LAND NORTH OF WESSEX CLOSE, TOPSHAM, NEAR EXETER, DEVON

(Centred on NGR SX 9583 8892)

Results of Archaeological Excavations - Technical Report

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On behalf of:
Heritage Developments (SW) Ltd

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The views and recommendations expressed in this report are those of AC archaeology and are presented in good faith on the basis of professional judgement and on information currently available.

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Summary

Archaeological excavations on land north of Wessex Close, Topsham, Exeter, Devon (NGR SX 9583 8892), was undertaken by AC archaeology in two phases between September 2015 and April 2017. The residential development area occupied approximately one hectare of pasture land to the northwest of Topsham.

Archaeological evidence on the site follows broadly from intermittent prehistoric settlement within largely agricultural land until the beginning of the Roman period, to planned and sustained occupation throughout the later 1st to early 4th centuries AD. This was followed by the demise and abandonment of the site in the first quarter of the 4th century and its gradual return to agricultural land until its use as parkland for The Retreat, a late 18th century house. The main interest in the site was the remains of a large stone-footed building of Romano-British mid-2nd century AD date. Its plan is that of an aisled hall, with a two storey central range flanked by single storey ranges, largely open internally or divided with light timber partitions. The southwestern range featured two substantial stone ovens and a small stone hearth. To the southeast of the building part of a probable furnace room from a bath-house was exposed. Other Romano-British features on the site comprised a series of roadside and enclosure ditches, wells and ovens. The use of the large building was at its height in the late 2nd and 3rd centuries and is of a type that is well-known in Roman Britain and is likely to have been used simultaneously for domestic accommodation, crop processing, industrial activities and storage. Its large size is unusual in the hinterland of Roman Exeter and this is almost certainly due to its prime position next to both the Exe estuary and the Roman road between Topsham and Exeter.

The finds from the site include sherds of prehistoric pottery, largely Middle Bronze Age in date, but also including some Late Neolithic Grooved Ware, and worked flint. There is a large collection of Romano-British finds including pottery, coins, metalwork (including jewellery), glassware, ceramic building material, slate tiles, stonework, and metalworking remains. Three cremations in Romano-British pottery vessels were recovered. Environmental remains included the remains of spelt wheat and oats, while the presence of fish bones indicate that fish sauce was being produced on the site. More exotic items, such as remains of imported foodstuffs and imported pottery, show wide-ranging contacts in the 2nd and 3rd centuries AD adding to the evidence for a suspected port at Topsham. A small assemblage of medieval and post-medieval finds includes pottery from the known historic processing of sugar adjacent to the site.

1. INTRODUCTION

1.1 Archaeological excavations on land north of Wessex Close, Topsham, near Exeter, Devon (centred on NGR SX 9583 8892; Fig. 1) were undertaken in two phases by AC archaeology between September 2015 and April 2017. They were carried out in advance of residential development. The excavations were commissioned by Heritage Developments (SW) Ltd and were required by Exeter City Council, as advised by their Principal Project Manager (Heritage).

1.2 The total site comprised three excavation areas (1-3) covering in total approximately 1 hectare (Fig. 2; Plates 1 and 2). Excavation area 1 (project code ACD1123) was a pasture field and area 2 (ACD1360) a compound area, both adjacent to Exeter Road and separated by Retreat Drive; each area having been the subject of interim reports (Farnell and Payne 2016; Farnell, Payne and Valentin 2016). Excavation area 3 (also with the project code ACD1360) is reported here for the first time and was a further pasture field adjacent to the south of excavation area 1. Further work continued on the site after building works had started when two areas formerly set aside for tree preservation were removed, the findings from this phase of works have been incorporated within the current report.

1.3 The site lies between approximately 8m and 12m above Ordnance Datum (aOD), with the underlying solid geology comprising Permian sandstone of the Dawlish Formation. The superficial deposits are recorded as river terrace deposits of sand and gravel (Quaternary) with tidal flat deposits of clay, silt, sand and gravel recorded around the rivers Exe and Clyst (www.bgs.ac.uk).

2. ARCHAEOLOGICAL BACKGROUND

2.1 The site is located in a general area where extensive evidence for archaeological activity has been previously identified. Exeter/Topsham Road represents the alignment of a Roman road extending from a probable Roman port at Topsham to the legionary fortress at Exeter, via the military establishment at St Loye's (Margary 1955, 108, route 490). A 1st century Romano-British farmstead has been previously excavated approximately 170m to the northwest (Jarvis and Maxfield 1975), while Roman material has been found close by to the southeast, east and south. Evidence for earlier activity includes Late Neolithic pits and flints from the excavations to the northwest (Jarvis and Maxfield 1975). Recent excavations by Wessex Archaeology further to the north have identified evidence for probable Iron Age activity in the form of roundhouses and associated features, while investigations by Cotswold Archaeology immediately north of the M5 have identified the remains of Roman military timber buildings, set back from the line of the Roman road (Andrew Pye, pers. comm.).

2.2 The site was subject to archaeological evaluation in separate phases (Wessex Archaeology 2014; Oakford Archaeology 2014) which established the presence of stone buildings, ditches, pits, postholes and building material of Romano-British date on the site, as well as a trackway with flanking ditches of post-medieval date (a former driveway to The Retreat; a 18th century house located to the south of the site, see Fox 1991).

3. AIMS

3.1 The principal aim of the investigation is to preserve by record any archaeological features or deposits present which will be damaged or destroyed by the development.

3.2 More specific aims were:

- To establish the full extent and date/phasing of the building identified during the evaluation and later to establish the full extent of the masonry building;
- To confirm the presence/absence of Roman military timber-footed buildings set back from the Roman road, and as identified during recent investigations to the northwest;
- To confirm the date and function of the parallel flanking ditches which potentially marked the line of a Roman road;
- To confirm to what extent any structural remains survive on the site, what is their form and function, how do they develop and when did they fall out use;
- To establish the full extent of Roman activity on the site, with particular reference to the features and finds identified during the earlier evaluation;
- To establish the presence/absence of prehistoric remains;
- To establish the nature of the activity of any hitherto previously unrecorded archaeological remains;
- To recover any environmental evidence from archaeological features or deposits;
- To identify any artefacts relating to the occupation or use of any hitherto previously unrecorded archaeological remains; and,
- To provide further information on the archaeology of Exeter/Devon from any archaeological remains encountered.

4. METHODOLOGY

4.1 The excavations were undertaken in accordance with Written Schemes of Archaeological Work prepared by AC archaeology (Valentin 2015 & 2016). They comprised open area excavations in two main phases taking in approximately 1 hectare of the site. A small number of areas were set aside for the protection of trees to be retained.

4.2 The removal of overlying deposits within the trenches was undertaken in 20cm spits under the control and direction of a site archaeologist. Stripping by mechanical excavator ceased at the level at which archaeological deposits or natural geology was exposed.

4.3 The archaeological works were conducted in accordance with the Chartered Institute for Archaeologists' *Standard and Guidance for Archaeological Excavation* (2014) and all features and deposits revealed were recorded using the standard AC archaeology pro-forma recording system, comprising written, graphic and photographic records, and in accordance with AC archaeology's *General Site Recording Manual, Version 2* (revised August 2012). Detailed sections and plans were produced at a scale of 1:10, 1:20 or 1:50 as appropriate. All site levels relate to Ordnance Datum. Spoil heaps were scanned both manually and by metal detector for displaced artefacts.

5. RESULTS

5.1 Introduction

Features of archaeological interest were observed across the whole of the stripped area and the results are described in detail by chronological period below (Fig. 2). Natural subsoil was revealed beneath 0.3-0.8m of topsoil and subsoil and comprised mid reddish-brown sandy silty loam with localised patches of gravel.

5.2 Prehistoric (Fig. 3)

Early Neolithic pit F376 (Section Fig. 4a)

A single pit of probable Early Neolithic date was exposed approximately 16m to the southwest of Bronze Age ditch F458 (see below). It was sub-circular and measured a maximum of 1.5m across and 0.65m deep with steep sides and a concave base. It contained a series of six fills (377-82). First fill 377 was an apparently deliberate dumped deposit of charcoal-rich material which produced 51 flakes of worked flint and chert. It was overlain by a lens (378) composed of mid reddish brown sandy silt-loam resulting from natural erosion. Third fill 379 was a second dumped deposit of charred material. A very large tabular boulder of reddish sandstone had been placed on top of charcoal rich deposit 379, which also produced a further 13 flint and chert flakes. Fills 380-82 were composed of mid reddish-brown sandy silt-loam and derived of either natural processes or deliberate infilling with relatively clean material. The flint assemblage was clearly *in situ* and of Early Neolithic character. It included a large number of spalls from retouch, which is indicative of flint working occurring in the near vicinity.

Neolithic pit F1337 (Section Fig. 4b)

A pit located in the southeast corner of the site contained ten pieces of worked flint of probable Neolithic date. It was circular in plan measuring 0.80m in diameter by 0.34m deep with steep sides and a flat base. It contained two fills with the flint in the lower fill (1338) which comprised a dark reddish-brown silty sand, above which was upper fill 1339 comprising a light reddish-brown silty sand which surprisingly contained a single sherd of post-medieval pottery which should be regarded as intrusive in this context.

Middle Bronze Age ditches F261 and F458 (Sections Figs 4c-d)
Two northwest to southeast aligned ditches extended across the site close to the northeastern limit of excavation. Ditch F261 measured 28.6m long and 1m wide with rounded terminals at either end. Excavations along its length showed it to comprise three interconnected segments with U-shaped profile. It contained a series of two fills comprising a lower fill (263) composed of reddish-brown silty sand, overlain by a fill (277) similarly composed of reddish-brown silty sand, but with inclusions of locally derived rounded pebbles and cobbles varying in frequency from common to frequent. Five worked flints and 69 sherds of Middle Bronze Age pottery were recovered from the lower and upper fill. Ditch F458 was exposed over a distance of 21.5m. It continued beyond the limit of excavation to the northwest and terminated to the southeast where it had been cut by post-medieval ditch F1008. It measured 0.86m wide with a U-shaped profile. It contained a sequence of two fills comprising a lower fill (439) composed of reddish-brown silty sand with common rub-rounded pebbles and cobbles, overlain by an upper fill (440) of mid greyish-brown silty clay with occasional gravel. A total of 179 sherds of Middle Bronze Age pottery was recovered from both the upper and lower fill.

Iron Age ring gully F307 - Structure 1 (Detailed plan Fig.5a, sections Figs 5b-f; Plate 3)
Slight remains of a ring gully was uncovered cut by Romano-British ditches F108, F109, F126 and F309, and a modern drain. Owing to poor preservation, it comprised an approximate semi-circle with a maximum extrapolated internal diameter of 11.3m. One surviving terminal possibly formed the southwestern side of a southeast facing entrance. The eastern side of the gully had been partly removed by ditch F109, with the remainder, including the northeast terminal, having possibly been lost to ploughing. No associated postholes were exposed.

The gully was shallow, measuring 0.7m wide and up to 0.2m deep with a shallow concave profile. It contained a primary fill composed of mid greyish-brown sandy silt-loam with an upper fill was present in some of the excavated segments. Finds recovered included a fragment of tobacco pipe stem and several small pieces of ceramic building material. Clearly these finds are intrusive.

Iron Age pit F348 (Detailed plan Fig. 6a, section Fig. 6b)
A large possible storage pit was cut by Romano-British ditch F109. The pit was sub-circular in plan measuring 2m across and 2.4m deep, with a steep to undercutting ‘beehive’ or ‘bell’ shaped profile. On the northeast side the profile was irregular and stepped due to side collapse following abandonment. It contained a series of seven gravel-rich fills (349-52 and 520-22). The first four fills (520-22 and 349) were composed principally of naturally derived cobbles, gravels and sands resulting from erosion and side collapse. All were sterile and increasingly mineralised towards the base of the feature. Three upper fills 350-52 were composed of mid reddish-brown, soft, sandy silt-loam with common to abundant, poorly sorted sub-rounded and rounded gravel, pebbles and rare cobbles. As with the lower fills they lacked archaeological inclusions and finds. The feature has the characteristic form of an Iron Age storage pit, commonly found on Iron Age settlement sites though rarely recognised in Devon. Typically they would be expected to produce a significant quantity of finds and environmental material, however, in this case it seems likely that following a collapse of the pit edge it was rapidly backfilled with clean material rather than standing open to backfill gradually over a longer period or being reused for waste disposal.

5.3 Romano-British – phase 1 (Fig. 7)

Ceramic evidence dates Romano-British phase 1 to the mid-1st - 2nd century AD. Within this period two distinct groups of features were identified comprising a group of large ditches, whose focus lay beyond the limit of excavation to the north and east (phase 1a), and a rectilinear layout of plots defined by smaller ditches, which encompassed most of the excavation area and continued beyond to both the northwest and southwest (phase 1b). While the date range for pottery recovered from across both phases 1a and 1b was consistent, the distribution of sherds was heavily weighted towards phase 1b. Phase 1b gully F1019 in particular produced a large assemblage totalling 118 mid to late 1st century sherds and the majority of hand dug excavations

into this group of ditches yielded small groups of 1st to 2nd century pottery. By contrast, despite a considerable volume of hand excavation into the much larger ditches of phase 1a, a mere eleven sherds of mid-1st to 2nd century pottery were recovered, four of which were residual in upper fills.

The chronological sequence of phases 1a and 1b is most usefully evidenced in the broader context of the site and its development. It is clear that the two sub-phases represent significant changes in the division and use of land. Phase 1a has the character of an extensive agricultural enclosure, or group of enclosures, lying principally to the east and northeast of the site. The paucity of finds in the lower and middle fills suggests that occupation or settlement activity was not occurring in the immediate vicinity. In phase 1b the focus of activity had shifted considerably to the southwest and the nature of the enclosures exposed has more affinity with plots laid for logistical or administrative purposes. These plots were associated with clear, if somewhat dispersed, evidence for occupation including the presence of pottery in the ditches, a number of pits containing pottery and glass, two wells and fragmentary evidence of post trench structures. Furthermore, direct continuity between phase 1b and Romano-British phase 2 seems likely. While the exact positions of plot boundaries had moved during phase 2 the overall scope and layout remained broadly the same, particularly the close alignment of phase 1b ditch F456/F126 and phase 2 ditch F109. The ceramic evidence also appears to show continuity of occupation into phase 2.

Contradictory to this assessment of site chronology was the observed stratigraphic relationship between phase 1a ditch F108 and phase 1b ditch F126/F456. Ditch F108 visibly overlay F126/F456 in plan and while investigation of the relationship (shown on Fig. 8a) exposed a diffuse and uncertain horizon between fill 374 of ditch F456 and fill 423 of ditch F108, the overall impression was of the fills of F108 overlying and truncating the fill of F456. An explanation of this apparently anomalous piece of evidence was found in the close examination of the fill sequence in ditch F108. The lower and middle fills were the result of initial edge erosion followed by deliberate infilling. The upper fills, however, appeared to have been introduced into the top of the feature as a result of subsidence of the rapidly formed and unconsolidated lower fills. These upper fills comprised, most significantly, a layer of gravel, which extended the length of the feature and which when exposed in plan had the distinct appearance of a metalled surface. It is most likely that this layer is the remnants of a metalled track or road constructed during Romano-British phase 2. The top fills of F108 contained a quantity of roughly hewn grey sandstone blocks, which strongly suggest that despite a lack of datable pottery, the formation of these upper fills is contemporary with the collapse of adjacent Structure 3 (Romano-British phase 2-3). It can be argued therefore that while ditch F126/F456 may have originally cut into the top of the backfilled ditch F108, the formation of 'tertiary' deposits resulting from the subsidence of a later metalled track surface and subsequent infilling with demolition material had obscured and disturbed it.

Phase 1a (Plan Fig. 7, sections Figs 8a-c; Plates 4-5)
Four ditches (F108, F309, F183 and F272) appear to represent the periphery of a potentially extensive layout of fields or enclosures extending to the northeast and east of the site boundary. Ditch F108 extended across the site in a gentle arc from northwest to southeast and was exposed over a distance of 133m. To the northwest it continued beyond the limit of excavation, while to the southeast it had been cut by later Romano-British ditch F107. It measured a consistent width of 2-2.3m and depth of 1.1-1.2m with steep sided slightly convex sides and a narrow V-shaped base. The broadly consistent fill sequence was well represented by the section presented in Fig. 8b. It contained a series of eight fills whose formation was the result of a series of events which represented activity throughout the Romano-British period. The lower fill (324) was composed of mid reddish or pinkish-brown, coarse sandy silt loam with frequent fine gravel derived from initial edge erosion. Overlying this primary fill were three relatively sterile fills (325-27) composed of mid brown sandy silt-loam with common to abundant poorly sorted gravel throughout. Rather than representing further gradual infilling, the composition of these deposits is suggestive of

rapid deliberate backfilling with clean material, possibly derived from an up-cast bank. This bulk infilling was overlain by three thin layers comprising rounded gravel and pebbles (328) overlain by a thin layer of yellowish clay (329), in turn overlain by a second thin layer of gravel (330). These layers had the appearance of a deliberately lain gravel surface which had subsided into the top of the ditch. This surface was most likely related to a track established in the mid-2nd century (Romano-British phase 2), flanked by ditches F107 and F109. Upper gravel layer (330) has the appearance of patching or resurfacing, possibly as subsidence of the track occurred. The final fill (331) sealed gravel layer 330 and was largely the result of gradual soil formation.

While the lower fills were consistent along the length of the ditch, localised variation was recorded in the upper fill sequence at the far northwest end. Here the lower fills (368-370) were overlain by dumped deposits (423 and 371) containing abundant charcoal and iron smelting slag. Charcoal from this deposit was almost entirely of oak wood fuel (Challinor, below). The upper fill (372) once again appeared to result from gradual soil development. The gravel layer identified elsewhere was not noted here. It is possible that its presence was intermittent due to variable wear during use and the extent of subsidence of the underlying ditch fill which had resulted in its preservation elsewhere. Despite the substantial size of the ditch and excavation of six slots along its length, the lower and middle fills produced only seven sherds of Exeter Flagon, six of which were in a closely associated group in fill 370 at the far northwest end of the ditch. Exeter Flagons were produced principally in the fortress at Exeter, although production is thought to also continue into the 2nd century. A further four 1st century sherds were recovered from the upper or 'tertiary' fills. These are considered to be residual in these contexts due to the additional presence of building stone that is not otherwise present on site until Romano-British phase 2, where it was used in the construction of Structures 3 and 4.

Ditch F309 was aligned northeast to southwest and was exposed over a distance of 9m. It continued beyond the limit of excavation to the southwest, and terminated to the north where it had also been cut by later Romano-British ditch F109. It measured 1.8m wide and 1.12m deep with steep slightly convex sides and narrow V-shaped base (Fig. 8a). It contained a series of two fills (269-70) composed of greyish-brown and reddish-brown clay loam with frequent well distributed gravel and pebble inclusions becoming abundant towards the base. Four very small fragments of ceramic building material were recovered from the lower fill (296). The character of this ditch is highly reminiscent of ditch F108 described above. Once again its main fill appeared to have been rapidly deposited most likely in the earlier Roman period. Although the tertiary deposits in F108 were not clearly recognised, small fragments of possible Roman building stone were noted from the very top of the upper fill (270) that are suggestive of deposition in the later Roman period.

Ditches F183 and F272 were parallel and aligned east-northeast to west-southwest. Both were exposed for a length of 13.5m and continued beyond the limit of excavation to the northeast. At its southwest extent F272 ended in a slightly irregular termination, while F183 had been cut by later Romano-British ditch F107. Both were of similar dimensions measuring approximately 2.2m wide and between 0.56m and 0.86m deep with a wide U-shaped profile. Fills of both were composed of relatively sterile sandy loam with occasional to frequent gravel and pebbles. Two further sherds of Exeter Flagon, most likely produced in the 1st century AD, were recovered from the fill of F183. A possible relationship between F183 and F108 had also been lost, however it seems reasonable to suggest that the two intersected and are likely to be contemporary.

Phase 1b (Plan Fig. 7, detailed plans and sections Figs 9-13)

<u>Buried soils 1050 and 1098</u>
Two areas of thin buried soil were broadly contemporary with features recorded in phase 1a. Layer 1050 survived principally within and in the immediate vicinity of the remains of a large stone footed Roman building - Structure 3. It seems likely that the presence of stone foundations

has preserved this layer from plough truncation which has affected deposits elsewhere. A very small number of finds were recovered from this layer including two worked flints, two sherds of prehistoric pottery, two of Romano-British pottery and a fragment of Romano-British tile. Further to the south, diffuse soil layer 1098 had survived in the vicinity of a group of later stone post pads. It produced a coin of Claudius (dated 46-47AD).

1st century enclosures (Fig. 7; Plate 6)
A rectilinear arrangement of enclosures was aligned northwest to southeast broadly in line with the present day Exeter road. It comprised an outer ditch, composed of F126/F456 on its northeast side and F1004/F1009 to the southwest, with a northeast to southwest aligned ditch (F457) dividing the area into two adjoining rectangular enclosures. Ditch F457 continued beyond the southwest enclosure boundary F1004 for approximately 5m. Investigation of the junction between the two ditches showed that later pit or post-pad F1113 had largely removed the relationship. However, where observed, the fills of the two ditches were largely indistinguishable from one another supporting the interpretation that they were contemporary and had backfilled through the same process. Ditch F126 formed a corner at its northeast end, from where it continued to the southwest beyond the limit of excavation, apparently defining the eastern extent of the area enclosed. A further ditch to the southwest (F1017/F1120), parallel to ditch F1004/F1009, formed an apparent wide avenue and possibly further land enclosure to the south.

Relatively consistent dimensions of 0.9-1.1m wide and 0.3-0.45m deep were recorded across this group of ditches, with moderate to steep V-shaped profiles. Ditches typically contained a single homogeneous fill composed of mid to pale yellowish-brown sandy loam with rare inclusions of rounded pebbles and cobbles. They appear to have infilled by a process of gradual weathering and soil formation rather than deliberate backfilling or dumping.

The eastern-most of the two exposed enclosures had been further sub-divided into smaller rectangular plots. Only fragmentary remains of these subdivisions survived having been laid out by small ditches or trenches which had been partially lost to plough truncation. Five segments of ditch were recorded (F557, F561, F1014, F1015 and F1019) all of which petered out at their extents, unless otherwise truncated by later features. Features F561, F1019 and F1014 formed a segmented linear boundary which sub-divided the enclosure across its narrow axis. F1015 and F1018 extended at right angles to this boundary creating further sub-division on the axis of the surrounding enclosure. F557 was more isolated and had been severely truncated by later Romano-British and post-medieval features. Its character and alignment were however consistent with the other four. All were small, with dimensions up to 0.3m wide and 0.1m deep, U-shaped profiles and fills largely reflecting the surrounding geology. F1019 had been used to dispose of an unusually large quantity of broken pottery, pointing to nearby occupation. A total of 118 sherds including Exeter Flagon sherds, samian and Black-Burnished ware of 1st century date were recovered from fills 1192 and 1196 within a 2-3m stretch towards the southern end of the feature. Some evidence of post settings was recorded in F1015 (Fig. 9) suggesting the possibility that at least some of these internal plot divisions may have been post trenches, perhaps with some individual plots being fenced around rather than simply divided by open gullies. F1015 was undulating along its length and had the appearance in plan of interconnected segments giving the impression of a series of truncated postholes. Despite very slight survival of this feature, which measured only 0.15m at its deepest, five former post settings (F1176, F1178, F1180, F1182 and F1184) were tentatively identified by examination of the longitudinal section. Three (F1178, F1180 and F1182) were closely spaced at approximately 0.6m centre to centre. Additional posts may have been present but were not recognisable.

