grand central building, the presence of a line of ovens to its rear, with a barn to their east and a corn drier beyond, suggests that a primarily functional rather than ornamental landscape would have been visible.

T-shaped corn driers have been excavated on many Romano-British rural settlement sites (Goodchild 1943), especially enclosure groups and villa complexes. Similar structures from the region have been found at Barton Court Farm near Abingdon; Clear Cupboard near Farmington; The Bowsings, Guiting Power; Roughground Farm near Lechlade, Somerford Keynes and Longdoles Field, Cotswold Water Park; Vineyards Farm, Charlton Kings; Birdlip

Quarry; Totterdown Lane, Horcott; Frocester and Barnsley Park (e.g. Allen *et al*. 1993; Gascoigne 1969; Marshall 2004; Miles 1986; Miles *et al.* 2007; Mudd 1999; Pine and Preston 2004; Price 2000a; Rawes 1992; Webster and Smith 1982). They were probably most frequently used for parching or drying grain prior to storage, although spelt wheat spikelets in particular often needed parching before they could be de-husked and threshed. Sometimes the presence of germinating barley grains in such structures indicates the likelihood of malting taking place for brewing purposes (Reynolds and Langley 1979; van der Veen 1989). Another possible use may have been for drying flax after retting (Miles *et al.* 2007, 165). These structures were probably multi-functional. A reconstruction drawing was commissioned from Anne Leaver to allow for a visual interpretation of the Roman landscape at Hucclecote, incorporating the results of the archaeological work presented in this report, centred on the corn drier, with the villa and barn in the background (Fig. 23).

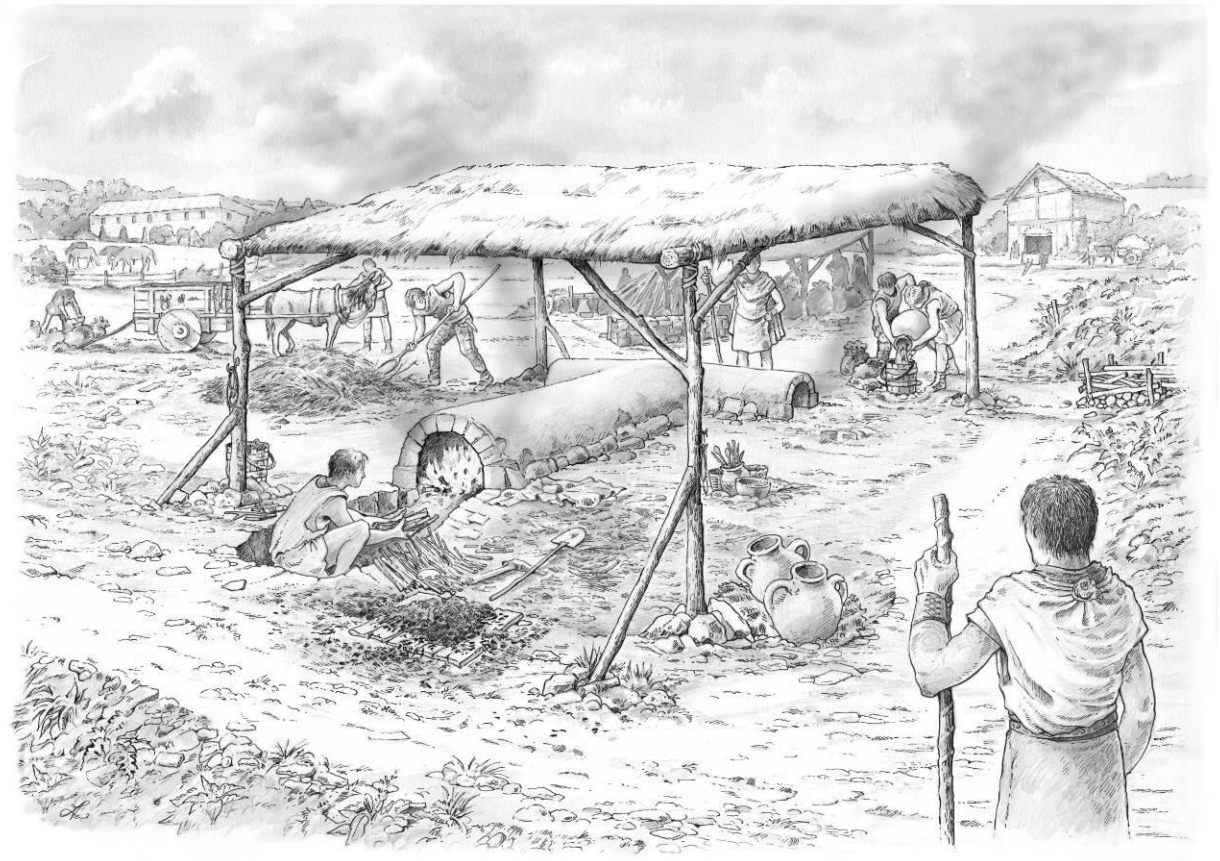

Fig. 23: Reconstruction drawing of the corn drier in use, with villa buildings in the background (Anne Leaver)