In area 2, undated ditch F2029/F2017, was well placed to form the northwest extent of the two exposed enclosures. Its V-shaped profile was certainly Romano-British in character and, although its dimensions were slightly larger than might be expected, its fills were relatively pale and sandy with few inclusions. The absence of pottery also seems more in keeping with the

earlier Roman period where generally low quantities of pottery were recovered by comparison to features of the 2nd to 3rd centuries which yielded relatively abundant assemblages. The association of this feature to Romano-British phase 1b must remain uncertain.

Possible 1st century post trench structure (Structure 2) (Fig. 10; Plate 7)
Fragmentary remains of a truncated possible post trench structure was exposed in area 2. Three shallow linear trenches (F2038, F2069 and F2079) were arranged in an incomplete, but broadly rectangular, arrangement encompassing an area measuring approximately 23m by 10m extending back from Exeter Road on a northeast to southwest alignment. They comprised the northeast side (F2038) and the southwest and partial southeast sides (F2069 and F2079) of the rectangle. Complete excavation of the fills produced ten worked flints in addition to two sherds of Romano-British pottery from F2069, one dateable to the 2nd century onward, and a single prehistoric sherd from F2079. The northwest and remaining southeast sides were not present and may have been lost to later disturbance. In addition, a posthole (F2022) was located close to the northwest extent of linear trench F2038. It contained packing of slate and river cobbles and had been truncated by a post-medieval ditch (F2005). It may be related to the possible post trenches.

Cremations (Fig. 11)
A pair of urned cremations 1290 and 1396 were exposed in the southern corner of site to the south of ditch F1017. Both had been placed into a small pit just larger than the vessel, apparently backfilled with the excavated up-cast material. Cremation 1290 was contained in a variant South Devon micaceous ware jar of probable mid-1st to early 2nd century date, recovered from pit F1275 (plan, figs, 11a and b, section 11c). Cremation 1396 was contained in a Black-Burnished ware jar of probable late 1st to 2nd century date, recovered from pit F1394. The urns were removed from site intact and the cremated human bone was excavated carefully under laboratory conditions (see Coles, below).

In Area 2, a third cremation (2086) also containing in a Black-Burnished ware jar was recovered from fill 2014 of post-medieval field boundary F2005. The surprising partial survival of the vessel and its contents, suggests that although having been displaced, it had not been moved far from its primary context.

Wells F1406 and F2048 (Fig. 12)
Two wells were associated with activity in the 1st to early 2nd century AD. The first (F1406) was positioned towards the west end of the eastern enclosure. It was circular in plan, measuring 1.35m in diameter and had been excavated to a depth of 5m with straight, near vertical sides. A black deposit (1489) present around the cut margin from a depth of 2.2m had the appearance of a degraded organic lining to the well. The basal fill (1486) was below the present day water table at between 4-5m deep. It was composed of soft, loose, yellowish-brown silty sand with frequent rounded pebbles and cobbles towards the base. It was a sterile fill and despite waterlogging no organic preservation was present and no finds were recovered. Overlying fill 1485 was 0.5m thick. It was similarly sterile and composed of soft yellowish-brown silty sand, but contained few inclusions and was present above the existing water table. Fill 1407 was 3.5m thick and represented the principal infilling phase of the well. Composed of greyish-brown silty sand with occasional sub-angular and sub-rounded stones, it was once again relatively sterile in nature with the few finds recovered limited to small CBM fragments and an undiagnostic Black-Burnished ware sherd. The final fill was a capping of roughly hewn greyish sandstone blocks (1407). The nature of the infilling material points to deliberate decommissioning of the well and rapid infilling. It does not appear to have stood disused and open or used for waste disposal. The upper layer of masonry capping (1408) appears contemporary with the adjacent stone building (Structure 3) constructed in the 2nd century.

Well F2048 was located in area 2. It was round in plan and measured 2.3m in diameter at the top and was excavated to a maximum depth of 1.8m below existing levels; the base of the feature was not achieved due to the high water table encountered at a depth of 0.8m. The fill exposed (2049) was relatively homogeneous and composed of dark reddish brown silty loam with common gravel inclusions. Three mid-late 1st century samian sherds were recovered from this upper fill.

Pits F488, F554, F1436, F1449 and F1507 (Figs 13, 18d)
Five pits of diverse character were exposed within the areas of the phase 1b enclosures. Pit F1436 was located in the western enclosure. It was circular, measured 1.58m across and 0.6m deep with steep, slightly irregular sides and concave base. It contained a lower fill (1438) composed of dark greyish-brown silt loam with common charcoal flecks and an upper fill (1437) composed of mid reddish-brown sandy clay loam. A relatively rich assemblage of 1st – 2nd century or *Flavian* ceramics and glassware was recovered, principally from the lower fill (1438). While the finds may suggest waste disposal, the isolated nature of the pit makes it likely that this was a secondary function. The profile of the pit cut was quite stepped on one side and irregular. This could be the result of an unfinished excavation, or perhaps an aborted well. Disposal of domestic waste may therefore have been an opportunistic act.

Pits F488, F554 and F1449 were located in the southeast enclosure. All three had been cut by features related to Structure 3 (Romano-British phase 2). Little remained of the original extents of F488 which had been cut to the northwest by wall footing F343 and to the southeast by post-medieval ditch F1008. Where its edge survived it appeared circular or oval in plan. It was shallow, measuring 0.26m deep and although truncated on three sides was unlikely to be more than 0.8m wide. It contained two fills (489-90) composed of greyish-brown silty loam with charcoal flecking towards the base. Its interpretation and its relationship to adjacent ditch F557 (also truncated by wall footing F343) remains uncertain. However, its apparent size and proximity to ditch F557 suggests that one feature may have succeeded the other. Dating from finds was limited, however mid-late 1st century sherds including a samian sherd stamped 'OF ABITI' (*Habitius of La Graufesenque*) allocated to adjacent context 487 (segment of Structure 3 stone wall footing), are likely to have originated in the fills of F488 which it cuts.

Pit F554 was circular in plan and small, measuring 0.58m across and 0.24m deep. It contained two fills comprising a lower fill (556) composed of dark greyish-brown silty loam with frequent charcoal flecking and an upper fill (555) composed of mid reddish-brown sandy silt-loam. Roofing tile and a sherd of 1st – 3rd century pottery were recovered from the upper fill. The fills of this pit had been cut by Romano-British phase 3 oven F553.

Pit F1449 was oval in plan measuring approximately 1.19m long by 0.6m wide and 0.6m deep, with near vertical straight sides and a flat base. Its three fills comprised a thin band (1458) of mid brown loamy sand at the base, overlain by a distinct layer (1451) of locally derived water worn cobbles up to 0.14m thick in a mid reddish-brown sandy clay matrix. Upper fill 1450 was composed of mid brown sandy clay. Fills 1451 and 1450 had been cut by Structure 3, stone wall footing F1459. A small fragment of samian recovered from lower fill 1458 was dated broadly to the 2nd century. While the pit exhibits a very particular form and fill sequence, its purpose is not clear.

Pit F1507 was located in the southeast of the site. It was rectangular in plan measuring 1.8m long and 1.2m wide with vertical sides and was excavated to a depth of 1.35m deep, but not bottomed. The lowest fill (1528) was 'cessy' in character and composed of sticky light greenish-grey and lenses of yellowish-brown silt and sandy silt. Above this were two layers (1526-7) of redeposited natural probably derived from erosion of the sides. On abandonment, the cess pit appears to have been used for rubbish and this was characterised by layers 1522-1525. In particular, context 1522 contained several sherds of amphora, a sherd of Black-Burnished ware

and 63 hobnails which appear to have derived from a single adult shoe, there was also a piece of blue/green glass from a ribbed bowl and further sherds of amphora from 1524.

5.4 Romano-British – phase 2 (Fig. 14)

The ceramic dating evidence suggests a brief hiatus in activity at the end of the 1st century and beginning of the 2nd century AD. Significant development of the site occurred in the mid-2nd century with new enclosures and a possible road established, closely following the 1st century layout, the founding of a large stone footed aisled building (Structure 3) within a large enclosure. A second building (Structure 4), possibly representing the furnace room of a putative bathhouse, lay largely beyond the limit of excavation. Cess pits and wells were also present.

Roadside ditches and road surface (Fig. 15)

Remains of a possible road or track extended across the site from northwest to southeast and formed the northeast boundary to a series of ditched enclosures arranged to the southwest. It comprised parallel flanking ditches F107 and F109 and, tentatively, the remnants of a metalled surface, surviving as a gravel layer in the upper fills of phase 1a ditch F108 due to subsidence into the soft underlying ditch fills. The appearance of this layer in section was inconsistent along the length of F108 and not always readily identified, however its exposure in plan (context 560 on Fig. 15b) revealed a convincing surface on the northeast edge of the track, where larger cobbles appeared to have been used as possible kerbing. The width of the trackway would have been approximately 8m, measured between the internal edges of the two flanking ditches.

F109 formed the southwest side of the possible track. It extended parallel to, and within 0.5m of phase 1b ditch F126/F456, only cutting across the earlier ditch where F126 turned to the southwest at its southeast extent. The closeness of these two ditches strongly suggests direct continuity from one phase to the next. Its form was typical of a roadside drainage ditch, measuring approximately 2m wide and 0.80m deep with moderately sloping straight sides and a V-shaped base. It contained up to five fills (contexts 333-7 on Fig. 15a) composed principally of mid to dark brown and reddish-brown sandy loam with rare to common gravel and pebble inclusions. Fills appeared to have formed by gradual infilling and produced fragments of Romano-British roof tile, roofing slate and building stone from the lowest fill and throughout. The pottery assemblage recovered from nine hand excavated slots was dominated by sherds of the 2nd to early 3rd century.

On the northeast side of the track, ditch F107 was significantly larger. It measured 1.95-2.2m wide at the top, and had been dug to a depth of up to 2.25m. In profile it had steep, slightly convex sides, becoming near vertical from a depth of around 1m and a narrow flat base measuring 0.5m wide. The lower fills comprised two to three thick deposits (contexts 217-18 on Fig. 15a and 156-8 of Fig. 15c) composed of relatively loose, clean redeposited natural gravel, pebbles and cobbles. This gravel was clearly derived from the surrounding natural, however the large volume of material and visible tip lines indicate that rather than being deposited through erosion these fills are the result of deliberate backfilling, most likely with the up-cast material from excavation of the ditch. The clean, unmixed nature of the gravels suggests that potentially little time had elapsed between excavation and backfilling and the consistent appearance of this deposit along the length of the ditch is suggestive of a single event. A sharp horizon was observed with the upper fills (219-21 on Fig. 15a, 159-60 on Fig. 15c) which were humic by contrast and appeared to be the result of gradual infilling by natural processes of soil formation. They were composed largely of mid reddish-brown silty sand with rare to occasional sub-rounded gravel pebbles and cobbles. Some evidence for the maintenance of the upper portion of this ditch was recorded and is presented on Fig. 15a where fills 219 and 220 appear to lie within successive re-cuts, intruding on lower fill 218.

The track side ditches appear to have been backfilled by the earlier part of the 3rd century. Activity in the enclosure around Structure 3 appears to continue well into the later 3rd and 4th

centuries and it is possible that the track continued to function through this period, but without good maintenance of the ditches.

Land division in the 2nd century (Fig. 14)
A large ditched enclosure was arranged to the southwest of the possible track, bounded to the southwest by ditches F1006 and F1084/F1010 and to the northwest by ditch F451. Ditch F185 was likely to have defined its eastern extent, which largely lay beyond the limit of excavation. This enclosure formed the curtilage of a substantial stone footed building (Structure 3). A possible further enclosure was partially exposed to the northwest. While the plot boundaries had been repositioned, the overall layout had a great deal of continuity with the 1st century enclosures.

An apparent entrance to the enclosure was positioned on the southwest boundary, formed by the opposing terminals of ditches F1006 and F1084. Additional features, arranged just inside the entrance gap, may have related to a gateway or other structure (described below). An unusual arrangement to the western corner of the enclosure had been formed by ditches F451and F1006. The two ditches did not intersect with one another and, despite having been disturbed by a post-medieval ditch F1020, F451 appeared to terminate at its southwest end within approximately 2-3m of F1006. Ditch F1006 continued to the northwest past the terminal of F451, kinking around it to the north and continuing beyond the limit of excavation to the northwest. The purpose of this layout is unclear beyond the formation of an access point into the adjacent plot of land.

Ditch F185 terminated to the northeast within 2m of roadside flanking ditch F109. Its extent to the southwest and its relationship to the southwest boundary F1010 was not exposed during the excavation. This group of ditches appears to have fallen out of use by the middle of the 3rd century.

The possible gateway (Fig. 16)
Three discrete features (F1113, F1397 and F1391) located adjacent to the opposing terminals of ditches F1006 and F1084 and a narrow gully (F1118) extending between the two, appeared to form elements of a possible gate, or other structure, for controlling access through the probable entrance. The two larger pits (F1113 and F1391) were positioned to either side of the entrance and set approximately 1m from the inside edge of the enclosure ditch. Both pits were sub-oval measuring 1.3-1.5m across and 0.6-0.8m deep with steep sides and a flattish base. Both also contained an initial fill of reddish brown sandy loam (1114/1115 and 1392 respectively) and an upper fill of sub-angular and angular sandstone cobbles and boulders (1018 and 1393). Neither displayed a clear post-pipe and F1113 contained considerably more stone packed in its upper fill. Posthole F1397 was positioned centrally, between the two pits, and set approximately 1m further back into the enclosure. The centrally positioned posthole was oval and measured 0.6m wide and 0.49m deep with near vertical sides and a U-shaped base. It contained two fills, comprising backfill 1399 composed of reddish-brown silty sand with large sub-rounded grey sandstone packing, around a clear post-pipe (1398) composed of mid greyish-brown silty sand.

The arrangement of any putative former structure associated with these features is uncertain. The two larger pits were similar in character, albeit that one was more substantially packed with stone at the top and they are positioned as if to support a gate or gates. However, their functionality as post-pits is uncertain. The solid mass of stone packed into pit F1113 is more suggestive of a post-pad, however, the presence of a deeper pit below the stone suggests that the post was originally sunk into the ground. Perhaps disturbance of the pit fill during removal of a large post had resulted in the absence of a post pipe and the solid appearance of the packing material. Two larger posts to either side of the entrance could easily be interpreted as a gateway. The set-back central posthole is the clearest evidence of a structural post. Less obvious is its purpose as part of a gate structure. It would have blocked or restricted the entranceway, and

perhaps this was its function, allowing greater control over access to the plot. Alternatively, or additionally, it may have supported a roof.

The small gully (F1118) appeared to have no structural purpose and may have been present simply to provide some drainage at the entrance. It appeared to extend into adjacent ditch terminus F1084 and contained a lower lens of fine 'pea gravel' (1123) below a fill (1119) composed of mid-brown sandy loam with frequent sandstone cobbles and slate fragments.

Structure 3

In situ *building fabric* (Plan Fig. 17, sections Figs 18a-f; Plates 8-10)
The surviving *in situ* fabric of Structure 3 comprised stone foundations constructed in three successive phases (I-III). An initial large rectangular northwest to southeast aligned structure had been extended on its southwest side with the addition of up to three new rooms. This extension had been adapted in a third episode. Two small fragments of the first course of upstanding stone walls on top of the foundation also survived.

Structure 3 - Phase I (Fig. 18a)
A rectangular arrangement of strip footings was exposed with external measurements of 32m by 18m. Internally it was arranged as three, long, northwest to southeast aligned ranges comprising a wide central range measuring 7m wide and two narrower ranges to either side each measuring approximately 4m wide. A single continuous footing trench (F473) had been dug. It measured a consistent width of 1m, however its depth varied greatly from 0.6m to 0.1m. Its profile was consistently vertical sided with sharp breaks of slope and a flat base. It contained a foundation (343) composed principally of tightly packed water worn pebbles, cobbles and boulders. Rare sub-angular grey sandstone cobbles and boulders were also present. No bonding material had been used in the foundation, however, a matrix of reddish-brown sand infilled space between the cobbles and occasional lenses of sand were also noted. The depth of the footing appeared to correlate closely with the firmness of the underlying natural substrate. Alluvial gravels sands and silts were highly variable in compaction and it was noted that when excavated through gravels, the footing trench was always shallow compared to where excavated through sand or silt and sand. The outer wall of the northeast range was particularly shallow and had, in places, been completely removed by later robbing (F132). It was also noted that the footings of the central range were generally more substantial than the outer walls.

A small fragment of faced sandstone wall was exposed (213). Wall 213 was positioned on top of footing 343 where it formed the first course of the southwest wall of the central building range. The surviving fragment measured 1.5m long by 0.5 m wide and was bedded onto a thin layer of fine reddish sand (552) which levelled out the uneven cobbled footing below. It comprised the southwest face and internal rubble packing of an apparently dry wall of greyish sandstone, set approximately 0.1m in from the outside edge of the footing. The northeast face of the wall had been removed by a modern disturbance. No other features relating to entrances, surfaces or internal layout had survived.

Structure 3 - Phase II (Fig. 18b-d)
The second construction phase comprised the footing (F1053) for a structure positioned centrally on the southwest side of the building and appeared to also include two inserted footings (F1459 and F1048) internal to the southwest range of building phase I. Footing F1053 was once again a continuous strip trench. It measured 1m wide and between 0.3m and 0.92m deep with vertical sides and a flat base. It contained a foundation of tightly packed stone (1054) composed of an approximate 50:50 mixture of rounded, water-worn, pebbles, cobbles and boulders and sub-angular sandstone cobbles. In places the foundation had been roughly coursed with alternating layers of rounded cobbles and sandstone. No bonding had been used in the foundation, however, a matrix of silty clay and sand was present in addition to occasional lenses of sand.

The footing formed a row of three cells aligned northwest to southeast abutting foundation F473. The middle cell was a complete square at foundation level, however, the cells to either side were incomplete, lacking a return to footing F473. It is possible that these two rooms were covered, but either open sided or enclosed on their fourth side by light timber walls. If any remains of postholes, or other features indicating timber walls, had existed, they had been removed by the footings of building phase III. The structure represented by F1053 was poorly aligned to phase I foundation F473.

Wall footings F1459 and F1048 were aligned northeast to southwest, abutted footings F473 and subdivided the southwest range of building phase I (F473) into three rooms. Both measured 0.6m wide, 3.7m long and up to 0.58m deep with near vertical or vertical sides and a flat base. Each contained a foundation (1460 and 1049 respectively) of tightly packed stone composed of abundant rounded to sub-angular gravel and pebbles and occasional rounded cobbles. A small fragment of the upstanding wall (395) survived on top of F1048 where it abutted F473. It comprised two faced blocks of grey sandstone.

All three of these elements to the footing layout for phase II are well aligned to one another, but as a group were poorly aligned to phase I. While the fabric of foundations F1459 an F1048 differed from F1053, they have been interpreted as contemporary on the basis of this close alignment.

Structure 3 - Phase III (Fig. 18e-f)
This phase of construction comprised the addition of two 'L' shaped sections of stone foundation (F1025 and F1055). They abutted phase II foundation F1053 and apparently infilled the open sided or partially timber enclosed rooms with stone footed walls. The two foundations were similar in construction. Each was composed of a trench measuring 0.75m wide and up to 1.08m deep with vertical sides and a flat base containing tightly packed sub-angular, reddish and greyish sandstone boulders (1026 and 1056 respectively). Boulders were random shaped, unworked and no coursing was noted. No bonding material had been used, however, lenses of sand were present in places. A thin layer of rounded gravel and pebbles had been laid in the top of each footings trench sealing and levelling the very coarse rubble foundation. F1025 had been partially truncated by post-medieval pit digging (F1022). Two sherds of 2nd century pottery were recovered from rubble foundations 1026 and 1056.

<u>Postholes</u> (Plan Fig. 17, sections Figs 18g-i)
A northwest to southeast aligned row of three postholes (F1414, F1416 and F1418), external to Structure 3, extended between the southern corner of foundation F473 and the corner of 'L' shaped phase III foundation F1055. Each was circular in plan, measuring 0.48m across and between 0.19m and 0.41m deep with steep-vertical sides and a rounded concave base. Each contained a fill (1415, 1417 and 1419) composed of mid reddish-brown sandy silt with occasional sub-angular sandstone cobble packing either randomly distributed in the fill or arranged in an approximate ring at the top of the posthole.

The original extent of this posthole row and its relationship to the three phases of construction evident in the foundation layout remains uncertain. The building is broadly symmetrical, ignoring the slightly skewed alignment of phases II and III to phase I, and it seems likely that an opposing row of posts had been removed by post-medieval pit digging (F1022) to the northwest of phase III foundation F1025. In terms of stratigraphy they appear most closely related to foundation phase III, respecting the corner of F1055. It is just possible that further postholes had been truncated by the insertion of F1055, however, for this to be the case they would have had to have been set closer to the building to have fallen exactly within the width of the footing trench and this seem unlikely. Additionally, no postholes were present between the two northeast to

southwest stretches of phase II foundation F1053, ruling out a continuous line of posts extending the full length of F473 and, it would seem, an association with foundation phase I.

Stone ovens (Plan Fig. 19, sections Fig. 20; Plates 11-12)
The remains of two stone ovens (F546 and F553) were exposed in the southern corner of the building. Both appear to have been inserted following the construction of Structure 3. The earlier of the two (F546) had been largely demolished and survived as little more than a single course of stone. It had also been partially removed by the stoking pit associated with later oven F553. A square construction cut had been excavated measuring approximately 2m wide and 0.4m deep with steep sides and a flat base. Its excavation had exposed the side of foundation 343 to the northeast. The stone oven structure (539) had been set within the cut. In plan it was square, facing southwest, with an arched chamber set off-centre to the left and a smaller niche positioned to the right. To the northeast it abutted foundation 343. It had been constructed in dry masonry of randomly shaped sandstone blocks and occasional reused pieces of broken roof tile. Natural gravel exposed at the base of the oven chamber and niche had been overlain by a thin deposit of charcoal rich material (518-19) which appeared to be contemporary with its use. This material produced eight sherds of mid-2nd century Romano-British pottery. A sample (12) taken from context 518 produced charred remains of spelt grain, some of which had sprouted, and heather seeds likely to reflect fuel/tinder (Carruthers, below). The charcoal also highlighted the use of heathland resources including heather and gorse or broom (Challinor, below). Oven F553 was relatively intact, and clearly succeeded F546. Its insertion into the building occurred at some time after the mid-2nd century, and its use is likely to have continued into the later 3rd century. It is described below in phase 3a.

Stone hearth 541
Located in the central room of the southwest range was a rough collection of stones in cut F547 associated with burnt clay and may represent the site of a hearth. It was sub-circular in plan with two sandstone slabs at the centre and measured 1.1m long by 0.95m wide and 0.3m deep. It was filled above the slabs with two ashy layers (540 and 543) which contained finds of Romano-British date, including in 543 a sherd of Black-Burnished ware dated to after the mid-2nd century AD.

Possible furnace room (Structure 4) (Fig. 21; Plate 13)
This structure was only partially exposed within the excavation area. It appeared to represent the eastern corner of a building aligned approximately northeast to southwest, which continued beyond the limit of excavation to the southwest. The unexcavated part of the structure was within a tree preservation area excluded from development. Its full extent and character were not therefore established, however, the below ground floor level exposed in addition to the presence of box flue tile fragments largely concentrated in adjacent features is highly suggestive of a hypocaust heating system in the unexposed part of the structure.

The exposed portion was the corner of a small room with its floor level approximately 0.7m below ground surface, lined with internally faced sandstone masonry. It comprised a construction cut (F1350) which was square or rectangular in plan, measuring 3.8m along its northwest to southeast aligned side, exposed to a maximum length of 2m along its northeast to southwest axis. It contained a base of compacted gravel (1456), exposed at a depth of 0.7m, and retaining walls of sandstone masonry (1352) both of which were left undisturbed. Along its northwest to southeast axis, the full width of the structure was exposed, with an internal dimension of 2.6m. Surviving masonry (1352) comprised up to four courses of a wall measuring up to 0.6m wide and forming three sides of a square or rectangular space, retaining the sides of cut F1350. It was composed of roughly hewn sandstone face-work in blocks up to 0.4m x 0.2m x 0.2m, with more roughly squared and generally smaller blocks behind, bonded with yellow clay.

The internal space contained six fills (1359, 1354, 1358, 1456, 1457 and 1353) representing probable use and subsequent abandonment by the middle of the 3rd century AD. First fill 1359 was a level deposit covering the entire area to a depth of 0.15m. It was a highly laminated deposit of numerous fine layers composed of very dark grey or black silty loam, abundant in fine charcoal and fine lenses of coarse sand. Twelve 2nd century pottery sherds were recovered. This deposit was most likely representative of the use of an oven or furnace located nearby but beyond the limit of excavation. The lensed structure of the deposit suggests a build up over multiple uses or the extended continuous use of a furnace and relates to its final period of use prior to abandonment. A thin layer of crushed mortar or lime (1354) separated 1359 from three layers of mid-dark greyish-brown sandy silt and dark grey sandy silt with occasional charcoal (1456, 1457 and 1358). These layers infilled the construction cut and overlay wall 1352 where it had collapsed around its western corner suggesting that they had formed following the abandonment of the structure and its partial collapse. A coin of AD 241-243 (object 21) was recovered from fill 1358 in addition to 21 pottery sherds of the 3rd century AD. Final fill 1353 infilled the feature and was composed of mid reddish-brown sandy loam with inclusions of sandstone, slate, CBM and charcoal flecks. It produced a further 44 sherds dating to the 3rd century AD.

Cess pits and wells (Figs 22a-b, 23a-b; Plate 14)
Pit F1405 was a large sub-rectangular pit located approximately 5m from the southern corner of Structure 3. It measured 2.8m long, 1.6m wide and had been dug to a depth of 2.45m with vertical to undercutting sides and a flattish base. Two basal fills 1401 and 1400 had a mineralised 'cessy' appearance when observed *in situ* and were composed of mid grey and pinkish-grey sandy silt. Pottery dating to the late 2nd or early 3rd century was recovered from fill 1401. Both were wet at the time of excavation, although the water table was noted during the excavation of wells F1406 and F1311 to be more generally encountered at a depth of approximately 4m. It is therefore unlikely that the base of this pit had been permanently waterlogged. A lack of preserved organic material in the fill supports this conclusion.

A second cess pit F1297 was positioned further to the south of Structure 3. It was sub-circular in plan, measuring 1.7m across and 2.5m deep with steep straight sides and a flat base. The first fill (1488) was composed of reddish-brown silty sand with abundant loose fine gravel and pebbles with some signs of mineralisation. Second fill 1487 was composed of slightly greenish-brown soft silty loam lensed throughout with steeply tipping lines of yellowish-brown sandy clay and produced six sherds of Black-Burnished ware pottery dated to the mid-3rd century. When examined *in situ* it had the visual appearance of cess, however, the analysis of a sample taken did not produce evidence for preservation by mineralisation seen in some cess pit fills. It is possible that waterlogging had prevented mineralisation. Charred remains including stonepine nut shell fragments were recovered (Carruthers, below). Further infilling of these two pits occurred during the later 3rd or 4th century and is described below.

Two deep wells both appeared to be contemporary with the occupation of Structure 3. Dating of the finds recovered and the nature of the fill sequences suggest that F1311 may have succeeded F1221. Well F1221 was circular, measuring 1.6m wide (flaring out to 2m at the rim) and 5m deep with near vertical sides and a concave base. It contained a thin basal fill (1481) composed of peat-like black, organic rich, waterlogged silty loam, approximately 0.25m thick. A single sherd of Roman pottery was recovered from this fill in addition to a large faced block of volcanic trap stone. It was overlain by two relatively sterile soil fills (1480 and 1222). These two were similar in composition, both mid greyish-brown sandy silt loam, however 1480 was below the present-day water table. A further three sherds of probable 2nd century pottery were recovered from these fills in addition to 33 fragments of tile. The lack of material recovered from this feature, and particularly the absence of preserved organic remains in fill 1480, suggest that it had been deliberately and rapidly infilled with soil. From the limited pottery assemblage recovered this may have happened during the 2nd century AD.

F1311 was circular, measuring 1.5m at the top and 5.6m deep, with near vertical sides and a concave base. It contained a series of fills, including a thick deposit of waterlogged organic material at the base, resulting from its abandonment most probably in the later 3rd century AD.

Pits F1303 and F1306 (Section Fig. 22c)
Two intercutting pits, with charcoal rich fills, were located to the south of the enclosure around Structure 3. They cut Romano-British phase 1b ditch F1017.

5.5 Romano-British – phase 3

From the middle of the 3rd century AD the composition of the pottery assemblage shows a strong bias towards locally produced coarse wares in contrast to the earlier period where imported fine wares were common. This shift in the ceramic evidence marked the beginning of phase 3 which spans the later 3rd and early 4th centuries. Two sub-phases (phase 3a and 3b) were identified. They were not well differentiated by dateable finds but were clearly stratigraphically separate. During phase 3a continued activity in and around Structure 3 is demonstrable from the evidence of rubbish dumping throughout the period and there is good evidence to suggest that along with a change in the ceramic assemblage there was a significant change in the nature of the occupation. Phase 3b was principally the final abandonment of Structure 3, its destruction and the closure of associated features, occurring before the end of the first quarter of the 4th century. In addition, a large enclosure of stone packed postholes and other posthole groups were introduced following the backfilling of phase 3a pits and at least one ditch. The chronology of these posthole features is uncertain beyond their introduction at some time after the very late 3rd century. It seems likely, however, that relatively little time had elapsed as the postholes had reused building stone from Structure 3 and were aligned closely to ditches associated with phase 3a.

Phase 3a (Fig. 24)
By the middle of the 3rd century, the ditched enclosure around Structure 3 had been backfilled and replaced by a more diffuse, less coherent layout of ditches, albeit following similar lines to those established in phase 2. Structure 4 had also been abandoned and backfilled either towards the end of phase 2 or early in phase 3a. A group of industrial features are possibly evidence of activity taking place in and around Structure 3 during the later 3rd century. The dating of these features was somewhat inconsistent and their character diverse, although it is not unreasonable to see them as a coherent group of features representing small scale industrial and commercial activity. To the south of Structure 3 a group of pits were excavated and two probable corn drying ovens were used. Large quantities of rubbish were disposed of in several large features established in phase 2.

Ditches
Five linear features (F1007/F1315, F1496, F1011 and F1016) were backfilled in the late 3rd or early 4th centuries. Ditches F1007 and F1496 extended along the southwest side of site and appear to form an enclosure or enclosures with their focus beyond the limit of excavation to the southwest. Ditch F1011 followed closely the line of phase 2 ditch F1010.

Industrial features

Stone oven F553 (Detailed plan Fig. 19 and sections Figs 20b-c; Plates 11-12)
A substantial stone oven, had cut the fills of small pit F554 and the structure of probable phase 2 oven F546. It was northwest to southeast aligned, measuring a total of 2m wide and 3.94m long. Its bi-partite form comprised a square construction cut to the southeast measuring 2m wide and 0.7m deep with steep straight sides and a flat base, and a sub-circular stoking pit to the northwest measuring 1.8m across and 0.7m deep with moderate concave sides and a flattish base.

A shallow linear recess had been excavated at the base of the square construction cut, into which had been set sandstone slabs forming the base of the oven flue (559) with the stone oven structure (430) set above, filling the construction cut. Oven structure 430 was square in plan with a narrow flue or firing chamber facing the stoking pit to the northwest. It comprised thick masonry walls to either side and a roughly stepped or sloping back. Masonry was bonded with yellow clay and comprised face-work of large roughly squared and faced sandstone blocks exposed inside the flue, with random irregular shaped sandstone cobbles and boulders behind and rare fragments of reused, broken roof tile. Many of the sandstone blocks used in the oven structure were badly weathered and degraded having almost returned to sand. The inside face of the flue had been lined with clay. Patches of this lining survived (535) and had been highly fired to the point of vitrification.

The raking pit and oven flue contained four fills related to use of the oven (498, 497, 565 and 399). Layer 498 lay within the raking pit and was composed of black, charcoal rich, silty loam, overlain by a patchy mixed layer of reddish, possibly heat affected clay and charcoal with occasional sandstone rubble (497). Layer 497 spread beyond the raking pit to overlay the remains of oven F546 and possibly represents debris from replacing the clay flue lining of oven F553. A charcoal rich material (565) filled the oven flue. It was composed of soft, very dark greyish-brown silty loam and was laminated in character with clear lenses of ashy material throughout. Fill 399 lay within the raking pit and was broadly equivalent to 565 and was once again composed of very dark greyish-brown silty loam in numerous fine layers or laminations. These two deposits (565 and 399) represented the final use(s) of the oven prior to its abandonment. Eleven sherds of South Devon ware pottery recovered from this fill provide poor dating evidence due to the relatively wide date range for production of this fabric type. However, it is found in quantities from the mid-2nd century, but most commonly from the middle of the 3rd century.

Results of analyses of samples taken from fills 399 and 565 have demonstrated the presence of a variety of charred and uncharred artefacts and ecofacts. Large quantities of fishbone, principally of young herring/sprat have been interpreted as evidence for the commercial production of fish sauce (Armitage, below). Significant volumes of charred grain of spelt, oat and barley were present (Carruthers, below) and small amounts of hammer-scale were also detected. Charcoal was from a variety of fuel sources and most likely representative of the use of faggots, bundles of roundwood, capable of high heat and fast burning; suitable for crop drying and possibly processing fish sauce, but not for metalworking which requires a higher and sustained heat (Challinor, below). This suggests that the hammerscale in the rakings was incidental to the use of the feature and more likely derived from metalworking hearths in the vicinity. The post abandonment infilling of oven F553 is described below in Romano-British phase 3b.

Smithing hearths F447 and F499 (Detailed plans and sections Figs 25a-e)
Two small shallow pits F447 and F499, located within Structure 3, produced significant quantities of hammer-scale consistent with smithing activity. F447 was positioned in the northeast range of Structure 3. It was sub-circular measuring 1.09m across and 0.16m deep. Signs of heating were visible around the pit margins and it contained a charcoal rich lower fill (448) composed of very dark grey sandy loam. This fill produced a residual flagon sherd of 1st-2nd century date in addition to several iron nails and fragments of tile. The upper fill (449) produced material related to building demolition and was sealed by demolition layer 130 related to the abandonment of Structure 3.

Pit F499 was located in the central range of Structure 3. It was sub-square in plan and measured 0.9m wide and 0.12m deep. Scorching was present around the northwest side of the feature (500) comprising a reddened pit margin composed of heat affected natural. This was overlain by a charcoal rich fill (501) composed of dark greyish-brown sandy loam with rare fragments of fired

clay. Six iron nails were distributed through this fill in addition to a South Devon ware sherd of probable 2nd – 3rd century date. The upper fill had been sealed by a layer of demolition debris (141) related to the abandonment of Structure 3.

Analysis of soil samples (5 and 7) from both of these hearths produced unusually high quantities of hammer-scale (740 g from context 501) suggesting intensive use as iron working hearths. The charcoal assemblage supports this interpretation being dominated by oak wood typically used to achieve the high sustained heat required for metalworking (Challinor, below).

Lead working pit F1427 (Detailed plan Fig. 25f and section Fig. 25g; Plate 15)
A small pit located in the southwest range of Structure 3 was circular in plan, measuring 0.46m in diameter and 0.11m deep with steep straight sides and a concave base. It contained a lining of clay (1428) which had been heat affected in an apparently even distribution around the feature. The lining appeared to have cracked into a crazed pattern during use, into which molten lead had seeped and cooled. This lead had formed into an interconnected lattice within the clay lining. Analysis of the lead has shown that it probably derives from lead working (Tim Young, below). The upper fill of the pit (1429) was composed of very dark greyish-brown, charcoal rich, silty loam. A single flagon sherd of mid-1st to early 2nd century date was recovered. As found for hearths F447 and F499 (above), the charcoal assemblage recovered from context 1429 (sample 11) was dominated by oak wood. A radiocarbon date of cal AD 135-345 (SUERC-72546) was obtained from charcoal recovered from fill 1429.

Small oven F1452 (Detailed plan Fig. 26)
The backfill and masonry (1352) of Structure 4 (F1350) had been cut by the stoking pit of a small oven or furnace F1452. The oven was aligned north-south with the stoking pit to the north. The surviving base of the oven was composed of a shallow semi-circular depression measuring 0.55m across and 0.08m deep, positioned on the edge of Structure 4. It had been lined carefully with a thin layer of fired clay, which had been reapplied at least once (1453) and the surrounding natural had been heat affected up to 0.1m around the margin of the feature, suggesting that quite sustained high heat had been achieved during its use. Adjacent to the oven was a roughly arranged layer of re-used roof tile forming the remnants of a probable working surface (1475). The stoking pit had removed several stone blocks from wall 1352 and had been excavated deeply into fills 1353, 1358 and 1359. It was sub-oval in plan, where exposed, and measured 1.3m long and 0.66m deep. It contained two fills, the lower of which (1454) was clearly tipping into the pit from the oven base to the south and was composed of very dark grey silty loam with fragments of burnt clay at its base. The upper fill (1455) was composed of mid greyish-brown sandy silt with a diffuse horizon to surrounding fill 1353.

Possible corn drying ovens (Figs 27-28)
Oven F1150 was a small stone-built oven and was located towards the southern edge of the Structure 3 enclosure. No evidence was exposed for an associated structure. It was approximately keyhole shaped in plan, measuring 3.1m long and a maximum of 1.7m wide, aligned northeast to southwest with a circular stokehole to the southwest. The oven flue was lined with roughly hewn sandstone blocks to either side, and a sandstone slab at the base (1155). The stonework was bonded with yellow clay which had become oxidised to a reddish colour where exposed to the heat of the oven. Three large, squared and faced blocks of volcanic trap had been used at the entrance to the oven structure and were almost certainly re-used from buildings elsewhere. Both the oven flue and stoking pit contained a single homogeneous fill (1152) composed of mottled yellowish-brown and very dark greyish-brown soft sandy silt with occasional sub-angular cobbles and boulders derived from the collapsed or demolished oven structure and frequent charcoal flecks. This fill produced a rich assemblage of 3rd or late 3rd century pottery totalling 131 sherds including a fine Colchester Colour-Coated ware vessel and imported ‘Rhenish’ ware. A shallow sub-circular pit (F1154) had cut oven F1150 to the northeast, removing the end of the structure. Its dimensions were 2.25 by 2.75 m in plan and 0.25 m deep.

It contained a single fill composed of reddish-brown, firm silty sand which produced a sherd of later Romano-British pottery and the remains of an iron socketed hook.

Oven F1140 was a small stone oven located in the southern corner of the site, outside of the enclosure around Structure 3. It was aligned broadly northeast to southwest and comprised a roughly horseshoe shaped stone structure to the northeast (1141), with a narrow flue opening into a shallow stoking pit to the southwest. The stone structure had been constructed of both roughly hewn and random shaped sandstone blocks and cobbles and was bonded only by a silty clay matrix that had scorched red around the margins of the flue. The oven flue and stoking pit contained two fills (1145 and 1142) composed of very dark brown silty loam. They produced an assemblage of 127 sherds of later 3rd century pottery.

Analysis of charred plant remains from fill 1145 of oven F1140 and fill 1152 of oven F1150 suggested that both ovens had most likely been cleared out after their final use. However, a few poorly preserved grains of emmer/spelt, barley and oat were recovered and these may represent the remains of crops having been dried using these ovens (Carruthers, below). The charcoal assemblage from both was varied and dominated by small diameter roundwood suggesting the use of faggots as fuel (Challinor, below).

Pits (Figs 29a-e)

A group of four pits were clustered together to the southeast of structures 3 and 4. Three (F1281, F1277 and F1258) were intercutting and of a similar dimensions, the fourth (F1160) differed in character and was situated several metres further to the north. The three intercutting pits were all broad and shallow, measuring up to a maximum of 2.66m across and 0.55m deep. They had been cut into alluvial gravel and had the slightly amorphous character of shallow extraction pits. The stratigraphically first and second pits (F1281 and F1277 respectively) contained unremarkable fills composed of dark greyish-brown to mid reddish-brown silty loam. Fills of third pit F1258 comprised a lower fill (1257) of dark brown silty loam, a second fill (1253) composed of a 0.23m thick deposit of largely broken roofing slate sealed by a final fill (1274) of dark brown silty loam. A coin copying Tetricus I (*c.* AD 275-285) produced by the fill (1283) of earlier pit F1281 dates all three pits to the later 3rd century. The associated pottery assemblages from these features were unfortunately at odds with this dating evidence. A relatively large group of Flavian sherds (85 from fill 1278) was recovered from the fills of F1277 and F1281 including a near complete samian bowl. A more modest assemblage of pottery dating from the late 2nd century onward was recovered from upper fill 1274 of the later pit F1258. Further evidence of a later 3rd century date for this pit group is inferred from the thick slate dumps recorded in pits F1258, F1160 and possible cess pit F1297. These deposits appeared to result from a single event, forming a chronological horizon, dated by finds from fill 1284 of pit F1297 to after the mid-3rd century AD.

Pit F1160 was circular in plan and very regular in form. It measured 1.1m wide and 0.9m deep, with steeply sloping sides becoming vertical and a flat base. It contained a first fill (1190) composed of dark greyish-brown sandy silty loam below a fill (1101) composed principally of slates tipping into the centre of the pit in a mid greyish-brown sandy silt-loam matrix. Of the two coins recovered from this fill, one was identifiable as a coin of Hadrian dated AD 117-138. The fill also produced a total of 58 sherds of pottery with a late 3rd century date. The slate content of this fill was visible at the surface as a complete ring around the inside of the cut and appeared to have subsided into the pit on top of fill 1190 which may have been largely organic material. It appeared to be closely related to similar roof slate dumps recorded in adjacent pits F1258 and F1297.

Infilling of cess pits and well (Sections Figs 22a-b and 23b)
These three features (F1297, F1311 and F1405) appear to have fallen out of use by the middle of the 3rd century AD, however their depth appears to have meant that they continued to be useful for waste disposal during the later 3rd century.

Overlying the initial cess fills in pit F1297 was a thick deposit of dumped roof slate (1302). This deposit appears related to a wider spread phenomenon also evident in the fills of adjacent pits F1160 and F1258 (described above). Slates were mostly pentagonal in shape with a single nail hole. They tipped steeply into the pit from the top giving the appearance of a deliberate lining. However, the slates were increasing stacked over one another towards the base of the deposit which reached a thickness of 0.5m. The formation of this unusual deposit can only be the result of a dynamic process involving shrinkage of the underlying cess deposits and further deposition of waste from above. It suggests that the pit was possibly up to two thirds full with soft organic waste when deposit 1302 was introduced into the pit. The dumping of a large quantity of roof slate clearly indicates the abandonment of the feature as a cess pit and the presence of slate almost to the top of the surviving pit edge suggests that at the time of dumping it all but completely filled in the feature. Over time the decaying matter in the pit reduced in volume and the heavy slate pressed down into the pit on top of it. Fills 1298-1301 were gradually deposited on top of the sinking slates potentially helping some adhere to the margins of the pit as the majority dropped towards the bottom. The upper fills 1298-1301 were dumped deposits composed of dark brown or dark reddish-brown, soft, sandy silt-loam. Clearly the result of waste disposal, most likely towards the end of the occupation of Structure 3, they produced a rich assemblage of finds dated from the 2nd to the late 3rd century AD. A total of 107 fragments of CBM, including two of box flue tile, 129 sherds of pottery, 23 iron objects and fragments of quern stone were recovered. In addition, a number of fragments of building stone, both sandstone and a piece of faced volcanic trap, were present.

Cess pit F1405 had been backfilled by a succession of dumped deposits containing abundant pottery of the later 3rd and early 4th century date, a thick deposit of heat affected clay (1371) below a thick deposit containing abundant shell fragments (1361). Fills were steeply tipping towards the base, presumably once again as a result of shrinkage of the underlying organic cess fills (1401 and 1400).

In well F1311, the lower fill (1484) was below the present day water table at a depth of 4 – 5.6m. It comprised a thick mass of dark grey to black organic matter preserved by waterlogging, which was, for the most part, composed of small twigs, wood chips, cereal straw and chaff fragments. Preserved wood showed a mixture of timbers that could have formed the well lining and material that was the result of nearby woodworking (Richard Brunning, below). In addition was a lead counterweight, which when in use would have assisted in raising water from the well bottom. Eleven late 3rd century pottery sherds and a number of tile fragments were also recovered. An examination of the waterlogged plant material produced a diverse assemblage of plant remains which are described in the relevant section (Carruthers, below). Fill 1483 overlay 1484. It was 1.1m thick and composed of dark grey soft silty loam with common charcoal flecks. It may have formed in a similar fashion to lower fill 1484 but lacked the organic preservation having not been subject to waterlogging. Third fill 1482 was composed of mid greyish-brown sandy loam with frequent loose gravel and rounded pebbles. Final fill 1312 was composed of mid greyish-brown loamy sand. It had the appearance of probable deliberate infill, although it also produced 42 sherds of late 3rd century pottery in addition to fragments of Roman building materials, including worked sandstone, tile and slate.

Phase 3b (Fig. 30; Plate 17)

Abandonment of Structure 3 and its enclosure

Layers of demolition debris had survived within the three ranges of Structure 3, infilled the stoking pit of stone oven F553 and spread beyond the building footprint to the north. Spreads of material were thin and distinct in character between the three ranges. They appeared to have formed as the building collapsed and while the walls were still partially upstanding and had remained *in situ* as the fabric of the walls was subsequently robbed. In the central range layers 106 and 141 were composed of mid brown sandy silt loam. Deposit 141 in particular was rich in building demolition rubble including 45 recovered fragments of roof tile and abundant sandstone rubble. A coin was recovered from each of these layers. One, a barbarous radiate copying Claudius II (object 20), was closely datable to AD 268-270, giving a probable very late 3rd or 4th century date for the collapse of the structure. Demolition layers in the northeast range comprised a layer of mid-brown sandy silt loam with occasional fragments of roof tile, slate and building stone (130), overlain by a notable spread of roof slates (127). This layer of slate was rarely more than a single slate thick, and where present was spread evenly with slates lying flat. The majority of slates were rectangular in shape and as a group lacked uniformity, particularly in the thickness of the slate, some of which were excessively large and heavy, up to half a metre long and 5.8kg in weight. Many featured fixing holes and some still bore their iron fixing nails in position. The overall impression was of a partial collapsed roof laying as it had fallen, undisturbed from sometime in the early 4th century AD. Deposits in the southwest range (143 and 308) and to the north of the building (142) contained further slates and tile fragments. A total of 124 iron objects were recovered from the demolition material, the majority of which were nails most likely from the roof, but possibly from other timber elements of the building structure. Pottery was not abundant in these layers considering their volume. However 130 sherds of late 3rd – 4th century pottery were recovered which supports the dating evidence of the coin (object 20). Fragments of roof tile, datable to the 1st, mid-2nd and 4th centuries, were recovered from the demolition spreads pointing to adaptation and/or repairs occurring throughout the life of the building.