Placed or structured deposits

There were several groups of material excavated at the M5 slip road site that may not have represented just the casual discard of domestic rubbish, but which could have been more carefully or formally deposited. The ceramic tile placed flat on the base of ditch [70] next to the inverted pottery vessel may be one such 'structured' or 'formal' deposit that are increasingly recognised on Iron Age and Romano-British sites. The partly articulated dog bones found in ditch [60] and the articulated horse forelimb in undated ditch [79] might also have been examples of similar practices (e.g. Black 1983; Wilson 1999), although as Ingrem has noted (see above), more prosaic explanations for the presence of these animal remains are also likely and such deposits have to be carefully assessed (q.v. Grant 1991; Morris 2008).

Studies of the spatial and temporal distribution of artefacts, bone and burnt stone across Iron Age and Romano-British enclosure sites has often revealed patterns to this discard of material (e.g. Chadwick 2004, forthcoming; Hill 1995; Hingley 2006; Martin 2007; Millett 2007; Mudd 1999; Willis 1997; Woodward 2002). In addition to so-called 'special' or 'placed' deposits, this research suggests that everyday contexts of deposition were also affected by wider social understandings of landscape, materiality and cosmology. Many of these everyday practices seem to have persisted at a local level from the Iron Age through into the Roman period, whilst the many different social and ethnic groups who actually formed the 'Roman' army and administration would have brought many similar beliefs to Britain with them. Several researchers have commented on the impossibility of trying to separate ritualised beliefs and practices from more 'technical' or utilitarian actions in past societies (Bradley 2003, 2005; Brück 1999).

The post-Roman landscape

Many medieval or post-medieval plough furrows at the Sewer Diversion, M5 Slip Road, Water Main Diversion and road strip sites followed the line of some earlier Romano-British boundaries. At the M5 Slip Road site, other ridge and furrow was arranged at right angles to feature [45], itself on the same broadly north-south orientation as earlier ditches. This may suggest that features from the villa landscape were still visible in later centuries and influenced the layout of medieval field systems. Other furrows, however, cut across and obscured some Romano-British boundaries, which in addition to the clay soils might further explain why the extensive nature of the ditched boundary system was not visible on aerial photographs, or identified during earlier archaeological work. Both the east-west and north-south orientated ridge and furrow matched areas of these earthworks that had already been plotted in the vicinity (e.g. Parry 1991a, fig. 3). At the Gloucester Business Park, a major north-west to south-east orientated Romano-British ditch also seems to have persisted in use as a boundary into the medieval period (Hickling 2007a, 7).

Badgeworth round barrow

The unstructured nature of the mound material recorded at the Badgeworth round barrow raised some questions regarding the identification of this site as a Bronze Age funerary monument. However, the parish boundary between Brockworth and Badgeworth clearly diverts around the feature, indicating that it is not of recent origin. In addition, although recording conditions were far from ideal, the circular mound did appear to be surrounded by a ditch and this together with the (unstratified) presence of a fragment of human bone, a sherd of Bronze Age pottery, a non-local fossil reused as a bead and undiagnostic struck flint, suggests the feature is most likely to be a Bronze Age bowl barrow. Recent evaluation on the opposite side of the A417 has revealed up to six possible ring ditches, the most likely interpretation of which is ploughed out round barrows (Barber and Havard 2011, 37).

The two Roman coins recovered from the barrow might have been chance losses, but it is possible that they could have formed part of more meaningful, ritualised practices involved with the re-use or modification of older monuments during the Romano-British period (e.g. Thomas 2008; Williams 1998). The diversion of the parish boundary around the site indicates on-going significance and possibly the re-use of the monument in the early medieval period. In this light, it is perhaps also pertinent to consider the presence of a post-medieval horseshoe at the barrow. Again, this could have purely been happenstance, but it is interesting that in recent years archaeologists have begun explicitly to note finds of post-medieval or early modern horseshoes at earlier monuments (e.g. Chadwick 2008, 228; Chadwick *et al*. 2004, 103). This

may have represented some form of largely undocumented 'folk practice' designed to bring good luck, or alternatively an apotropaic rite to ward off evil (q.v. Merrifield 1987; Thomas 1971; Wilson 2000).

CONCLUSIONS

Although most investigations along the line of the Brockworth Bypass were small in scale, they nevertheless recovered additional useful information concerning Romano-British occupation in the area. In particular, they demonstrated that the Hucclecote villa was originally surrounded by systems of enclosures and fields, and that some of these boundaries may have persisted as landscape features as late as the medieval period. The large, stone-footed structure and the T-shaped corn drier suggest that significant elements of the villa's estate were dispersed across the landscape, whilst the find of the ivory hair pin indicates access to high status imported goods. Potential evidence for a prehistoric burial was also revealed through remediation work at the Badgeworth Bronze Age round barrow, and this included the highly unusual find of a fossilised marine mollusc burrow cast probably re-used as a bead. Roman respect or veneration of a prehistoric barrow may also be indicated by the coin finds.

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