The upper fills of oven F553 and its stoking pit comprised a large, shaped, sandstone block (442) and a further seven fills (contexts 450, 443, 441, 429, 428, 398 and 397 on Figs 20b-c) representing the abandonment of the feature and the collapse of the superstructure and surrounding building. Architectural block 442 was by far the largest single stone present. It was broadly rectangular in plan and profile, measuring 0.9m x 0.34m x 0.22m with chamfered corners on one side. It had fallen or been pushed into the raking pit and lay on top of rakings deposit 399. It must surely have come from the oven structure and had the appearance of a lintel, possibly supporting the entrance to the oven flue. Deposits 450, 443 and 441 lay within the upper level of the flue and were composed respectively of sandstone rubble, broken tile fragments and further sandstone rubble. The layer of tile (443) is of particular interest, suggesting, as it does, the possibility of a tiled element to the superstructure of the oven. Layers 429 and 428 were further infilling with soil composed of mid reddish-brown silty loam with flecks fired clay. The final two deposits filled the raking pit and levelled the area overlying earlier oven F546. They clearly represent the collapse of the surrounding building. Layer 398 was composed almost entirely of near complete roof slates. A total of 102 slates was recovered, as well as 39 fragments of broken ceramic roof tile. The slates were almost all pentagonal in shape with a point at the base and a nail hole at the top (see Haruda and Payne, below). They were surprisingly regular and a number had retained an iron nail in their fixing hole. They must represent a collapsed roof either from above the oven directly or cleared from nearby into the raking pit. Final fill 397 was composed of mid reddish-brown sandy silt-loam with common roughly squared sandstone boulders and cobbles and occasional fragments of roofing slate resulting from collapse of the surrounding building. A ‘gridiron’ (object 21) was recovered from amongst this rubble layer in addition to seventeen sherds of late 3rd-4th century pottery.

Robbing of the building stone appeared to have largely focused on the upstanding sandstone walls. However, the northeast external wall of the building and the shallow footing had been robbed to the natural and backfilled with rubble and discarded cobbles. Only a small number of residual earlier Roman pottery sherds were recovered from the robbing backfill. Further disturbance to the foundations had occurred much later during the post-medieval period.

Stone packed postholes (Sections Figs 31a-l; Plate 18)
A total of 62 postholes containing stone packing were recorded to the southeast of Structure 3. Packing varied from broken fragments of sandstone and occasional larger rounded cobbles representing disturbed remnants from posts deliberately removed to clearly *in situ* examples with visible post-pipe between carefully positioned sandstone blocks. Some also produced fragments of Romano-British roof tile, presumably also reused as packing, however, little other artefactual dating evidence was recovered.

Posthole group 1 - enclosure
Thirty-five stone packed postholes were arranged into three sides of a broadly rectangular enclosure with dimensions of 25m by at least 30m. They were aligned closely to Romano-British phase 2 enclosure ditches but did not respect them. They were observed to cut through the backfill of ditches F1010 and F1011 suggesting that the construction of this post enclosure followed the complete removal of the Romano-British phase 2 enclosure layout. They also cut the fills of later 3rd century pit F1281. Nine additional outlying postholes were present on the northeast side of the enclosure. They may relate to other small structures attached to the main enclosure or an entrance structure.

Posthole group 2
A further group of eighteen stone-packed postholes was recorded extending over an area measuring roughly 28m by 8m close to the southern edge of putative roadside ditch F109. They were arranged in a broadly linear scatter but with no clearly identifiable overall structure and no smaller arrangements such as for example regular four post groups or straight fence lines.

5.6 Medieval and post-medieval

Remains of the medieval period were limited. A Venetian silver coin of Doge Leonardo Loredan (1501-1521) was recovered from subsoil in addition to a small assemblage of pottery. Three north-northeast to south-southwest aligned ditches and a metalled track on the same alignment produced post-medieval material. Their infilling predates tithe mapping for the area which depicts a single enclosed field described in apportionments as ‘part of a lawn’. The site lies within the former grounds of ‘The Retreat’ and it is possible that these divisions relate to an earlier layout of these grounds, known to have been altered after 1781 following the purchase of the estate by Alexander Hamilton (Fox 1991). Further activity during this period appears to have comprised shallow pit digging presumably for gravel and sand extraction. A number of these pits had removed part of Romano-British building Structure 3 on its northwest corner. A considerable volume of debris from building demolition infilled some of these pits and spread widely to the southwest. These deposits produced an assemblage of pottery dating broadly to between 1650 and 1750 including some imported vessels and sherds from sugar refining vessels.

6. THE FINDS

6.1 Introduction

All finds recovered on site during the excavations have been retained, cleaned and marked where appropriate. They have been quantified according to material type within each context and the assemblage examined to extract information regarding the range, nature and date of artefacts represented.

6.2 Prehistoric pottery *by Henrietta Quinnell with petrographic comment by Roger Taylor*

Late Neolithic Grooved Ware

Context	Description	Comment	Fabric 1	Fabric 2	Totals
1102	F1007	Also Roman ceramics	1/4		1/4
2073	Fill ditch F2069			1/7 P6	1/7
Totals			1/4	1/7	2/13

Table 1: Pottery by sherd numbers, weight in grams and fabric, in context order.

P6 (Fig. 32) (263) fill ditch F2069. Fabric 2 5YR 6/4 light reddish brown. Simple rim from small vessel rim diameter 75mm with neat incised design extending to the rim top.

Fabric 2 Sparse coarse inclusions. *Petrology Rock fragments* – felsite, as pale buff, fine-grained angular fragments, 0.2-2mm, slate, grey, sub-rounded, 1.5mm: *quartz* – transparent to translucent colourless angular to sub-angular grains, 0.2-2mm: *feldspar* – soft white altered grains, 0.1-1.2mm and sparse translucent colourless cleaved, sub-angular grains, 0.3-0.8mm: *mica* – biotite, a scatter of dark brown cleavage flake, 0.05-0.5mm, muscovite, rare cleavage flakes, 0.2mm: *tourmaline* – sparse black glossy vitreous sub-angular grains, 0.1mm: *matrix* – a silty clay with fragments of the main tempering minerals less than 0.05mm. *Comment*. The components indicate a source in Ludwell Valley area of Exeter.

Comment
The general character of the fabric and of the decoration indicate Grooved Ware of the Late Neolithic (see papers in Cleal and MacSween 1999). The rim and vessel shape are appropriate although the vessel is unusually small. The sherd is redeposited. A small amount of Grooved Ware was found in pits in 1974 a little to the west of the site (Smith 1975) and more recently a pit with Grooved Ware was found on Digby Site 6 on the eastern fringes of Exeter (Quinnell and Farnell 2016, fig. 44).

Middle Bronze Age pottery

Fabric 1 This is generally similar to Fabric 6 of the Middle Bronze Age at Digby (Quinnell and Farnell 2016) which contains inclusions of basalt and other rock fragments probably derived from the Permian sandstones of the Exeter area and broadly equivalent to Peacock's (1969) Group 6. Generally oxidised 5YR5/4 reddish brown or rather lighter. All material is listed in Table 1.

Context	Description	Comment	Fabric 1
130	Demolition deposit	Also Roman ceramics	11/40
221	Fill linear ditch F107	Also Roman ceramics	2/3
245	Fill posthole F244		1/31
263	Lower fill of ditch F261		32/401 P1-3
265	Upper fill of ditch F261		1/11
267	Upper fill of ditch F261		36/411 P4
344	Buried soil 1050	Also Roman ceramics	1/38
431	Buried soil 1050	Residual	1/7
439	Fill ditch F458		55/345
440	Fill ditch F458		124/777 P5
448	Fill of hearth F447	Residual	1/3
Totals			265/2057

Table 2: Middle Bronze Age pottery by sherd numbers, weight in grams and fabric, in context order

Illustrated vessels (Fig. 32)

P1 (263) fill ditch F261 Rim and upper part of vessel, rim everted and slightly expanded, rim diameter 150 mm, irregular finger nail decoration forming one row just below rim and two rows further down the vessel.

P2 (263) fill ditch F261 Flat-topped everted rim from large thick-walled vessel: another sherd (not illus) suggests a possible lug which may come from this vessel.

P3 (263) fill ditch F261 Girth sherd with cordon regularly expanded by deep finger-tip impressions; vessel *c.* 215mm diameter at girth.

P4 (267) fill ditch F261 Flat-topped everted rim *c.* 410mm diameter from large thick walled bowl. Exterior reduced 5YR 6/1 light grey and very crumbled: very similar in appearance to material from Seabrook Orchard excavated by Wessex Archaeology 2015 on the opposite side of Exeter Road.

P5 (440) fill Bronze Age ditch F458. Flat-topped everted rim, diameter *c.* 420mm with slight internal expansion.

The only distinctive sherd not illustrated is a rim from 439 which is thicker and slightly more rounded than P1.

Comment
All vessels are of similar fabric, although P5 is reduced rather than oxidised. All appear to belong within, and slightly expand, the range of Middle Bronze Age Trevisker-related vessels found in the Exeter area which are either plain or have limited decoration (Quinnell 2012). The cordon on P3 for example is similar to that on a vessel from Old Rydon Lane, Exeter in a Middle Bronze Age enclosure ditch (Raymond 2012). The fabric of P2, P4 and P5 is unusually thick and more reminiscent of that found, for example in briquetage, than in domestic pottery (Quinnell 2010, 44) and may indicate some usage other than cooking. Bowls do occur in Trevisker-related assemblages but are not frequent; an example occurs at Castle Hill, Honiton (Laidlaw and Mepham 1999, fig. 24). The large flat-topped rim of P5 is an extreme example of the expanded rims regularly found in Trevisker assemblages across the South West and best illustrated in the large assemblage from Trethellan Farm, Newquay (Woodward and Cane 1991).

6.3 Lithics *by Henrietta Quinnell*

There are 48 cortical waterworn nodular flint pieces and eight of Greensand chert, of which three are pebble and the remainder waterworn (terminology after Quinnell *et al.* 2015). Most raw material therefore is likely to derive from sources in East Devon. The lithics are summarised in Table 3.

The tools comprise two denticulate scrapers, one end scraper and another broken, one scraper - end/both sides, and a small fabricator, and a fragment of a plano-convex knife, all of flint. Other than the Late Neolithic or Early Bronze Age plano-convex knife fragment, these tools are not closely dateable, though all are post-Mesolithic and denticular scrapers can be as late as the Middle Bronze Age. The debitage could contain a little Mesolithic material, but overall is likely to be multi-period.

There are 65 pieces of flint from 377 and 379 fills of pit F376 which has no other artefacts and which may indicate a date. These are flakes (14), flakes with usewear (3), broken flakes (4), blade with usewear (1), core preparation flake (4) and chips or spalls (39). Eleven of the largest pieces, largest flake 75mm, are cortical, waterworn nodular material. There is a mixture of hard and soft hammer pieces. The presence of a blade and soft hammer suggests a date no later

than the Early Neolithic for this feature. The presence of a large number of spalls come from retouch, indicating on-site working of tools.

	Flint	Greensand chert
Blades	1	1
Blades, broken	2	
Blades, broken, usewear	2	
Blades, usewear	4	
Flakes	53	10
Flakes, broken	27	2
Flakes, broken, retouch		3
Flakes, broken, usewear	2	1*
Flakes, retouch	2	
Flakes, usewear	10	
Core preparation and trimming	38	6
Cores	3	
Chips/spalls	42	
Tools	11	1
Unclassified	3	1
Totals	200	25

Table 3: Summary of lithics * indicate Portland chert. Details of lithics from contexts with more than five pieces present are described further below.

Three contexts with flint also contain Middle Bronze Age ceramics. Context 263, fill of ditch F261 has broken end scraper: 267 fill of ditch F261 has a flake, a flake with usewear, a cortical core preparation piece and a spall: 458 has a cortical flake.

Context 1338, fill of pit F1337 has ten pieces, all flint, of which five have nodular cortex: five flakes, three broken flakes, one chip, one exhausted core. Most flakes are soft hammer. This small assemblage is probably Neolithic.

Context 1282, fill of later Romano-British pit F1281 contained, in addition to a complete and a broken flint flake, and a flint with bifacial invasive working, probably intended for an Early Neolithic leaf arrowhead. There are also two extended end scrapers one of which is Greensand chert, an end scraper and a denticulate scraper. If the bifacially worked piece is correctly interpreted, then this assemblage may be Early Neolithic.

General comment

Overall the lithic assemblages appear similar to that from the 1974 Topsham excavation. Here there was a little definite Mesolithic material, which could be contemporary with the blades from Wessex Close (Jarvis and Maxfield 1975). There were also some transverse arrowheads likely to be broadly contemporary to the Grooved Ware found here and also in the Topsham 1974 excavations. However the 1974 excavations did not produce probable Early Neolithic material as Wessex Close has done. The assemblage is multi-period and derives from a range of different activities over a long period of prehistory.

6.4 Roman pottery *by Mark Corney*

The pottery assemblage comprised 2839 sherds of Romano-British pottery weighing 64669g. The assemblage is in generally good condition with an average sherd weight of 20.7g, including amphorae, and 14.6g excluding amphorae. Full details of the analysis are held in the project archive.

The fabrics and forms

The sherds were sorted into fabric groups and identified and coded, where appropriate, using the National Roman fabric reference series (Tomber and Dore 1998) and the Exeter Fabric

Series (Holbrook and Bidwell 1991). Most of the coarse wares are local in origin and these were classified into general classes according to form and fabric type. The sherds were quantified by sherd count, weight and EVE's by rims, the latter totalling 30.94 vessels. Tables 1-6 provides a summary of all the defined fabrics and full details will be found in the project archive. The well-known wares are not described in detail and the reader is referred to the National Roman and Exeter fabric reference series for these (ibid.).

Imports

Samian Ware

SGSAM	South Gaulish Samian, La Graufesenque (LG)
CGSAM	Central Gaulish Samian, Lezoux (LEZ)
EGSAM	East Gaulish Samian, (RHZ) and (SIN)
(RHZ) =	Rheinzabern; (SIN) = Sinzig

Amphorae

BAT AM 1	Baetican Amphorae 1 (Dressel 20)
BAT AM 2	Baetican Amphorae 2 (Dressel 20)
GAL AM 1	Southern Gaulish amphorae (Gauloise 4)

Fine Wares

TN1	Gallo-Belgic Terra Nigra
CG BS	Central Gaulish black-slipped ware
MOS	Moselkeramik black-slip ware
KOL CC	Cologne-Rhineland colour-coat

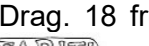
Mortaria

SOL	Soller (Rhineland)

Samian ware

201 sherds of samian ware weighing 3295g were recovered representing 7.3% by number and 7.6% by weight of the assemblage, excluding amphorae. The material falls into two distinct chronological groups. The first century South Gaulish products are dominated by Flavian types although a small amount of Claudio-Neronian material is present. When viewed with other phase 1 ceramics, the focus for use probably falls between *c.* 65/70 and 90AD. The lack of Les Martres de Veyres products and Hadrianic to earlier Antonine Central Gaulish wares suggest that after the late 1st century, samian importation did not recommence until after *c.* 160. This is reinforced by the close correlation between the dating of Central and Eastern Gaulish products with other imports such as mortaria, Continental fine wares and local coarse wares (see below).

South Gaulish (Table 4)

98 sherds weighing 652g of South Gaulish samian, all from La Graufesenque, were recovered. Only 5 of the sherds are from stratified phase 1 contexts; the bulk of assemblage occurring as residual sherds in phases 2, 3 and later. A small number of pieces are of certain pre-Flavian date: two sherds from a Ritterling 8 cup, probably the same vessel from Period 6 contexts 105 and 1438, Drag. 15/17 from contexts 141 and 1100, and a Drag. 24/25 from 105 and 1282. A Drag. 24/25 from 1282 is stamped by Murranus who worked from *c.* 45-90. The stamp is die 8a -  and being on a Drag. 24/25 must date to his earlier period of production *c.* 45-65. A Drag. 18 from 487 is signed by Habitus, a pre-Flavian potter working *c.* 40-70, die 1a -  . Vessels signed by Murranus and Habitus have previously been recorded from Exeter (Holbrook and Bidwell 1991, 46-55).

Form	% by No.	% by Weight	EVE (Rim) %	Date/Comment
Ritt. 8	2	0.9	0.10	Claudio-Neronian
Drag. 15/17	2	0.8	-	60-75
Drag. 18	24.5	40.3	0.60	70-100. One example from 487 stamped OFABITI (HABITUS) of La Graufesenque – Neronian. Worn and illegible stamp on example from 1004
Drag. 18/31	6.1	15.6	0.08	90-100
Drag. 24/25	3	14.4	0.50	Stamped MVRRAN from 1282. MVRRANVS of La Graufesenque. Pre-Flavian
Drag. 27	5.1	1.7	0.22	Flavian
Drag. 29	9.3	5.7	0.12	60-80
Drag. 35	2	0.8	-	Flavian
Drag. 37	7.1	8.4	-	Flavian
Indeterminate	38.9	11.4	-	Mainly small chips
Total	100	100	1.62	

Table 4: South Gaulish (La Graufesenque) samian expressed as a percentage by form

The bulk of the South Gaulish assemblage is mid to late Flavian in date with plates/platters Drag. 18 and 18/31 dominating. A Drag. 18/31 from context 1361 has a rivet repair hole. Cups are represented by Ritterling 8, Drag. 24/25, Drag. 27 and Drag. 35. Decorated vessels comprise Drag. 29 and 37. All the decorated vessels are represented by small sherds with few diagnostic features although the Drag. 37's may best be dated to the period *c.* 70-90.

Central Gaulish (Table 5)
87 sherds weighing 2030g of Central Gaulish samian, all from Lezoux, were recovered, the majority from phase 2 deposits. The overall date range of the Central Gaulish assemblage falls in the later stages of the industry with forms only becoming common after *c.* 170, such as the Drag. 38 and Drag 45 mortarium featuring heavily. A large proportion (60% EVE) of a Drag. 38 from 1492 is signed by Severianus of Lezoux, probably die 2a - 

, dated *c.* 160-200.

Form	% by No.	% by Weight	EVE (Rim) %	Date/Comment
Drag. 18/31	11.5	6.2	0.19	Illegible stamp fragment from 411
Drag. 31	1.1	0.2	0.05	2nd century
Drag. 33	1.1	0.1	0.04	2nd century
Drag. 36	3.4	0.7	-	160-200
Drag. 37	17.3	22.2	0.77	160-190. Style of Advocisus from 1491.
Drag. 38	24.1	39.6	0.98	Five conjoining sherds from 1492 signed SEVERIANIMA. Severianus 170-200
Drag. 45	8.1	25.8	-	Lion-head spout from 1003
Indeterminate	33.4	5.2	-	Mainly small chips
Total	100	100	2.03	

Table 5: Central Gaulish (Lezoux) samian expressed as a percentage by form

The decorated vessels, all Drag. 37, are largely represented by rims and small, undiagnostic body sherds. Two vessels provide closer dating. Two large conjoining sherds from context 1491 are from an extremely worn mould, the ovolo is virtually smooth and detail is obscure. A cupid, again very blurred, may be D251, used by Advocisus dated 160-190. Context 1505 contained two large conjoining sherds with a vine leaf and scrolling lines. This is in the style of Cinnamus or Paternus and has a likely date range of *c.* AD 150-90.

East Gaulish (Table 6)
16 sherds weighing 613g of East Gaulish samian was recovered. The majority are Rheinzabern products although small quantities of Sinzig products are also present. The decorated vessels,

a single sherd from a Drag. 30 and the remainder Drag. 37, are largely represented by rims, footrings/bases and small, undiagnostic body sherds. After the Drag. 37, the most common form is the Drag. 45 mortarium. All of the East Gaulish products are likely to date to the late 2nd to mid-3rd century.

Form	% by No.	% by Weight	EVE (Rim) %	Date/Comment
Drag. 18/31	6.3	4.6	-	SIN. Late 2nd – Mid 3rd century
Drag. 30	6.3	0.7	-	RHZ. Late 2nd – Mid 3rd century
Drag. 37	18.7	75.3	-	RHZ. Late 2nd – Mid 3rd century
Drag. 45	43.7	16	0.06	RHZ; SIN. Late 2nd – Mid 3rd century
Indeterminate	25	3.4	-	Mainly small chips. RHZ. Late 2nd – Mid 3rd century
Total	100	100	0.06	

Table 6: East Gaulish samian expressed as a percentage by form. (RHZ) = Rheinzabern; (SIN) = Sinzig

Other imported wares (Table 7)
The imported fine wares fall into two chronologically distinct groups broadly mirroring the samian ware. The earliest group is represented by Gallo-Belgic imports comprising 13 sherds of Terra Nigra, all from platter form CAM 16 and 3 sherds of an imported Butt Beaker, CAM 113. The latter sherds are from the same vessel but from three different contexts. The CAM16 platter is a well-known type which occurs up to *c.* 85 AD and is represented from 1st century military contexts in Exeter (Rigby 1991, 77). No pre-Flavian South and Central Gaulish fine-wares are present, again emphasising a Flavian date for the earliest Roman activity on the site.

Fabric	% by No.	% by Weight	EVE (Rim) %	Form(s)
TN 1	0.3	0.2	0.25	Cam. 16
Butt Beaker	0.1	0.1	0.54	Cam. 113
MOS	1.5	0.6	0.3	Beaker
LEZ CC	0.2	0.1	0.17	Cup
KOL CC	1.2	0.5	0.47	Beaker
Total	3.3	1.5	1.73	

Table 7: Imported fabrics and forms expressed as a percentage of the total assemblage (excluding amphorae)

Late 2nd to mid-3rd century imported fine wares from Central Gaul and the Rhineland form 3.3% by number and 1.5% by weight. Three sources and types were identified: Moselkeramik, Lezoux Colour Coat and the Cologne region. The fills (1490-1492) of cess pit F1405 produced a significant group of imported fine wares associated with Rhineland mortaria and late 2nd – mid 3rd century samian. These including a near complete Moselkeramik folded beaker and the base and wall of a Lezoux Colour Coat cup, Drag. 40. The date range of the imported fine wares is in close accord with the Central and East Gaulish samian, indicating an intensification of activity from the later 2nd century.

Imported mortaria (Table 8)
A small group of imported mortaria are Rhineland products in a fabric typical of Soller. The form, Exeter C56-57, with corrugated body, is dated to *c.* 150-250 AD and complements the dating of the imported colour-coated wares from the Rhineland and East Gaulish samian.

Fabric	% by No.	% by Weight	EVE (Rim) %	Form(s)
SOL	1.0	7.9	0.77	Exeter C56-7
Total	1.0	7.9	0.77	

Table 8: Imported mortaria expressed as a percentage of the total assemblage

Amphorae (Table 9)
The amphorae assemblage is dominated by Baetican products (BAT AM 1 and BAT AM 2) which combined represent 89.3% by weight of all amphorae. Both fabrics occur in phases 1 and 2 deposits and although BAT AM 2 is frequently associated with the later output of the Baetican industry it does occur in some quantities at the Neronian fortress of Usk (Manning 1993, 367). The majority are body sherds and from Dressel 20 olive oil containers. GAL AM 1, a fabric typical of Gauloise 4 amphorae from southern Gaul, probably containing wine, make up for 8.7% by weight.

Fabric	% by no. of sherds	% by wt	EVE	Form
BAT AM 1	40.4	56.1	0.26	Dressel 20
BAT AM 2	29.5	33.2	0.22	Dressel 20
GAL AM	26.9	8.7	0.3	Gauloise 4
Other	3.1	2.0	-	Indeterminate
Total	100	100	0.78	

Table 9: Amphorae

Romano-British products

Romano-British fine wares
NFCC New Forest Colour Coated
OXONCC Oxfordshire Colour Coated

Romano-British coarse wares
DORBB1 South-east Dorset Black-Burnished Ware
SOWBB1 South-Western Black-Burnished Ware
SOWBB1(F) South-Western Black-Burnished Ware-fine
SOD RED South Devon Ware
NORT Norton Fitzwarren storage jars
OXIDMISC Locally made oxidised sandy wares

Romano-British Coarse Wares (All percentage totals given exclude amphorae.)

South-East Dorset BB1 (DORBB1) accounts for 18.2% of the assemblage by number and 20.5% by weight. The forms are referenced to the Exeter type series (Holbrook and Bidwell 1991). The identified range of forms are as follows. Type 20/24 jars with obtuse lattice decoration account for 33.3% (based on rim EVE). Flat rim bowls, Type 43, account for 11.9% (rim EVE). Plain rim dishes, Types 56-59, account for a further 25.2% (rim EVE) and conical flanged bowls, Type 45, form 29.2% (rim EVE). The remaining 0.4% comprises bead rim jars of first century type (rim EVE).

South-Western BB1 (SOWBB1) accounts for 14.8% by number and 6.5% by weight. Identified forms include Bead-rim jars, Types 7-10, accounting for 18.8% (rim EVE), everted-rim jars, Types 19-26, accounting for 59.6% (rim EVE), flat-rim bowls, Types 65-70, accounting for 9.2% (rim EVE) and plain-rim dishes, Types 90-94, accounting for 12.4% (rim EVE).

South Devon Reduced Ware (SOD RE) accounts for 16.3% by number and 23.6% by weight. The mains forms represented are Type 4 jars with grooved rims, which account for 73% (rim EVE), Type 1 large storage jars accounting for 3.6% (rim EVE), Type 15-16 conical flanged bowls which accounting for 7.2% (rim EVE) and plain rim dishes, Type 17, which account for 3.3% (rim EVE). Both Type 13 flat rim bowls and lids, Type 19, account for 0.8% (rim EVE).

Fabric	% by No.	% by Weight	EVE (Rim) %
DOR BB1	18.2	20.5	11.29
SOW BB1	14.8	6.5	2.18
SOD RE	16.3	23.6	7.2
EX GRIT	2.4	3.3	0.34
SW GREY	2.5	6.7	0.05
NORT	0.6	1.2	-
FINE GM	0.7	0.4	0.02
GSW	4.9	4.0	0.7
FLAGONS	11.5	7.3	1.77
OXID MISC	8.8	3.4	0.22
OXON CC	0.6	0.6	0.11
NF CC	0.4	0.5	0.29
Unsourced	6.7	4.9	-
	100	100	24.17

Table 10: Romano-British products

Grey or black sandy wares (GREY) account for 4.9% by number and 4.0% by weight. The sources are undoubtedly local and the majority of the sherds are body sherds, mainly from jars.

Oxidised, sandy wares (OXIDMISC) account for 8.8% by number and 3.4% by weight. The fabrics represented include sandy wares and sandy with rounded quartz grains wares. The range of identifiable forms is restricted and is dominated by jars and storage jars.

Norton-Fitzwarren type ware and South-Western Grey Storage jars (NORT and *SWGREY)* products account for 3.1% by number and 7.9% by weight. Large storage jars, including examples with stabbed rims and impressed body decoration, are represented.

Flagons
The total for flagons account for 11.5% by number and 7.3% by weight; the majority being body sherds. Very few rim sherds were present and total 1.77 vessels by rim EVE; all rims are from ring-neck types. Exeter fabrics (Holbrook and Bidwell 1991) dating to the 1st to early 2nd century dominate:

406 - account for 14.6% by number and 23.3% by weight of all flagons.
435 - account for 58.1% by number and 32.5% by weight of all flagons.
440 - account for 4.3% by number and 6.1% by weight of all flagons.

Miscellaneous Flagons - accounts for 22.9% by number and 38.1% by weight of all flagons. The majority of these products are likely to originate in South West Britain, including possible north Wiltshire products. Three sherds from context 143 are probably from the Verulamium region.

Romano-British Fine Wares
The Romano-British fine wares are represented by a small number of sherds accounting for only 0.9% by number and 1% by weight. All are products of the Oxford (OXONCC, Young 1977) and the New Forest (NFCC, Fulford 1975) industries. A restricted range of forms are present. Oxford types C45 and C51, dated *c.* 240-400 and mortarium C97, dated *c.* 300-400. New Forest types include Type 27 beakers, closed forms and mortarium Type 103 with an overall date range *c.* 270-400. All of the sherds are small and lack fine details of variants that would allow closer dating.

The assemblage

Phase 1
A small number of features are assigned to phase 1 but 1st century material, including South Gaulish samian, flagons in fabrics 406 and 435 and amphorae is present in large quantities in phases 2 and 3 demonstrating a high degree of re-deposition and residuality.

A series of ditches or gullies (F1004, F1009, F1017, F1019 and F1120), a pit (F1449), a well (F1406) and two cremation burials (F1275 and F1394), belong to phase 1 and produced small ceramic assemblages of later 1st century date with a likely latest deposition date of *c.* 85 based on the evidence of associated samian ware and Gallo-Belgic products. F1004 also produced three sherds from an SOD Type 4 jar. Although SOD fabric vessels date mainly from the 2nd century onwards, Holbrook and Bidwell (1991, 178) note that Type 4 jars have been recorded from a number of military contexts in Exeter. The upper fill (1122) of phase 1a ditch F1120, also produced a single rim from a DORBB1 type 45 bowl of late 3rd century+ date which may be intrusive.

The two cremation burials, F1275, F1394, produced truncated vessels in Fine SOWBB1; the rims were absent. The lower body of the vessel in F1275 was decorated with lightly burnished inverted chevrons typical of 1st century types. F1275 also produced a number of thick body sherds from either a large flagon or small amphora in an oxidised, micaceous fabric, possibly of Gallic origin.

There is little ceramic evidence for activity from the late 1st to mid-2nd century.

Phase 2
From *c.* 160, Central and East Gaulish samian, imported East and Central Gaulish fine wares and Rhineland mortaria provides a clear date for the renewal of occupation. This date is reinforced by DORBB1 and SWBB1 types which become common from the mid-2nd century. These include SWBB1 Type 65 bowls from contexts 1300, 1383 and Type 90-94 dishes from 515 and 1134. DORBB1 Type 40-43 bowls from F1099; (1110, 1134 and 1491). The East Gaulish/Rhineland fine wares and mortaria suggest direct access to these products via coastal trade through local harbours such as that suspected at Topsham.

Activity clearly continues into the early 4th century as evidenced by the presence of conical flanged bowls in DORBB1, type 45, which do not occur before the end of the 3rd century. Phase 2 sees a significant increase in presence of SOD vessels, especially type 4 jars with grooved rims which become increasingly common in Roman Exeter from the mid-3rd century onwards (Holbrook and Bidwell 1991, 21-3). By weight SOD forms 23% of the assemblage and is the largest fabric group. Products of the New Forest are present and cannot have reached the site before the late 3rd century; all are small sherds from the more common forms such as type 27 beakers or mortaria and close dating is not possible beyond *c.* 270-370. Oxford products are also present in small quantities, including an Oxford mortarium type C97 dated 300+ from 1102, fill of F1007.

The fills of cess pit F1405 produced a large assemblage of mid-3rd to early 4th century date pottery including much of a MOS folded beaker, a Drag 38 by Severianus and a SOL mortarium from the lower fills (1491, 1492), three SOD type 4 jars, SEDBB1 type 45 bowls and an OXONCC type C51, a type dating from *c.* 240-400. The type 45 bowl and OXONCC sherds are from the upper fill (1361). The material from F1405 comprises many large and conjoining sherds in fresh condition and a final deposition date for the upper fill (1361), in phase 3, of no later than the end of the first quarter of the 4th century is probable (Fig. 33, 6-7).

Phase 3

The phase 3 deposits produced little closely dateable material and much is clearly residual including 2nd century CG samian from F1258 (1293) and an early 3rd century Rhineland Colour Coat beaker from F1295 (1296). The rim of a conical flanged bowl of 4th century date in DORBB1, type 45, was recorded in context 143. No examples of the latest Roman coarse wares known from Exeter and the South West are present (Bidwell 2016). The ceramic evidence, coupled with numismatic evidence (see discussion below) suggests that activity ceases before the second quarter of the 4th century.

Discussion

The first century pottery has close affinities with the military assemblages from the fort at Topsham, 500m to the southeast of the site and the St Loye's military depot 2.7km to the northwest. Both are considered to have been held until *c.* 75AD (Bidwell forthcoming). The assemblage is more restricted in character which, apart from the two cremation vessels, F1275 and F1394, is largely composed of imports including Baetican amphorae, Gallo-Belgic wares and South Gaulish samian. Apart from flagons in Fabrics 406 and 435 other Fortress Wares are conspicuous by their absence. Although much of the samian (including the two legible stamps) is clearly pre-Flavian, the Drag. 37 sherds could be as late as *c.* 80-90AD. No imported pre-Flavian fine wares are present. The bias towards fine wares and flagons in the 1st century assemblage is marked and it is tempting to suggest that at least some of this may be derived from disturbed cremation burials. This could account for the significant 1st century material recovered from phase 3a pits F1277 (a large part of a Drag. 18, an SEDBB1 pedestal base and flagons in Fabrics 406 and 435), F1281 (a substantial part of a Drag. 24/25 of MVRRANVS, 30% of a TN Cam 16 platter and a GB Cam 113 Butt Beaker) and ditch F1016 (TN Cam. 16, Butt Beaker CAM. 113 and an SEDBB1 bead-rim). Pit F1281 and ditch F1016 are only 5m apart and the Cam 113 Butt Beaker sherds and TN Cam 16 from each feature are probably from the same vessels.

The bulk of the assemblage dates from the later 2nd century to the early 4th century with a strong showing of material dating *c.* 160 and *c.* 250 with fine wares and mortaria imported from the Rhineland and eastern Gaul (Fig. 33, 5, 7). Occupation clearly continues into the 4th century but from *c.* 250 there is a marked bias towards coarse wares, predominantly SOD jars and SEDBB1 dishes, jars and from *c.* 300 type 45 bowls. Later Romano-British fine wares and mortaria, products of the New Forest and Oxford industries, are conspicuous by their rarity and comprise only 0.9% by number and 1% by weight. This may suggest a downturn or change in the character of the occupation with restricted access to the normally comparatively common later fine wares and mortaria. From the evidence of the finds it is likely that activity on the site ceases by the end of the first quarter of the 4th century as the latest identifiable coin is a barbarous radiate based on a late 3rd century Gallic Empire type and the assemblage lacks the normally prolific issues of the Constantinian to Valentinianic periods (Naomi Payne, pers. comm.).

Illustrated sherds (Fig. 33)

Form/Type references from Holbrook and Bidwell 1991.

Oven F553

1 (397) SEDBB1 Type 45.3b bowl. Last quarter 3rd – first quarter 4th century. (Holbrook and Bidwell 1991, 109).
2 (397) SEDBB1 Type 20.1g or h. Last quarter 3rd – first quarter 4th century. (Holbrook and Bidwell 1991, 103).
3 (399) SOD Type 4 jar with lightly burnished acute lattice.
4 (399) SOD Type 4 jar.

Oven F1140
5 (1142) SOL mortarium Type C56 with corrugated body, *c.* 150-250. Heavily used before discard with very few grits surviving. The type is well represented in early third century deposits at New Fresh Wharf, London where it is closely associated with an important group of early to mid-third century East Gaulish samian supported by dendrochronology (Millar *et al.* 1986, 112).

Pit F1405
6 (1361) SEDBB1 Type 45.1e. Late 3rd century+. (Holbrook and Bidwell 1991, 109).
7 (1361) SOD Type 4 jar with crude 'X' grafitto on shoulder.
8 (1491) SOL mortarium Type C56 with corrugated body, *c.* 150-250. These example have seen heavy use and no grits survive. For dating see comments for no. 5.

6.5 Metalwork *by Naomi Payne*

The metalwork assemblage includes coins, dress accessories, structural metalwork, household objects/fittings and material relating to metalworking. The non-ferrous metal finds of Roman date are in poor condition, with flaking and powdery surfaces where they survive at all. Most are incomplete and a few items cannot be identified with certainty. The medieval buckle is in better condition, with its surfaces intact. The ironwork is generally in a highly fragmentary condition, with few objects other than the nails identifiable with certainty. All of the ironwork was x-rayed to aid identification with the exception of the definite nails and the items which are too large. Nevertheless there are 137 unidentified pieces of iron from Roman contexts. Most of these are amorphous lumps or straight (or occasionally curving) rod fragments with one or both ends broken. It is likely that some of the rod-like fragments formed part of iron tools or fittings. An additional 16 unidentified iron fragments came from post-medieval contexts. The unidentifiable iron fragments have not been described within this report, but a full catalogue is included in the archive. The identifiable metalwork has been divided into functional categories and is described below.

Coins

The excavation produced eight (or possibly nine) Roman copper alloy coins and a silver coin dating from the early 16th century. The coins are listed by context and phase in Table 11.
Other Roman coins which have previously been found on the site include:

- Coins of Faustina, Marcus Aurelius and Antoninus Pius found in Retreat Field between 1995-1998 (not clear how many of each but presumably one) (Sage and Allan 2004, fig. 21 and 35, no. 21a);
- A 1st century *as* of an unidentified female found in Retreat Field before 1998 (Sage and Allan 2004, fig. 21 and 35, no. 21b);
- A sestertius of Hadrian and a radiate of Victorinus recovered during the 2014 evaluation of Wessex Close by Oakford Archaeology (Steinmetzer 2014, 12).

The Roman coins from the excavations range in date from AD 46-47 to *c.* 275-285 and previous finds reflect this general span. An additional group of five worn bronze coins of Augustus (27BC-AD14) were apparently found in Retreat Field before 1985; however the recorded findspot is not precise enough to be sure they were located within the same area. The presence of these coins, and the sestertius of Claudius, suggests a military origin for the site in the first century. Very little official Claudian bronze coinage made it to Britannia and sites where it is found tend to be official or military installations (Walton 2012, 82).

The only later coin from the excavation is a silver Venetian soldino of Doge Leonardo Loredan dating from the period 1501-1521. This was found in subsoil.

Object no.	Context	Context description	Period	Ruler	Date of coin
20	106	Demolition deposit	R-B Ph3b	Claudius II	268-70
15	141	Demolition deposit	R-B Ph3b	Uncertain (illegible radiate or nummus)	*c.* 230-402
3	1000	Topsoil		Possible fragment of radiate or nummus	*c.* 230-402 (?)
2	1098	Layer of soil around stone pads 1081, 1082 and 1083	R-B Ph1b	Claudius (41-54)	46-47
6	1102	Secondary fill of ditch cut 1101 (F1007)	R-B Ph3a	Uncertain	*c.* 43-250
8	1161	Upper fill of pit F1160	R-B Ph3a	Hadrian (117-138)	117-138
9	1161	Upper fill of pit F1160	R-B Ph3a	Uncertain	*c.* 43-250
11	1283	Upper fill of pit F1281	R-B Ph3a	Barbarous radiate	*c.* 275-285
13	1001	Subsoil		Doge Leonardo Loredan (1501-1521)	1501-1521
21	1358	Mixed layer within Structure 4	R-B Ph3a	Gordian III (AD 238-44)	241-243

Table 11: List of coins with contexts and phases

Dress accessories

Copper alloy dress accessories of Roman date included one brooch, two finger rings and a probable bracelet fragment. In addition, seven Roman features and deposits (ditch F107, demolition deposit 130, oven F553, oven F1150, pit F1160 and cess pits F1405 and F1507) produced a total of 90 iron hobnails, 63 of which were from one complete shoe. A medieval buckle and a post-medieval button were also recovered. Table 12 lists the dress accessories by context and phase.

The two Roman copper alloy finger rings were recovered from the backfill of cess pit F1405 and ditch F1007. Object 30 is near complete and Object 5 is a fragment (Plates 19-20). Both of the rings are of similar form, with flat hoops which widen around a projecting circular bezel that contains a glass intaglio. The more complete ring has a subtle carination at the shoulders. Overall it measures 20.6mm from side to side, and the bezel has a diameter of 9mm. Its blue-green glass intaglio is circular with a diameter of 6mm. It has a slightly raised border around the edge but no further definition. The fragmentary ring's intaglio is a lighter blue-green. It is slightly ovoid, 7mm by 7.8mm, again with a raised border but it also has three equally spaced raised elements inside the border. In this respect and in its general form and size it is very similar to a ring fragment found in Exeter (Holbrook and Bidwell 1991, 241-2, no. 3). Martin Henig describes the decoration on the Exeter example as 'showing a very simple two-pronged figure' (his intaglio type 5) and dates the form (his ring type VIII) to the third century AD.

Object 16 is a probable Roman strip bracelet fragment found in cess pit F1405 (Plate 21). This is a flattened copper alloy rod, 33.5mm in length, with a lenticular profile. At one end there is a splayed terminal which measures 8mm by 2.7mm. There is a break at the other end. On each side of the terminal there is a hint of decoration in the form of three rounded mouldings which increase in size towards the outer edge. No further decoration is visible, but the object is very worn.

Object 23 is an incomplete copper alloy T-shaped brooch which was found in pit F1405 (Plate 22). The surviving portion includes most of the wings and the upper part of the bow. The cylindrical wings conceal the axis bar for a hinged pin, which is missing. Their original width would have been c. 37mm. The bow has a D-shaped profile (curving front, flat back) and projects

forwards/curves down from the wings. It is decorated with two moulded circular bosses positioned side by side just above the broken edge.

Object no.	Context	Context description	Phase	Object description	Date
1	1003	Cleaning over building		Small copper alloy buckle with plate	*c.* 1150-1400
5	1102	Secondary fill of ditch cut 1101 (F1007)	R-B Ph3a	Fragment of copper alloy finger ring with glass setting	*c.* 3rd century
16	1372	Fill of F1405	R-B Ph2	Probable copper alloy bracelet fragment	Roman
22	434	Upper fill of ditch F107	R-B Ph2	11 x hobnails	Roman
23	1361	Backfill of cess pit F1405	R-B Ph3a	Incomplete copper alloy T-shape brooch	*c.* 43-175
30	1361	Backfill of cess pit F1405	R-B Ph3a	Copper alloy finger ring with glass setting	*c.* 3rd century
120	100	Ploughsoil	Mod	Copper alloy button	C17-18
142	130	Demolition deposit	R-B Ph3b	Hobnail	Roman
165	130	Demolition deposit	R-B Ph3b	Hobnail	Roman
217	399	Burnt deposit in raking pit of oven F553	R-B Ph3a	Hobnail	Roman
230	1161	Upper fill of pit F1160	R-B Ph3a	10 x hobnails	Roman
231	1522	Fill of cess pit F1507	R-B Ph1b	63 x hobnails, the remains of a shoe	Roman
265	1372	Fill of cess pit F1405	R-B Ph2	Iron hobnail	Roman
267	1152	Fill of stoking pit and oven chamber within oven F1150	R-B Ph3a	Iron hobnail	Roman
268	1152		R-B Ph3a	Iron hobnail	Roman

Table 12: List of dress accessories with contexts and phases

Object 232 is the remains of a hobnail shoe of Roman date. The iron hobnails were found within cess pit F1507. Although there were no organic remains, the arrangement of the hobnails indicated that they were originally affixed to a single adult-size shoe. In total there were 63 hobnails. This quantity and heavily studded arrangement suggests a shoe as opposed to a sandal (Crummy 1983, 53).

Object 1 is a single-loop buckle with ornate outside edge and incomplete folded sheet plate, which was recovered from cleaning layer 1003. Its bar is offset and narrowed. The outside edge has two knops which flank four moulded ribs, incorporating a pin rest in its form. This form was in fashion from the later 12th to the late 14th centuries (Egan and Pritchard 2002, 76). Object 120 is a copper alloy button of 17th or 18th century date, which was recovered from topsoil. The button is flat and circular with a diameter of 18mm. On the back there is an incomplete integrally cast and drilled shank. The front of the button is undecorated.

Household utensils and furniture

Metal household items of Roman date included a gridiron, a socketed candlestick, a box or drawer fitting and four certain or probable iron blade fragments, most likely derived from knives. The blade fragments may of course have had non-domestic (or indeed multiple) functions. Roman contexts also produced a possible iron bucket hook fragment and a possible key

fragment. An additional iron blade fragment was recovered from a post-medieval quarry pit. This material is summarised by context and phase in Table 13.

Object no.	Context	Context description	Phase	Object description	Date
10	1282	Lower fill of pit F1281	R-B Ph3a	Copper alloy box or drawer fitting	Roman
21	397	Fill of raking pit of oven F553	R-B Ph2	Iron gridiron	Roman
36	500	Heat on NW side of hearth F499	R-B Ph3a	Probable iron knife or other blade fragment	Roman
44	501	Fill of hearth F499	R-B Ph3a	Probable iron knife or other blade fragment	Roman
103	1163	Fill of ditch segment 1162 (F1016)	R-B Ph2	Iron knife or other blade fragment	Roman
158	1361	Backfill of pit F1405	R-B Ph3a	Iron socketed candlestick	Roman
167	1023	Fill of post-medieval quarry pit F1022	P-M	Iron knife or other blade fragment	Post-medieval
188	1312	Upper fill of well F1311	R-B Ph2	Possible iron key fragment	Roman
192	1134	Fill of ditch F1496	R-B Ph3a	Possible iron bucket hook fragment	Roman
200	308	Demolition deposit	R-B Ph3b	Probable iron knife or other blade fragment	Roman

Table 13: List of household items with contexts and phases

Object 10 is an incomplete Roman copper alloy box or drawer fitting, found in pit F1281 (Plate 23). The fitting consists of a bar of circular profile, 4.5mm in diameter and with a total length of *c.* 130mm. Part is curved but the remainder is distorted. At the end of the curved section there is a slightly narrowed element, which curves back on itself. The end is broken. Attached to the curving element there is a double-spiked loop and at the other (distorted) end the terminal narrows to a point, probably broken through wear. This object would have been symmetrical with a double-spiked loop attached to each terminal. The blades of the loop would have been set into a wooden box or drawer and the curving bar would have acted as a drop handle. This example is broadly similar to a more complete handle with both double-spiked loops *in situ* which was excavated in Colchester (Crummy 1980, 81-82, no. 2134).

Object 21 is a near-complete iron gridiron which was recovered from oven F553 (Plate 24). The gridiron measures 340mm by 310mm by 100mm. It has two side-pieces which terminate in short legs. The horizontal elements of the side-pieces support eight equally-spaced crossbars. One of the crossbars is incomplete, as is one of the legs. The ends of each square-sectioned crossbar have been inserted into the side-pieces and are set at 45 degrees to the side-pieces. A similar gridiron was found at the Roman fort at Newstead, Scottish Borders (Curle 1911, 274, plate LIII, 2), although the Newstead gridiron has only six cross bars, with the two outer bars being thicker than the four in the middle. Gridirons were used for cooking in domestic contexts (William Manning, pers. comm.).

Object 158 is a socketed candlestick, which was found in cess pit F1405. The candlestick is L-shaped. It is 110mm in length and comprises a spike and a socketed element set at right-angles to each other. The spike would have been hammered horizontally into a wooden beam so that a candle could be placed into the vertically set socket. Candlesticks of this type more commonly appear in 13th century and later contexts (Goodall 2011, 300), but there is an example with a broken spike from a Roman context at the Marlow Car Park in Canterbury (Blockley *et al.* 1995, 1076 and fig. 466, no. 739). There are also unpublished Roman examples from Silchester (William Manning, pers. comm.).

Object 188 is possibly the bit end of an L-shaped iron lift-key of Roman date, which was retrieved from the upper fill of well F1311. The fragment is L-shaped with a width of 40mm. There is a recurving projection at the terminal end and the other end is broken.

Object 192 is a possible iron bucket hook fragment which came from ditch F1496. The curving linear fragment is 68mm in length and has a backwards curving terminal at one end. The other end is broken.

Structural metalwork

A reasonably large quantity of iron nails was recovered during the excavation. These are probably structural nails, at least some of which must have related to the roof of Structure 3. Overall there are 258 probable or certain nails and 42 possible nails from Roman contexts. The nails range considerably in size and form. The largest example, Object 3, is from a fill of ditch F107. It measures 232mm in length. Some nail shafts are bent or curved. There were also 57 certain nails and seven possible nails from post-medieval contexts.

Objects employed in weighing and measuring

Object 22 appears to be a small fragment from a thin copper alloy sphere filled with lead. It came from Structure 4, which also contained Roman pottery and tile. This could perhaps be the base of a hollow-cast steelyard weight of Roman date.

Objects and waste material associated with metal working

A small quantity of lead waste and offcuts was recovered. There were also two iron fragments which may derive from blacksmith's tongs. These items are listed by context and phase in Table 14.

Object no.	Context	Context description	Phase	Object description
7	1122	Upper fill of ditch F1120	R-B Ph1a	Lead fragments (4 fragments, 10g)
7	143	Demolition deposit	R-B Ph3b	Possible iron smithing tongs fragment
8	143	Demolition deposit	R-B Ph3b	Possible iron smithing tongs fragment
20	1428	Clay lining to lead working pit F1427	R-B Ph3a	Lead casting waste (74 fragments, 150g)
60	105	Cleaning context		Lead dross
61	105	Cleaning context		Probable lead offcut
233	1429	Upper fill of lead working pit F1427	R-B Ph3a	Lead casting waste (17 fragments, 23g)

Table 14: List of objects and waste material associated with metalworking with contexts and phases

Objects 7 and 8, from Roman demolition deposit 143, are both iron rod fragments. Object 7 is a large, well-made rod of round section which is just possibly an arm from a pair of smithing tongs. One end is tapered and the other (broken) end is narrowed and curved. The length of the fragment is 180mm, so the tongs would be on the small side, but not unfeasibly so. Object 8 is very similar in dimensions and form to Object 7, but is a less complete fragment.

Roman ditch F1120 and lead working pit F1427 both produced quantities of lead casting waste or undiagnostic lead fragments. There were also two pieces of lead from cleaning context 105, including Object 60, a probable offcut, and Object 61, a large piece of lead dross. A large amount of residual Roman material was recovered from context 105, so it is possible that these lead items are also Roman in date.

Items of uncertain use

Several items which derive from Roman contexts are distinctive but their exact use is uncertain. These objects are listed by context and phase in Table 15.

Object no.	Con-text	Context description	Phase	Object description
2	158	Fill of linear ditch (F107)	R-B Ph2	Iron band or binding
24	1400	Fill of cess pit F1405	R-B Ph2	Copper alloy binding strip
27	1361	Backfill of pit F1405	R-B Ph3a	Iron strap or binding, width 25mm
32	1484	Lower fill of well F1311	R-B Ph2	Possible lead/iron counterweight
35	1153	Fill of pit F1154	R-B Ph3a	Iron socketed hook
135	1301	Upper fill of cess pit F1297	R-B Ph3a	Iron strap or binding, width 31mm
147	1300	Third fill of cess pit F1297	R-B Ph3a	Iron strap or binding, width 22mm

Table 15: List of items of uncertain use with contexts and phases

There are three linear iron strap or binding fragments, which are broadly parallel-sided and vary in width between 22mm and 31mm. Two of the strap fragments have broken across centrally placed perforations.

Object 2 is a large penannular loop with hollow convex profile, which was recovered from fill 158 of ditch F107. Its external diameter is 68mm. At its widest point it is *c.* 24mm wide and it narrows towards both terminals. It is presumably a band or binding of some sort.

Object 24 is a curved sheet copper alloy strip from cess pit F1405. It has a length of 145mm and is broken at both ends. Its width is around 15mm and it is 0.7mm thick. The strip's profile is curved, although the curve is off-centre and the profile becomes rather more L-shaped towards one end. A binding strip with a similar curve was excavated at Gorhambury, near St Albans (Neal, Wardle and Hunn 1990, 134 and fig. 130, no. 330), although it is somewhat smaller with a flatter profile, and complete, rounded, ends.

Object 32, a lead artefact which is cuboid-shaped in form, was recovered from the lower fill of well F1311. The cuboid measures 131mm by 49mm by 39mm and weighs 2282g. It appears to have three transverse holes which are spaced fairly evenly along the larger pair of long sides. One of the three does not go all the way through the object. The holes are filled with iron corrosion. Bearing in mind the context of this find, it seems possible that this object functioned as a counterweight for a well bucket, although no parallel has been found. The iron stubs could be all that remains of iron fittings which enabled its suspension. There is a thick layer of lead corrosion over most of the object, although this has flaked off in some areas.

Object 35 is an iron socketed hook, which was recovered from shallow pit F1154. In its current state (the socket is incomplete) it measures 175mm in length. Socketed hooks are not uncommon on Roman sites and could have had several functions, including lifting buckets out of wells (Manning 1985, 104).

6.6 Roman glass *by Naomi Payne*

81 sherds (251.4g) of Roman vessel glass were recovered from 16 contexts. The majority of the glass came from four features: cess pits F1297 and F1405, well F1406 and pit F1436. There were also a few sherds from subsoil, cleaning layers, a demolition deposit and the preconstruction soil. Identifiable vessel types include two cast and ground bowls with base rings, at least one ribbed bowl, a jug, a prismatic bottle, an unguent bottle and a convex cup, and possibly a cylindrical bottle and two flasks. Colours represented include greenish/colourless (50 sherds, 94.3g), polychrome (5 sherds, 75.4g), blue/green (21 sherds, 71g), emerald green (1 sherd, 6.9g), mid/dark blue (3 sherds, 2.9g), colourless (2 sherds, 0.5g) and yellow/brown (1 sherd, 0.4g). The Roman glass is summarised in Table 16.

Site area	Poly-chrome	Mono-chrome	Colour-less	Blue/ green	Bottle	Total
Subsoil (101)			1 (4.1g)			1 (4.1g)
Cleaning over Roman building (105)		1 (1g)		2 (6.2g)		3 (7.2g)
Demolition deposit (141)				1 (4.7g)		1 (4.7g)
Preconstruction soil (1050)				1 (0.8g)		1 (0.8g)
Cess pit F1297			1 (0.2g)	3 (27.3g)		4 (27.5g)
Cess pit F1405	5 (75.4g)		17 (4.7g)		34 (92.4g)	56 (172.5g)
Well F1406		1 (0.4g)		1 (2.2g)		2 (2.6g)
Pit F1436		3 (8.8g)		9 (20.2g)		12 (29g)
Cess pit F1507				1 (3g)		
Total	5 (75.4g)	5 (10.2g)	19 (9g)	18 (65.4g)	34 (92.4g)	80 (248.4g)

Table 16: Summary of Roman glass by context

Bottles

Context 1362, a fill of cess pit F1405, produced a base sherd from a blue/green glass prismatic bottle. The sherd is most likely to derive from a square bottle but it could also be from a rectangular or hexagonal bottle. A small part of the relief design is visible on the base but this is not sufficient to identify the overall design.

Context 1401, a fill of cess pit F1405, and context 1491, a fill of the same feature, produced a total of 33 fragments (85.8g) of greenish/colourless glass which may all belong to a single vessel, possibly a cylindrical bottle. The vessel has a flat circular base, *c.* 100mm in diameter, and straight, vertical sides. There is a horizontal band of abrasion positioned *c.* 20mm from the base. In total, the two contexts produced four sections with between two and nine joining sherds and a number of other sherds which do not conjoin. 11 sherds have bands of abrasion. The vessel's base is somewhat thicker than the walls, and the neck fragment, which is perhaps also from the same vessel, is thicker too. This type of bottle would have been used as tableware, unlike the blue/green bottle which would have had a more utilitarian function (Cool 2015, 125).

Bowls and cup

Five sherds (75.4g) from a single cast polychrome bowl with a base ring were recovered from context 1401, lower fill of cess pit F1405. Four of the sherds join. The glass is opaque yellow and translucent brown and has a marbled appearance rather than a distinct mosaic cane pattern (Plate 25). About 25% of the bowl survives and its full profile has been preserved (Fig. 34). It has an overall height of 49mm, sloping sides and a slightly flared rim with a diameter of *c.* 110mm. The base ring's external diameter is between 58mm and 61mm and there is a wheel-cut line on the outside surface at the rim. Bowls of this type were cut/ground from a cast blank (Price and Cottam 1998, 53) and polishing marks are evident, particularly on the external surface. Polychrome mosaic glass vessels were produced (probably in Italy) in large quantities during the late first century BC and first half of the first century AD (Price 2002, 114). The pottery found in context 1401 indicates a date in the late second to mid-third century, so if the polychrome bowl was manufactured before *c.* AD 50, it would have been in circulation for two centuries before a large part of it ended up in the cess pit. When these vessels have been found in Britain in contexts later than c. AD 100 they have often been considered heirlooms, but there is evidence that some polychrome glass vessels were produced as late as the second or even third centuries (Price 2001, 116, 120-1). Jennifer Price (pers. comm.) considers a second or early third century date appropriate for this bowl.

Roman demolition deposit 141 produced a blue/green sherd with a base ring in low relief. The base ring's external diameter was *c.* 65mm. This sherd is probably also from a cast bowl with base ring. The dating of this vessel form is *c.* AD 75-175 (Price and Cottam 1998, 53-4).

Pit F1436 produced a sherd of emerald green glass, which is probably a body/base sherd from a convex Hofheim-type cup with a diameter of *c.* 80mm. This vessel form dates from *c.* AD 43-75 (Price and Cottam 1998, 72).

A body sherd from a blue/green ribbed bowl was recovered from cess pit F1507. This dates from the 1st century AD (Price and Cottam 1998, 44).

Flasks and unguent bottle

Context 1001, subsoil, contained a greenish/colourless neck sherd which is possibly from a flask. The sherd is too small to determine the precise form of the vessel so it cannot be closely dated.

Cess pit F1297 contained a complete slightly concave base sherd with a diameter of 45mm and near vertical sides. There is an extra fragment of glass adhering to the base, which could be part of a glass disc to reduce the risk of breakage. The base is probably from a cylindrical flask of uncertain date.

Context 1003, cleaning layer over Structure 3, produced a convex sherd of blue/green glass which is probably the base of an unguent bottle dating from *c.* AD 150-300.

Jug

Well F1406 contained a small irregular sherd of blue/green glass which is probably a fragment of a ribbon handle with a vertical rib from a jug. As the precise form of the jug cannot be ascertained, this sherd is not closely datable.

Other forms

Cleaning context 105 produced a rim sherd from a transparent blue/green vessel with a rounded and slightly thickened rim. This type of fire-rounded rim is particularly common in the second to mid-third centuries (Price and Cottam 1998, 22). It is not possible to accurately estimate the original angle or diameter of the rim due to its small size, but it appears to be from a cup, beaker or jar with a vertical or slightly out-turned rim.

One of the two small blue/green body sherds from cess pit F1297 has a wavy profile, suggesting that it is from a ribbed vessel. This would be consistent with a date between *c.* AD 43-175.

6.7 Ceramic building material (CBM) *by Naomi Payne*

Introduction and methodology

In total, 3872 fragments of Roman ceramic building material weighing a total of 281.2kg were recovered during the excavations. No complete Roman tiles were present and the assemblage was in general reasonably fragmentary, with few complete dimensions (other than thicknesses) measureable, although the percentage of identifiable tile forms was much higher in some contexts than others. Some of the material is very friable and has therefore become abraded, but many of the harder fired pieces are in a fresh condition.

All fragments were cleaned, counted and weighed. They were then catalogued by context according to the minimum standards of the Archaeological Ceramic Building Materials Group (ACBMG 2002). The original form, type of fragment (for example, flange profile or incomplete profile for *tegulae*, corner piece/straight edge piece/curved edge piece or body fragment for *imbrices*) and original dimensions were recorded for each fragment, plus any other features of

note including surface treatment/decoration, *tegula* flange form, lower cutaway form and presence of paw prints or signature marks. No stamps, graffiti or tally marks were noted.

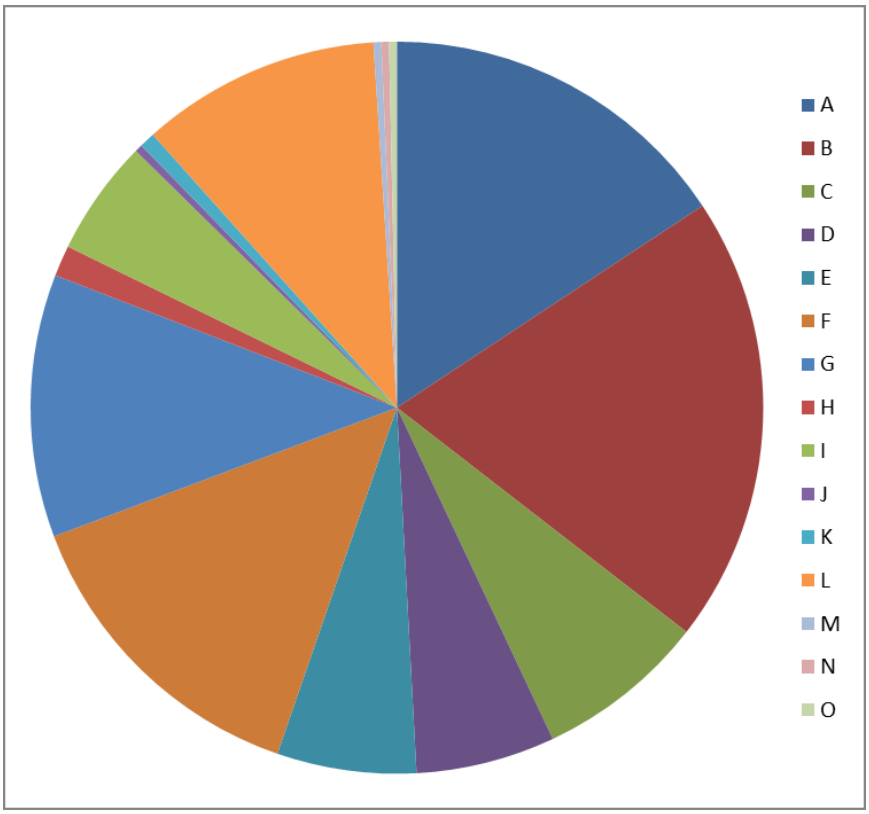
The assemblage is described below according to tile type. In addition to the material discussed in detail there were 538 pieces (57.1kg) of flat tile, most of which is likely to derive from *tegulae*, and 2149 unclassifiable fragments (22.2kg). A full catalogue of the material is contained within the archive.

Roof tile

The assemblage is dominated by *tegula* and *imbrex* roof tiles, indicating that Structure 3 may have had a ceramic tiled roof for at least part of its life.

Tegula

528 *tegula* fragments weighing a total of 115.6kg were recovered from 96 contexts. Taking into account joining fragments, this represents a maximum of 483 individual tiles. There are nine fragments with nail holes, a feature which appeared on London tiles after *c.* 160 AD (Betts 2007, 52). On the underside of the nail hole in a *tegula* fragment from context 397, there is a conical depression which may have been formed by the knocking through of a blind nail hole after firing (Warry 2006, 17). The most complete *tegula* is from context 398, fill of raking pit of oven F553. This has a complete length measurement of 360mm. One other tile has a complete width measurement. This is the tile formed from eight joining fragments from context 1475, a layer of tile, which make up a tile with an overall width of *c.* 365mm. Another tile, from context 1371, fill of cess pit F1405, has one surviving flange and a nail hole. If this nail hole was originally at the top centre of the tile as is usual (Warry 2006, 17), the full width of the tile would be in the region of 280mm.



Graph 1: Relative quantities of each type of *tegula* flange

Tile and flange thicknesses were measured where possible. Tile thickness varies between 17mm and 35.8mm, with a mean average of 24.2mm. Flange height ranges from 34.2mm to 57.6mm,

with a mean average of 44mm. There was considerable variation in the profile of the flanges. Flange profile was categorised into 15 forms, which are illustrated in Fig. 35. There is minor variation within these types, but the forms that are illustrated and allocated identification letters are considered to be the main broad types. The relative quantities of each type are presented in a pie chart (Graph 1). The most common forms are rounded (form B, 20%), square (form A, 16%), rounded with longitudinal depression along the outside edge (form F, 14%), diagonal inside (form G, 11%) and square outside/curved inside (form L, 11%).

A total of 54 *tegulae* fragments (which represent a maximum of 52 individual tiles) have certain or probable upper cutaways present. On some examples the upper flange starts to narrow some distance from the cutaway. On other examples the flange does not narrow and is cut away squarely. The tile narrows towards the upper or lower edge on some examples and the upper part of the edge is sometimes bevelled.

Fragments from a maximum of 92 *tegulae* have lower cutaways present. Four forms of lower cutaway are represented, including Warry's nos. 4 and 5 (both Group C), Warry's no. 6 (Group B) and Warry's no. 7 (a Regional form). Peter Warry has carried out a detailed study of lower cutaway forms on dated *tegulae* and suggests best fit date ranges of *c.* 100-180AD for Group B cutaways, *c.* 160-260AD for Group C cutaways and after *c*. 300 AD for the Regional forms (2006, 63). There are six examples of Warry's no. 6 (Group B) lower cutaways, nine examples of Warry's no. 4 (Group C) lower cutaways, 25 examples of Warry's no. 5 (Group C) lower cutaways and eight examples of Warry's no. 7 (Regional group) lower cutaways. There are also 44 diagonal cutaway fragments which could either be no. 6 (Group B) or no. 5 (Group C). At least four of the tiles with lower cutaways have had the upper part of the end of the flange removed diagonally with a knife. A feature of many of the no. 5 type (Group C) cutaways is that the diagonal part is knife cut, but the vertical narrowing of the outside of the flange has been achieved in the mould. Some are only very slightly narrowed but, following consultation with Peter Warry, these have been classified as no. 5 (Group C). Regional type no. 7 has previously been found only in Hampshire and the Isle of Wight, and only on villa sites (Warry 2006, 25).

A total of 38 *tegulae* have complete or partial signature marks, which are listed and categorised in Table 17. The signature marks are mostly fragmentary but the probable form can be identified in some cases. Where discernible they appear to start and finish beside the lower end as is usual (Fig. 36). The majority, 32, have been made using the fingertips. The most common form is the single fingertip semi-circle (13 examples, although as some of these are fragmentary they may have originally had additional elements). There are also a smaller number of double and triple versions (five and three respectively). Two-thirds of the signatures in Warry's survey were broadly semi-circular (2006, 15). The Topsham assemblage contains three examples of a mark which comprises two single semi-circles which intersect, a form which is quite rare (Peter Warry, pers. comm.). It was used in late (probably fourth century) production in Hampshire and was also used by the Second Augusta legion in Caerleon. All of the examples noted by Peter Warry with this signature at Caerleon had Group C lower cutaways, but none of the three examples with this signature from Topsham have cutaways present. There are also single examples of two distinct signatures, the first formed from two double semi-circles (one high and one low) and the second a fragment shaped like a number 6. Its position close to the centre of the tile suggests that the signature originally consisted of two loops joined at the top. Finally there are six fingertip line fragments which are not obviously part of curving lines but are too fragmentary to identify the original form.

The remainder of the signature marks have been applied with combs (Fig. 37). They include four single combed semi-circles and two marks which appear to consist of an overlapping combed semi-circles and a diagonal line. The latter may be a miscued attempt at intersecting semi-circles (Peter Warry, pers. comm.). Combed signatures on *tegulae* start to appear in the later third

century (Warry 2006, 91). This is just consistent with the Group C lower cutaway dating for the fragments from contexts 141 and 143.

Signature mark form	Method	No. of examples	Context
Single semi-circle	Fingertip	13	105 (x2), 308, 397, 443, 448, 1003 (x2), 1100, 1222, 1351, 1400, 1484
Double semi-circle	Fingertip	5	392, 1142, 1353, 1372, 1475
Triple semi-circle	Fingertip	3	106, 1086, 1363
2 intersecting single semi-circles	Fingertip	3	130, 143, 397
2 double semi-circles (1 high and 1 low)	Fingertip	1	308
Fragment shaped like a 6	Fingertip	1	398
Line fragments	Fingertip	6	105, 130, 398, 399, 537, 1039
Single semi-circle	Comb	4	141 (x2, both 8 teeth), 143 (at least 5 teeth, 1300 (at least 5 teeth)
Intersecting semi-circle and diagonal line	Comb	2	143 (5 teeth), 398 (6-7 teeth)

Table 17: List of signature marks and their types

Imbrex

A total of 597 fragments of *imbrex* roof tile weighing 75.8kg was recovered from 90 contexts. Taking into account joining fragments, this represents a maximum of 564 individual tiles. There were no complete *imbrices*, but several fragments are complete enough to provide original dimensions. Two examples have the complete length preserved and these are very different. The first, from context 1484, lower fill of well F1311, has a length of 288mm and a width of *c*. 136mm at the narrow end and 155mm at the wider end. The height of the (more complete) narrow end is 64mm. The tile's profile is not a smooth curve, but rather it is somewhat L-shaped with an upper angle of about 100 degrees. The second full-length example is from context 1142, fill of oven F1140. It consists of two large joining fragments from an *imbrex* 475mm in length, with extrapolated widths of *c.* 135mm at the narrow end and *c.* 212mm at the wide end. The height at the wide end is 101mm. The profile of this example is a reasonably smooth and wide curve.

There are three further *imbrices* with complete width/height measurements. Context 1131, fill of ditch segment 1130, contained the narrow end of a tile with a width of 127mm and a height of 65mm. This has a reasonably regular curve. Another example from context 497, burnt clay deposit in raking pit of oven F553, has an extrapolated width at the narrow end of 153mm and a mid-point height of 54-67mm. The third example is from context 519, burnt deposit within oven F546. This has a width (at what appears to be the wide end) of 150mm and a height of 57mm. The profile of this example and that from context 497 are both rather L-shaped.

The thickness of the *imbrices* varies between 10.1mm and 28.3mm, with a mean average of 19.2mm. Some tiles are thickened along or inside the straight and occasionally the curving edges. The tiles are generally smooth on their external surface and rough and/or sand-coated on their internal surface. Sometimes finger marks are clearly visible on the outside, for example on an *imbrex* from context 1372, which has longitudinal finger marks with transverse fingers marks across the curve for the 60mm or so beside the curved edge (i.e. one sweep of the hand).

Box-flue tile

A total of 40 fragments of box-flue weighing 3434g was recovered from 22 contexts. Where keying is present this is in the form of combing. The identification of this sub-group as box-flue was based on the tiles' form, thickness and the presence of combing on the external surfaces. It

is possible that some smaller and undiagnostic voussoir fragments may have been recorded as box-flue (see below). Some of the box-flue tile fragments have sooting on their interior surfaces.

There are no complete box-flue tiles in the assemblage. Tile thickness varies between 12.3 and 24mm, with a mean average of 17.2mm. Four of the box-flue tiles have partial vents present. Most box tiles had some sort of vent, which were commonly rectangular in shape (Brodribb 1987). Two of the four vents are circular, with their extrapolated diameters measuring 30mm and 33mm. They are positioned 60mm and 75mm from the surviving edge of the tile. The other two vents are square or rectangular but no original dimension has been preserved on either example. The square or rectangular vent from context 1300, fill of cess pit F1297, is positioned 106mm from the surviving edge of the tile and has splayed edges so that the opening is larger on the outside of the tile.

Voussoir

Six probable hollow voussoir fragments weighing a total of 1744g were recovered from five contexts. Voussoirs are box-type tiles with openings in the sides rather than the top and bottom, which were used to create arches (Brodribb 1987, 79). They indicate the presence of a vaulted roof structure (Betts 2007, 53). There are five tile fragments in the assemblage which have vents in combed faces, which is normally a feature of voussoirs (Betts 2007, 53). These are from contexts 105, cleaning layer over Structure 3, 1298 (a fill of cess pit F1297), 1362 and 1371 (fills of cess pit F1405) and 1484 (a fill of well F1311). There may be voussoir fragments without vents which have been categorised as box-flue tile.

The thicknesses of the probable voussoir fragments range between 17.5mm and 24.2mm, with a mean average of 20.7mm. The fragment from context 1484 has one original dimension which measures between 160mm and 170mm. The surviving edges are not parallel which supports its identification as a hollow voussoir, the surviving dimension being the width. Three of the other probable voussoir fragments have circular vents which ranged in diameter from *c.* 38mm to 46mm (their former diameters are extrapolated from incomplete circles, so these measurements may not be completely accurate), which are positioned between 38mm and 63mm from the edge of the tile. In the tile which has its complete width preserved the vent is positioned centrally. The two circular vents which are set in the plain faces of probable box-flues tiles have smaller diameters of *c.* 30mm and 33mm. The thicknesses of the probable voussoir tiles range from 17.5mm to 24.2mm and in fact there seem to be two distinct thicknesses, one thinner at 17.5-17.6mm and one thicker at 23.8-24.3mm. It is not possible to be certain about this however as the sample comprises only four tiles. The final fragment has two lines of combing and what appears to be part of a square or rectangular vent. This has sloping sides, which are wider on the external (keyed) surface.

The sixth probable voussoir tile fragment is from context 1371, a fill of cess pit F1405. It has one original dimension of 167mm, which is very similar to the original width of the voussoir tile from context 1484 described above; however this tile has parallel edges. The start of the return is present on two diagonally opposing corners, indicating an original width of *c.* 160mm, so if this tile was a box-flue it would have been almost cube-shaped. Box-flue tiles of this form are known, for example from West Mersea (Brodribb 1987, 76) and London (Ian Betts, pers. comm.), but they are unusual and on balance it seems more likely that this fragment is either the top or bottom of a voussoir (Ian Betts, pers. comm.). The combing on the external face is in the form of four lines arranged in a zigzag. Voussoirs are usually either keyed on all faces or just one face (either the top or bottom) is left unkeyed.

The voussoirs have been keyed with combs with between seven and thirteen teeth (where discernible). On the voussoir fragment from context 1484 two different combs seem to have been used as one line clearly has seven teeth and the other has eight. Perhaps the manufacturer was using a comb in each hand to speed up the finishing process.

Brick

No examples of flat square bricks survive intact but 14 fragments, weighing a total of 5392g and relating to up to 12 separate bricks, were recovered from ten contexts. There may be other brick fragments which were catalogued as flat tile if they had no other diagnostic features. The thicknesses of the bricks range from 36.7mm to 57.7mm, with the mean average falling at 48.5mm. Other than the thickness, no complete dimensions are present, so it is possible that at least some of these fragments are from larger square bricks such as the *pedalis* or *sesquipedalis*. However the association of many of the fragments with box-flue tiles suggests that they were the *bessales* used to build *pilae*, pillars to support a hypocaust floor (Brodribb 1987, 34). *Bessales* measured on average 198mm square (ibid.). Eight of the Topsham brick fragments are in a similar silty oxidised fabric with a reduced light to mid-brown upper surface.

The larger fragments of box-flue, the voussoir and brick were concentrated in the area to the southeast of Structure 3, which is consistent with the presence of a detached bath-house (Structure 4) in this area.

Miscellaneous tile

A body fragment from a flat tile with lines scored in a grid pattern on one surface prior to firing was retrieved from subsoil (Plate 26). The thickness of the tile is 28mm, which is 4mm thicker than the thickest box-flue tile in the assemblage. This tile could perhaps be a fragment of *parietalis* (wall jacket tile) or half box-flue tile, although the squares are rather closer together than would be usual, or it could be a tile marked out for the production of tesserae, although the grid is rather larger than expected. Peter Warry has examined the fragment and has suggested that the most likely identification is a gridded gaming board, as the lines are not incised deeply enough to be effective as keying or scoring. Two gaming boards incised onto roofing slates were recovered during excavations in Exeter (Holbrook and Bidwell 1991, 278-9, nos. 9 and 14, figs 134-5). The grid squares are comparable in size to that on the Topsham fragment.

Paw prints

Four tiles have animal paw impressions. Three of these include the impressions of two centrally placed claws, indicating that the animal was a dog. They include prints on an *imbrex* fragment from context 448, a *tegula* fragment from context 1299 and a brick fragment from context 1401. The latter has two prints very close together, as if the animal has moved its foot forward very slightly whilst walking over the tile. The other paw print, which is on a flat fragment from context 1358, is faint and incomplete.

Signs of reuse

Two tiles have mortar adhering to them, suggesting that they were reused at some point. This includes a piece of *tegula* from context 398 which has a patch of mortar on the upper surface adjacent to the flange, and a very small unclassified fragment from context 1407.

6.8 Stonework *by Henrietta Quinnell with the assistance of Roger Taylor*

Context 1100, fill of ditch F1496. A broken piece of flat slate, probably originally discoidal, maximum dimension 215mm, with two partial perforations 22mm and 28mm in diameter. Roger Taylor describes this as a notched slate. The central perforation is round and it appears to have been deliberately made this size, rather than being an eroded nail hole. There are faint concentric rings which radiate from the central perforation over the whole of one side, which is very flat. This suggests that the central hole supported something above this stone which was moved round in a grinding action. This could have been solely during its manufacture. 505g. South Hams.

Context 1161 in pit F1160. Flat weathered foliated calcareous slate with calcite veins, maximum dimension 130mm, large perforation, 99g. Likely to have been brought into the site from the Devonian limestone area of South Devon.

Context 1298, fill of cess pit F1297. A similar flat slate disc, maximum dimension137mm, with off-centre perforation 17mm in diameter, 159g. Kate Brook formation or another South Hams source.

Context 1400, fill of cess pit 1405. A roughly ovoid flat slate, dimensions 180mm by 146mm, with two perforations (diameters both c. 30mm). One perforation is just off-centre and the other is close to the edge. 377g. Kate Brook formation or another South Hams source.

Context 1492, machined fill of cess pit F1405. A small flat slate disc, maximum dimension 73mm, with an off-centre perforation 10mm in diameter, 36g. Kate Brook formation or another South Hams source.

Small circular perforated slates are often described as pot lids. Larger examples may have been used as weights.

Context 1298, fill of pit F1297. Broken piece of cobble, probably Budleigh Salterton quartzite, which has been used as a whetstone, maximum dimension 108mm, 200g. This quartzite could come from local river terrace deposits.

There are a number of contexts with lava fragments. Most are of uniform medium grey and generally vesicular and friable, in a weathered and fragmentary state: these are likely to be from Niedermendig (Germany). These come from the following contexts, all of Roman date: context 1075 a fill of ditch F1006 *c.* 10 fragments 143g, in 1142 fill of oven F1140 one cobble 235g, 1298 fill pit F1297 nine fragments 570g and 1363 fill of cess pit F1405 six fragments 70g. Those from 1298 have remnants of a quern surface. Context 1365 has in addition two fragments 188g of reddish vesicular Permian lava of local origin. Niedermendig lava generally used for quern is regularly found on Roman sites in Britain (Rees 2011, 11). A good Devon example of this material is that found in similarly poor condition in levels associated with the fort at Pomeroy Wood, Honiton (Loader 1999).

Context 2073, fill of ditch F2079. Small elongated piece of black chert or jasper, 7g. This type of material was used traditionally to test the purity of gold alloys and the degree of polish appears appropriate (Roger Taylor, pers. comm.). However the only other finds from this context are prehistoric P5 and flint so this may be intrusive.

6.9 Slate roof tiles *by Ashleigh Haruda and Naomi Payne with geological identification by Roger Taylor*

A total of 411 slate roof tiles (and fragments thereof), weighing a total of 485.8kg, was recovered during the excavation. This included a representative sample of the slates from context 1302, slate fill of cess pit F1297. The tiles were cleaned and weighed and information including measurements, form, completeness and presence/absence of nail holes and nails, was recorded for each individual piece on a spreadsheet. The complete catalogue will form part of the site archive.

Slate roof tiles were found across the site in a variety of contexts (see Table 18) with the majority found in demolition deposits (contexts 106, 127, 141 and 142) and in the raking pit of oven F553. A single small slate fragment was recovered from ditch F1017, which need not derive from a roof tile. In South West Britain, stone roofing slates became the more popular choice for roofing from the mid-2nd century AD (Perring 2002, 120).

There are many complete or near complete roof slates. The overall shape of the complete tiles is commonly an elongated pentagon, hexagon or diamond, with a ninety degree point at the lower edge and a nail hole at the apex. This is similar to the roof slates found at Exeter (Holbrook and Bidwell 1991, 283) and Honeyditches villa near Seaton (Miles 1977, 140). There is also a group of tiles which are broadly rectangular in shape. Stone slates were commonly nailed into place onto wooden roof timbers. 181 slates have at least one nail hole present and nine examples have two nail holes. 38 tiles still have part of an iron nail *in situ*.

Context	Context description	Period	Count	Weight (g)
105	Cleaning layer above building demolition deposits		9	1719
106	Demolition deposit	R-B Ph3b	5	11061
127	Demolition deposit (slate)	R-B Ph3b	110	147098
130	Demolition deposit	R-B Ph3b	8	6313
133	Fill of robber trench cut 132 (F131)	R-B Ph3b	2	2241
135	Fill of robber trench cut 134 (F131)	R-B Ph3b	1	262
141	Demolition deposit	R-B Ph3b	45	66526
142	Demolition deposit outside building to NE	R-B Ph3b	14	23189
143	Demolition deposit west range	R-B Ph3b	5	2023
157	Lower fill of ditch F107	R-B Ph2	1	138
178	Upper fill of ditch F107	R-B Ph2	1	10
219	Upper fill of ditch F107	R-B Ph2	1	1200
220	Upper fill of ditch F107	R-B Ph2	1	270
250	Fill of ditch F109	R-B Ph2	16	1625
251	Fill of ditch F109	R-B Ph2	1	28
334	Fill of ditch F109	R-B Ph2	1	308
335	Fill of ditch F109	R-B Ph2	3	3542
336	Fill of ditch F109	R-B Ph2	12	3271
355	Fill of ditch F109	R-B Ph2	1	1174
397	Fill of raking pit of oven F553	R-B Ph3a	30	27194
398	Fill of raking pit of oven F553	R-B Ph3a	102	140957
399	Burnt deposit in raking pit of oven F553	R-B Ph3a	2	1686
435	Upper fill of ditch F107	R-B Ph2	6	8564
1001	Subsoil		1	65
1076	Fill of ditch F1006	R-B Ph2	2	1789
1077	Fill of ditch F1006	R-B Ph2	2	233
1086	Fill of ditch terminal F1084	R-B Ph2	1	2298
1089	Fill of ditch F1006	R-B Ph2	5	429
1100	Fill of ditch (F1496)	R-B Ph3a	1	2733
1161	Upper fill of pit F1160	R-B Ph3a	1	2064
1222	Upper fill of well F1221	R-B Ph2	1	239
1274	Fill of pit F1258	R-B Ph3a	1	166
1283	Fill of pit F1281	R-B Ph3a	1	5
1298	Fill of cess pit F1297	R-B Ph2	1	1620
1299	Fill of cess pit F1297	R-B Ph2	1	231
1301	Fill of cess pit F1297	R-B Ph3a	1	380
1302	Deposit of dumped roof slate within cess pit F1297	R-B Ph3a	3	13050
1316	Fill of ditch F1017	R-B Ph1b	1	12
1353	Infill of Structure 4 (F1350)	R-B Ph2	4	5443
1361	Backfill of cess pit F1405	R-B Ph3a	1	654
1362	Fill of cess pit F1405	R-B Ph2	2	76
1364	Fill of cess pit F1405	R-B Ph2	1	1443
1371	Fill of cess pit F1405	R-B Ph2	1	914
1372	Fill of cess pit F1405	R-B Ph2	1	44
1401	Fill of cess pit F1405	R-B Ph2	1	43
1484	Lower fill of well F1311	R-B Ph2	1	1485
Total			411	485815

Table 18: List of slate roof tiles and fragments by context and phase

Roger Taylor examined ten of the Topsham roof slates; all were found to be of Devonshire slate from the South Hams area. Seven were thought to be from the Late Devonian Kate Brook formation, which produces greenish-grey slates with lustrous surfaces. The remaining three were more probably from the Middle Devonian Nordon slate beds, which produce dark grey slate. Several of the probable Kate Brook slates were rough and fissile, indicating that they may have been collected from outcropping slate rather than quarried.

6.10 Metalworking residues *by Naomi Payne*

The metalworking residues recovered from the site included slag (smelting, smithing, undiagnostic and fuel ash), furnace/hearth lining and hammerscale. 1108 fragments of slag weighing a total of 16890.6g were recovered from 29 contexts within 24 deposits/features. This includes 540 pieces (14091g) of furnace slag, 513 pieces (1809g) of probable smithing slag, 96 fragments (1520g) of furnace/hearth lining and 33 pieces (445.5g) of undiagnostic ironworking slag. In addition, 1127.2g of hammerscale was recovered from samples taken from 14 contexts within 13 features. The metalworking residues are summarised in Tables 19 and 20.

Context	Context Description	Period	Furnace slag no.	Furnace slag wt	Smithing slag no.	Smithing slag wt	Furnace/hearth lining no.	Furnace/hearth lining count wt	Undiagnostic slag no.	Undiagnostic slag wt
100	Ploughsoil								1	3
101	Subsoil								1	13
105	Cleaning layer								3	86
130	Demolition deposit	R-B Ph3b							5	74
141	Demolition deposit	R-B Ph3b							10	204
145	Fill of ditch F144	P-M	1	57						
170	Fill of ditch F183	R-B Ph1a							1	5
371	Fill of ditch F108	R-B Ph1a	536	13980			21	1036		
374	Fill of ditch F456	R-B Ph1b	1	26						
386	Fill of ditch F109	R-B Ph2	1	19						
445	Fill of ditch terminal F457	R-B Ph1b			87	146	18	21		
448	Fill of hearth F447	R-B Ph3a			270	768	41	295		
449	Fill of hearth F447	R-B Ph3a			25	584	8	60		
501	Fill of hearth F499	Ph3a			130	50	7	33		
518	Burnt deposit within oven F546	R-B Ph2					1	75	1	0.5
1000	Topsoil								1	26
1003	Cleaning over Roman building		1	9						
1145	Lower fill of oven F1140	R-B Ph3a							1	10
1298	Fill of pit F1297	R-B Ph2							3	3
1300	Fill of pit F1297	R-B Ph2			1	261				
2051	Fill of ditch terminal F2058	R-B							6	21
Total			540	14091	513	1809	96	1520	33	445.5

Table 19: Summary of furnace and smithing slag by context (weights in grams)

Evidence for smelting

Although no *in situ* iron smelting was uncovered during the excavation, the sizeable quantity (13980g) of furnace slag found within the fill of ditch segment 367 (part of ditch F108), along with just over a kilogram of furnace lining, much of it vitrified, points to smelting activity taking place nearby during the earliest Romano-British phase. The slag and furnace lining appear to

constitute a dump of material from an iron smelting furnace and it seems unlikely that this would have travelled far from the location where it was produced. A small amount (4 pieces weighing 111g) of additional furnace slag was recovered from later deposits/features; at least some of this is likely to be residual.

Context	Context description	Period	Hammerscale (g)
371	Fill of linear ditch segment 367 (F108)	R-B Ph1a	37.7
399	Burnt deposit in raking pit of oven F553	R-B Ph3a	30
445	Fill of ditch terminal F457	3.1	0.2
448	Fill of hearth F447	R-B Ph3a	297
501	Fill of hearth F499	R-B Ph3a	740
518	Burnt deposit within oven F546	R-B Ph2	0.5
1145	Lower fill of oven F1140	R-B Ph3a	5.2
1152	Fill of stoking pit and oven chamber F1150	R-B Ph3a	1.5
1298	Fill of pit F1297	R-B Ph2	2.3
1304	Charcoal rich fill of pit F1303	R-B Ph2	2.9
1359	Charcoal rich fill of F1350 (Structure 4)	R-B Ph2	5.7
1401	Fill of cess pit F1405	R-B Ph2	0.2
1429	Upper fill of lead working pit F1427	R-B Ph3a	2.8
1487	Fill of pit F1297	R-B Ph2	1.2
Total			1127.2

Table 20: Summary of hammerscale by context

Evidence for smithing

Five contexts within four features of Roman date produced probable smithing slag. Three of these features also contained hammerscale and/or a small quantity of hearth lining. The other, pit F1297, contained a probable smithing hearth bottom, although the dearth of hammerscale from this feature suggests that it had been redeposited after use. Two hearths, F447 and F499, contained large quantities of hammerscale, in addition to some probable smithing slag and hearth lining. The hearths are located close to each other (approximately 7m apart) within the area of Structure 3. No *in situ* evidence for smithing was recognised during the excavation, but the amounts of hammerscale suggest that these features were smithing hearths, as hammerscale tends to be concentrated in the immediate vicinity of blacksmiths' anvils. It seems likely that the presence of the two smithing hearths reflects a change in the use of Structure 3 during phase 3a.

Other slag-like material

A small quantity of fuel ash slag (in total, 16 pieces weighing 11.1g) was recovered from three features (cess pit F1405, pit F1275 and oven F533). This slag is not diagnostic of a particular process as it results from high temperature reactions between alkaline fuel ashes and silicates from sand, soil and clay.

There was also a quantity (12 fragments weighing 555g) of slag-like material from four post-medieval deposits/features (subsoil, pit F1040 and quarry pits F1022 and F1072). This appears to be vitrified building material.

6.11 Archaeometallurgical residues *by Tim Young*

Methods

Shallow pit F1427, measured *c.* 0.5m in diameter and 0.1m deep, with a charcoal-bearing fill. A sample of *Alnus*/*Corylus* charcoal has produced a radiocarbon date of cal AD 135-345 (SUERC-72546 - GU43786) for fill (1429).

The natural deposits below the base of the pit were cut by reticulate network of veins of lead and secondary lead minerals extending to depth of approximately 80mm below the pit floor.

Because of the unusual nature of the feature the entire excavated pit was subsequently block-lifted and stored. Following determination of an appropriate course of post-excavation investigation, a section of the block was removed for analysis. Three samples were then removed from the block:

- TOP1, a small piece of one of the veins, from close to the upper surface
- TOP2, a piece of 'clay' from the upper surface of the piece, away from the veins,
- TOP3, a sample of clay from the lower part of the samples, approximately 60mm below TOP2.

Bulk chemical analysis was undertaken using two techniques. The major elements (Si, Al, Fe, Mn, Mg, Ca, Na, K, Ti, and P) were determined by X-Ray Fluorescence (XRF) using a fused bead on the Wavelength- Dispersive X-Ray Fluorescence (WD-XRF) system in the Department of Geology, Leicester University (this also generated analyses for S, V, Cr, Sr, Zr, Ba, Ni, Cu, Zn, Pb and Hf).

Whole-specimen chemical analysis for thirty six minor and trace elements (Sc, V, Cr, Co, Ni, Cu, Zn, Ga, Rb, Sr, Y, Zr, Nb, Mo, Sn, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, Pb, Th, U) was undertaken using samples in solution on the ThermoScientific ICAP-Qc quadrupole ICP mass spectrometer (ICP-MS) in the Department of Geology, Leicester University (this also generates lower quality results for Fe, Mn, Ti, P that are used mainly for QA purposes). At the time of preparation of this report, the trace element data had not been returned by the laboratory, so the interpretation is based on the XRF data alone.

Results

Analyses are presented in Tables 21 and 22.

	Calibration	Source notes	SiO_2	Al_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	TiO_2	P_2O_5	LOI	Total
Top1	Normal WROXI	Top of crack fill	6.02	4.94	0.68	0.02	0.14	0.26	<0.016	0.22	0.06	0.20	14.74	125.63
Top1	Standardless calibration	Top of crack fill	5.96	4.23	0.54		0.06	0.22		0.14		0.18	14.74	101.85
Top2	Normal WROXI	Upper layer of subsoil	61.94	13.10	5.75	0.17	1.27	0.36	0.26	3.94	0.67	0.24	4.79	98.49
Top3	Normal WROXI	60mm below TOP2	82.37	6.34	2.59	0.10	0.32	0.22	0.30	2.08	0.42	0.18	2.86	98.30

Table 21: Bulk chemical analysis: major elements by XRF. < = below detection. All elements presented as wt% oxide.

	Calibration	SO_3	V_2O_5	Cr_2O_3	SrO	ZrO2	BaO	NiO	CuO	ZnO	PbO	HfO2
Top1	Normal WROXI	0.792	<0.007	0.016	0.012	<0.005	0.084	<0.006	0.034	0.003	97.300	0.106
Top1	Standardless calibration	0.417							0.057		75.320	
Top2	Normal WROXI	0.006	0.015	0.016	0.003	0.030	0.128	0.006	0.008	0.013	5.771	0.008
Top3	Normal WROXI	<0.003	0.007	0.010	<0.004	0.042	0.068	0.004	0.003	0.006	0.394	<0.004

Table 22: Bulk chemical analysis: minor and trace elements by XRF. < = below detection. All elements presented as wt% oxide.

Two analyses are presented for the high-lead sample TOP1. The lead content was much higher than the calibration standards employed for the normal WROXI calibration programme. An alternative standard-less calibration is also presented, which provides a more accurate estimate of the lead. Other elements are believed to be best represented by the normal WROXI data.

Table 23 shows the major element analyses recalculated on a lead-free basis, enabling comparison with the estimated composition of cupellation hearth linings as modelled by Dunster and Dungworth (2012, table 5).

	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	Mn_3O_4	MgO	CaO	Na_2O	K_2O	P_2O_5
St Algar's Farm	49.3		3.8	0.8		2.9	40.6		1.3	<1
Pentreheyling	38.8		12.6	0.5		2.8	43.6		3.1	<1
Top1	47.94	0.50	39.40	5.45	0.19	1.11	2.08	<	1.77	1.56
Top1	52.63	n.d.	37.31	4.79	n.d.	0.56	1.91	n.d.	1.21	1.60
Top2	70.63	0.77	14.94	6.56	0.20	1.45	0.41	0.29	4.49	0.28
Top3	86.78	0.44	6.68	2.73	0.11	0.34	0.23	0.31	2.19	0.19

Table 23: Bulk chemical analyses in wt% recast on a lead-free basis, with comparative data after Dunster and Dungworth (2012).

Girbal (2011) analysed and interpreted Roman and medieval litharge cakes using methodology developed by Martinón-Torres *et al*. (2009). They estimated the potential contribution from the bone-ash as the weight% P_2O_5 plus 1.2 times that percentage of CaO. Girbal (2011) modified that approach using a factor of 1.3 instead of 1.2 for empirical reasons. In this instance, the quantities involved are very small and a factor of either 1.2 or 1.3 effectively accounts for all the CaO, suggesting the carrier of both oxides is indeed an apatite, but reaching only approximately 3.4% apatite. Calculating the composition of a theoretical excipient (the non-ash component of the lining) gives a composition close to a mixture of iron oxide and kaolinite for the lead vein and decreasingly less aluminous compositions for the subsoil. Table 24 provides the chemical analyses modelled in this way.

	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	Mn_3O_4	MgO	CaO	Na_2O	K_2O	P_2O_5
Top1	49.73	0.52	40.86	5.66	0.20	1.15	0.06		1.83	
Top1	54.47		38.61	4.96		0.58			1.25	0.13
Top2	71.08	0.77	15.03	6.60	0.20	1.46	0.05	0.30	4.52	
Top3	87.14	0.44	6.71	2.74	0.11	0.34		0.32	2.20	0.01

Table 24: Bulk chemical analyses in wt% recast on a lead-free basis after removal of model bone ash content (model excipient methodology after Girbal 2011)

Extrapolation from the very low level of contaminants in the lead vein is problematic and can only give a very crude model of what the material mixed with the lead may have been. It would appear, however, that the lead probably contained a component of kaolinitic composition, and that the top of the *in situ* subsoil was richer in aluminous clay than a level 60mm below.

Interpretation

The development of the cracking/veining across the entire floor of the pit may suggest that the lead was introduced into the pit across its whole area. A simple casting spill into a hearth would be expected to be much more localised. Five potential alternative interpretations are possible:

- the collection of lead from a primary smelter;
- the secondary casting of a large circular ingot;
- the purification of molten lead through formation of a dross under oxidising conditions;
- the use of the pit as a cupellation hearth (in which case the large size of the pit would suggest bulk de-silvering of fresh lead, rather than for recycling or assaying); or,
- the resmelting of litharge from cupellation.

Primary lead smelting may employ a low-level pit to collect molten lead from an elevated hearth (Tylecote 1986, fig. 23). On a site with a moderate degree of truncation it is conceivable that the hearth might be entirely removed, leaving just the tapping pit. However, such an interpretation is unlikely for the present example, for the location is remote from sources of lead ore and no lead slag was recovered.

The casting of lead into a circular ingot might have been accomplished in a simple pit, perhaps with the use of a clay-rich lining. Tylecote (1986, 68) noted that the familiar primary trapezoidal Roman lead ingots were cast in clay moulds. Primary lead pigs (and also the pigs interpreted as having been desilvered) are elongate prisms, with a trapezoidal-cross section (Tylecote 1964; Todd 1996). Large circular lead ingots are not known – although it was the normal form for large ingots copper and tin ingots in the Roman period (Fox 1996; Tylecote 1986). If the production of a circular ingot was the intention, then this is likely to have been for the purpose of recycling.

Purification of lead by drossing under an oxidising air blast has not been demonstrated for the Roman period, but is known from more modern settings (Percy 1870, 459). The most typical purpose for this process in recent times is the removal of antimony from raw lead. Antimony causes the lead to be hard and softening of the lead is desirable for many purposes. Analyses of British Roman lead ingots (Tylecote 1986, table 38) show very low antimony contents, suggesting softening would not be required, even if the process were known.

If the present material is from cupellation, then the large size of the pit and the low copper content of the weathered metal suggest that it would have been from the processing of primary metal, rather than the recovery of silver from mixed alloys. Copper-bearing litharge cakes are relatively common on Roman sites and it is likely that recycling of non-ferrous alloys was commonplace. The previously-described modestly-sized litharge cakes from Exeter are likely to fall into this category (Bayley 1989a; 1989b).

Dunster and Dungworth (2012) indicated that only four sites have produced materials likely to be litharge cakes from the cupellation of freshly smelted lead: St Algar's Farm, Somerset (Dunster and Dungworth 2012), Chew Valley, Somerset (Rahtz and Greenfield 1977), Green Ore, Somerset (Ashworth and Palmer 1957-58) and Pentreheyling, Shropshire (Bayley and Eckstein 1998). These localities are all close to locations of Roman lead-mining, but Topsham does not lie in such a location.

The secondary (recycling) litharge cakes analysed by Girbal (2011) show evidence for both bone ash- and plant ash-bearing linings. The analyses of primary litharge cakes of Roman age (Dunster and Dungworth 2012) are few in number, but do not indicate the use of bone ash – rather they indicate the use of clay and washed wood ash. If the present material is from cupellation, then a clay lining with a very low proportion of bone-ash may possibly be supported on the present evidence. The somewhat weak evidence for a former high-calcium content lining to the pit may reflect the genuine lack of such a lining – in which case it is possible that a different interpretation may need to be sought for the pit. The data show no conclusive evidence for the incorporation of pit lining into the floor of the pit or into the lead in the vein. The expectation would have been that any lining impregnated by litharge would have been completely removed after the processing of the lead, so no contamination of the underlying materials may simply mean that any lining was fully removed with the litharge cake (which would have been resmelted).

The resmelting of litharge from either primary or secondary cupellation processes might result in molten lead being collected in a pit below the hearth. The low levels of phosphate in the lead contained in the veins might be compatible with small particles of the bone ash in the litharge being carried with the molten lead produced by the smelting. There is no current archaeological

evidence for the nature of either the materials associated with the process or the nature of the hearth/furnace within which it was conducted.

Discussion

The lack of materials associated with this hearth, except for the accidental leakage of lead into the cracked subsoil, provides significant barriers to its interpretation.

Although several potential originating processes have been identified, chemical analysis of the hearth floor and the lead veins has not provided an unambiguous solution.

Primary smelting is unlikely, particularly because of the location, as is oxidative drossing, but the resmelting of litharge and the remelting of recycled lead are both possible interpretations. These processes would not require a special lining to the pit. The cupellation of primary lead also remains a possibility, but would require all of the calcium-bearing hearth lining to have been removed with the litharge cake.

6.12 **Mortar** *by Naomi Payne*

A total of 43 fragments of mortar weighing 1599g was recovered from six contexts (see Table 25). The majority of this material was from Roman contexts, with the exception of the three fragments (260g) from post-medieval quarry F1022. This feature also contained quantities of Roman pottery and CBM, so it is possible that the mortar is also residual. All of the mortar is buff in colour and contains varying quantities of slate, flint, chalk, sandstone and grog inclusions. The small piece from context 1144, topsoil above oven F1140, is lighter in colour, with more frequent inclusions of a light-coloured stone. Two pieces of ceramic building material have a small quantity of mortar adhering to them (see section on CBM).

Context	Context description	No.	Wt (g)
398	Fill of raking pit of oven F553	17	754
430	Stone structure of large oven F553	2	182
1023	Fill of shallow post-medieval quarry pit F1022	3	260
1144	Topsoil above oven F1140	1	16
1407	Upper fill of well F1406	2	6
1408	Stone packing on top of well F1406	18	381
Total		43	1599

Table 25: Summary of mortar fragments by context

Context	Context Description	Period	No.	Wt (g)
263	Fill of ditch segment 262 (F261)	MBA	4	44
371	Fill of ditch segment 367 (F108)	R-B Ph1a	5	27
399	Burnt deposit in raking pit of oven F553	R-B Ph3a	20	13
443	Tile layer within fill of oven chamber in F553	R-B Ph3a	2	26
1042	Fill of shallow pit F1040	P-M	1	31
1152	Mixed fill of stoking pit and oven F1150	R-B Ph3a	5	56
1300	Fill of cess pit F1297	R-B Ph2	4	130
1301	Fill of cess pit F1297	R-B Ph3a	1	28
1361	Backfill of cess pit F1405	R-B Ph3a	1	11
1372	Fill of cess pit F1405	R-B Ph2	1	46
1385	Post-medieval truncation	P-M	2	39
1438	Fill of pit F1436	R-B Ph1a	2	19
Total			48	470

Table 26: Summary of heat-affected clay by context

6.13 Heat-affected clay *by Naomi Payne*

A total of 48 fragments (470g) of heat-affected clay was recovered from 12 contexts within nine deposits and features (see Table 26). All of the heat-affected clay is amorphous and featureless in fabrics which contain varying quantities of sand and occasional larger inclusions. Firing colours range from an oxidised mid-orange to a reduced dark grey.

6.14 Wood *by Richard Brunning*

The wooden assemblage was recovered from a 2nd century well F1311 that was over 5m deep. The wood was all derived from context 1484 with pottery providing the dating evidence. The wood was machined out of the deepest part of the well so there is no information on the position or function of the wooden remains and it is uncertain if, or how, the varied elements of the assemblage fitted together. Because of this it is impossible to determine if the timbers and cut roundwood originally comprised part of the well structure or if they had been accidentally or deliberately deposited within the well.

Wood No.	Length (mm)	Width or diameter (mm)	Thickness (mm)	Conversion	Species Ring count	Notes
1	569	36	19	tangential	Oak 3	Thin timber, ends broken
2	356	106 to 98	22	tangential	Oak 4	Cut on one narrow side to form point, ends broken
3	310	70	17	intermediate	Oak 15	Cut on one narrow side to form point, ends broken and torn
4	104	14	-	whole	-	Small peg, cut one end chisel point
5	89	17	-	whole	-	1 end broken, other cut to chisel point
6	90	20	-	Whole	-	Both ends broken
7	138	54/42	-	Whole	-	Top decayed, bottom end cut to chisel point
8	76	22	8	Tangential	Larch/spruce	Woodchip, cut 1 end
9	53	22	10	Radial	Oak 30	Woodchip, ends broken
10	90	21	16	Tangential	Oak7	Woodchip, 1 end broken, other cut
11	66	20	11	Tangential	Conifer? 6	Woodchip, 1 end broken, other cut
12	58	26	15	Radial	Conifer?	Split fragment, broken ends, woodworm damage
13	97	22	19	Radial	Conifer? 10	Woodchip, cut both ends
14	48	59	17	Radial	Silver fir	Woodchip, cut 1 end, other broken
15	71	24	5	Tangential	-	Woodchip, cut 1 end
16	43	20	7	?	Conifer?	Woodchip, cut 1 end, other broken
17	91	29	2	Radial	Conifer?	Woodchip, thin slither
18	57	30	4	Radial	-	Woodchip, cut 1 end
19	60	20	6	Tangential	Silver fir	Woodchip, cut 1 end, other broken
20	28	29	6	Tangential	-	Woodchip, cut 2 ends
21	54	30	2	Radial	-	Woodchip
22	33	32	4	Radial	Silver fir	Woodchip, cut 1 end
23	33	24	4	Radial	-	Woodchip, ends broken, 2 small holes 1.7mm diam with channel between – woodworm?
24	33	28	3	Radial	Silver fir	Woodchip, cut 1 end, other broken
25	38	20	2	Radial	-	Woodchip
26	96	56	15	Intermediate	Conifer?	Cut across narrow face at one end. Other end original plank end
27	97	42	10	Radial	-	Cut across wide face at one end, other end straight clean edge
28	127	55	7	Radial	Oak 55	I end tapers to nothing. No toolmarks
29	222	45	21	Radial	Oak 35	Broken part of larger timber. Break goes across a perforation (34mm diam) 58mm from the curved end and 30mm from the intact edge of the timber
30	179	41	13	Radial	-	Bid woodchip/offcut, cut on 1 face at both ends
31	104	24	25	Radial	-	Broken both ends, compressed on one side (25mm wide) where pushed against roundwood
32	63	47	19	Tangential	Oak 12	Both ends broken. Plank fragment?
33	212	47	11	Radial	Oak 40	I end broken, other neatly cut down on 1 narrow side - to fit into a joint?
34	85	34	8	Radial	Oak 40	Woodchip, axed at 1 end on broad face, other end broken
35	552	109	26	Tangential	Oak 15	Plank, 1 end intact (sloping), other broken and torn. On one broad face 3mm deep straight cut across, 154mm from intact end, another smaller cut 330mm from that end.

Table 27: Wood dimensions and species

Seven of the timber items could be identified as oak, chosen no doubt for its well-known qualities of strength and durability. Six the ten timbers had been converted tangentially or intermediate between tangential and radial. These were almost certainly produced by cross grain sawing relatively young trees although the surface condition was not good enough to preserve any saw marks. The production of planking by this method, using either a trestle or see-saw technique was the norm in Roman Britain (e.g. Goodburn 1992; 2001). It represented the most efficient method of plank production from relatively young trees.

Three of the planks were broken at both ends (1, 31 and 32). Timber 32 had a concave 25mm wide impression running straight across its broad face as though it had been pressed against a roundwood pole orientated at right angles to the plank. Most of the other timbers had one broken end and one relatively complete. Planks 2 and 3 were both cut down on one narrow edge towards one end. Although those ends were broken the shallow angle of the cut suggests that this may have been to create a point to aid vertical insertion of the plank at the base of the well. Two planks (26 and 35) had one broken end and the other complete end cut across diagonally on a narrow face. The steep angle of the cut suggest that this was not intended to create a point as for the other two planks. It may instead have been intended to form a simple scarf join between two planks.

One radial timber (27) was complete, with two straight sawn ends. At one end an axe had cut across the whole width of the plank creating a tapering end. The purpose of this piece is uncertain but it could have been used as a wedge to tighten up a crude joint or to widen a crack during the splitting of a log.

A radially split oak timber (29) was neatly curved towards one end, with the opposing end broken. It appears to have been part of a wider timber which broke across a 34mm diameter perforation that was 58mm from the curved end and 30mm from the intact edge. The fragmentary remains of the timber prevent definitive interpretation but it could have functioned as a wooden step in the well side held in place by roundwood stakes, or as the step of a ladder.

The other timber (33) was a finely finished piece of radially split oak heartwood that was broken at one end. The intact end was neatly cut straight across and on one narrow edge it had been cut down over 80mm in a gently curving arc towards the end. This was a finely finished piece that probably represents part of a composite artefact, possibly even furniture.

Species used and ring counts

The only items identified to species were those that could be clearly identified as oak (*Quercus sp.*). The oak comprised seven of the ten planks or other timbers and four of the woodchips and offcuts. All of the identified oak consisted entirely of heartwood with no evidence of sapwood or bark.

Rough estimates of the number of annual growth rings present in the oak timbers was made to assess the potential for dendrochronological dating. The ring counts varied from 3 to 55 rings, with only one timber having more than the 50 year minimum required for analysis. As there were no timbers with ring counts approaching 100, the chances of establishing a site chronology is small and the possibilities for dendrochronological dating are minimal.

None of the other material was visually identified to species, but at least seven of the woodchips appeared to be of a coniferous species. Five of the woodchips were identified microscopically using Schweingruber (1990). One of these (8) was larch or spruce (*Larix sp./Picea abies*) and the others (12, 19, 22, 24) were silver fir (*Abies alba*). These exotic species have been recorded elsewhere in Roman Britain and in eastern England macrofossil and pollen finds of spruce suggest that the species was imported alongside box for use in formal gardens (Zeepvat 1991;

Murphy 2001). In London a range of objects of silver fir/cedar and larch/spruce have been found including writing tablets, pegs and bungs (Gale 1987) and Carlisle has produced some of silver fir (Keepax and Watson 1980). The woodchips at Topsham are more likely to be derived from the reuse of barrel staves. Larch/spruce and silver fir barrels have been recorded from London (Straker 1985), Droitwich, Hereford and Worcester (Crone 1992) and in fragmentary form from Carlisle (van der Veen 1982). The presence of the woodchips in the well suggest that old barrel staves were being modified for use in a nearby structure and perhaps even the well head itself where their curvature may have been useful. The reuse of old barrels of larch/spruce or silver fir suggests that continental imports of bulk liquids such as wine were reaching a nearby port. The only other identification of Roman period larch/spruce and silver fir in the South West region came from well at Chew Park, North Somerset (Metcalfe and Richardson 1977; Smith 2002).

Conclusion

The small assemblage retrieved from the well probably represents a mixture of timbers that could have formed the well lining and material that was the result of nearby woodworking. Without information about the position and relationship of the timbers in the well it is not possible to be conclusive about the putative well lining, but the available evidence suggests that it consisted of tangentially sawn oak heartwood planks, some of which were driven vertically into the base of the well and others lining the sides, with non-oak roundwood posts set vertically to give greater stability on the inside.

One timber broken across a perforation may represent part of a wooden step. Another finely finished piece is likely to be part of a composite artefact or furniture.

The woodworking activity around the well head produced a range of woodchips from the processing of oak and non-oak timbers. The presence of larch/spruce and silver fir suggests that imported material, probably in the form of barrels, had been brought to the site where it was modified for incorporation into a structure around the well.

None of the material is recommended for conservation as they do not provide evidence of significant woodworking and the majority are in a poor condition, exhibiting considerable damage. None of the material is recommended for dendrochronological dating because of low ring counts in the oak timbers and the absence of sapwood.

6.15 Human remains *by Charlotte Coles*

Cremations

Introduction

The cremated remains of three individuals were recovered from three different features. All these deposits of human bone were placed within pottery vessels dating from the early Romano-British period. The burnt bone was in good condition from context 1290, average condition from 1396 and poor condition from context 2086. The remains were all from adult individuals, two of these possibly mature adults. One was a male and two had some signs of age related changes to the vertebrae. The remains from context 1290 also had burnt animal bones incorporated in the deposit.

Methodology

The pottery vessels were block lifted and then excavated under laboratory conditions. The soil surrounding the vessels was also sampled from the features to make sure all bone had been collected. Vessels containing context 1396 and 2086 were excavated as one spit as there was limited survival of the urn. The vessel containing context 1290 was excavated in two spits to ascertain if there was any difference in the size of bone, presence of animal bone and preservation of bone between the top and bottom parts of the vessel. The soil from inside and

around the urns was wet sieved through 500 micron, 2mm and 5.6mm sieves and the bone was picked out by hand from the residues. Age calculation was based on bone fusion and suture closure where other techniques were not possible due to fragmentation. Sex calculation was ascertained by size and skull and pelvis morphology based on Buikstra and Ubelaker (1994). For analysis of the colour of the remains and therefore temperature of the burning process, Wahl (1983) was used.

Results

The results are summarised in Table 28 and discussed in detail below.

Burial Context	Type	Total Bone Weight	Colour of Bone Present	Age	Sex	Pathology	Animal Bone Present
1290 (including 1276)	Urned in pit	1,143g	Milky white with occasional cream-white, brown and blue-grey pieces	Adult - Mature	M	Osteophytes on vertebral bodies	Chicken and pig bones
1396	Urned in pit	129g	Milky white with occasional cream-white pieces	Adult – Mature?	?	Osteophytes on vertebral bodies	
2086	Urned in a ditch	81g	Blue-grey, milky white, with occasional cream-white pieces	Adult	?		

Table 28: Cremated remains

Contexts 1290 and 1276

The burnt remains from this burial were found mostly within a cremation vessel (context 1290) and from the soil surrounding the vessel (context 1276) within pit F1275. The vessel was partly crushed, the base was damaged, part of one of the sides was missing as was the rim. The vessel was a southwestern Black-Burnished ware jar dating from the late 1st to the early 2nd century AD.

A single piece of iron was found in the top part of the lower spit near the outside of the vessel, there are several pieces of bone adhering to this Iron object, therefore it is likely that this was on the pyre during the burning of the body.

The bone ranges from less than 1mm to 76.2mm. 19g of burnt bone were found within the soil outside of the vessel the remaining 1,124g was from within the urn. The urn was excavated in two spits (see methodology for more details), the lower spit contained more bone (768g) than the upper spit (356g) and the large pieces of bone were also found in the lower spit. There was no bias towards particular elements being placed in the bottom or the top of the vessel and there were large fragments of bone throughout the vessel. The bones identified were skull, teeth (including a premolar and 1st molar), vertebrae (mostly cervical including parts of the atlas and axis), long bones (parts of both arm and leg bones), pelvis, patella and a metacarpal. The individual was an adult based on fusion and tooth formation. There are several pieces of cranium with sutures present, two of these have well fused sutures and two have open sutures, the heat of a cremation can force open sutures and make the individual appear to be younger than they were (Wahl 2008). There are some small areas of osteophytes on the vertebrae and the premolar and molar teeth found had wear present, therefore it is likely that this was an older individual. The remains are likely to be those of a male, based on size and thickness of the bones and a mastoid process which survives.

Context 1396
A moderate amount of burnt human bone (129g) was recovered from an urn in pit F1394. The vessel was in poor condition and missing its rim. It has also been identified as Southwestern Black-Burnished ware jar dating from the late 1st early 2nd century. There was a thin layer of peagrit at the bottom of the vessel, which the bone was sitting on, no bone was mixed within this layer. The bone ranges from less than 1mm to 51mm in size. 14g of the bone was retrieved from the 2mm residue and 114g came from the 5.6mm residue. The bones identified are pelvis (from the acetabulum area), vertebrae (mostly thoracic), long bone (including humeral head and radius shaft) and a single tiny fragment of cranium. No repeated elements are present, therefore only one individual is represented. The remains are that of an adult based on fusion. Due to lack of skull or diagnostic parts of the pelvis it is not possible to ascertain the sex of the individual or ascertain further ageing. There were however osteophytes on the vertebral bodies, which is often connected to age related joint disease, therefore the individual may be a mature adult rather than a young adult. These changes can however be related to other factors such as a repetitive physical occupation.

Context 2086
A small amount of burnt human bone (81g) was recovered from a nearly complete vessel in ditch F2005, this ditch is dated from the post-medieval period however the vessel holding the cremated bone was a late 1st to 2nd century Black-Burnished ware jar as with the other vessels. The vessel must have been moved from an original location nearby and very gently placed in the ditch, as it was still found semi complete and with its contents still in place. The bones range in size from less than 1mm to 17mm. None of the pieces are identifiable to element, apart from two very small pieces of cranium.

Other burnt human bone
One other piece of burnt human bone was recovered from elsewhere on the site. This was a section of calcined long bone from the base of oven F1140 (context 1142), and was a single find and not associated with any other burnt material, possibly implying that it was intrusive and may have been disturbed from another cremation during the abandonment of the site or subsequently.

Levels of burning and pyre technology
Two small pieces of fuel ash slag were recovered from within the urn of context 1290. This is most likely to have come from the pyre itself. Very little or no charcoal was recovered from each of the vessels, implying the bone was carefully picked out of the pyre. The total weight of the cremated remains of an adult can be up to 2000g or more (McKinley 1993) therefore the remains found at Wessex Close represent only a proportion of the complete individual for each burial, with the remains from contexts 1396 and 2086 considerably less than those of a whole adult. For all three burials a good percentage of bone was recovered from the 2mm sieve implying that time was taken to collect smaller pieces of bone from the pyre for burial. There are a number of large fragments of long bone, vertebrae, pelvis and skull from context 1290 and there appears to have been no attempt to fragment these manually after the individual was burnt. The remains from all the burials are varied in colour, there are a small number of bones which are calcined pure white, whereas most of the bone is a milky white, with some brown and blue-grey pieces. The colour of burnt bone is indicative of the temperature that it was burnt at, results from modern crematoriums have shown that the bone must be burnt at a temperature over 800°C before the fragments produced are hard, brittle and pure white (Wahl 2008). Other colour variations of milky white and grey are from temperatures between 550°C and 800°C. The colour differences seen within the burnt remains of one individual are common, especially taking into account that these remains were not cremated within a controlled environment. As McKinley (2008) notes many factors affect the efficiency of the overall cremation and can even mean certain elements will burn to a hotter temperature, these include weather conditions, such as wind and rain, amount of fuel, air flow and thickness of flesh on certain parts of the body, the clothes the person was wearing and even the position of the body. The combination of the large pieces of bone and the

brown/grey bone present in context 1290 is indicative that the fire was hot enough to fully oxidise the remains. All the burnt bone recovered the site did have fracture patterns consistent with the burning of 'green' bone with flesh still present.

Inclusion of animal remains

A small amount of burnt animal bone was recovered. This was found in both upper and lower spits within the vessel from context 1290. The 76 pieces (16g) include several very small fragments of pig tooth, eight pieces of mammal long bones from an immature animal and 59 very small pieces of bird bone, the largest of these are identifiable as domestic fowl and are a distal femur and a tibio-tarsus shaft. The tibio-tarsus shaft has two oblique knife marks to the posterior, implying that the meat was removed before being placed on to the fire. The bird bones are all fused and non-porous and therefore were from adult birds, there was no medullary bone present in the long bones fragments. Medullary bone is a calcium deposit laid down during laying season in female birds. Therefore the bones were either from male birds or female birds not in the laying season. The colour of the animal bones are bright white to a milky white with some brown-white pieces. Those with a brown colouration may represent bones that only partially burnt and fell off the pyre or were added later in the burning process. Animal bones are often found with cremated human bone. Chicken and pig bones were the most numerous species identified from cremation deposits in southern Britain in the Romano-British period (Pearce 1999).

Comparisons with other cremation deposits

Roman cremation deposits (as well as inhumation burials) are often discovered alongside roads and several other similar burials have been reported nearby. The remains of a cremated young adult were found from a Black-Burnished ware jar from the site of the 1974 excavation (Jarvis and Maxfield 1975). This site is just to the northwest of Wessex Close. The pit with the remains was surrounded by a funerary structure or tomb and was later than the ones from Wessex Close, being dated to the late third or fourth century. Burnt human bone was also recovered along with several pottery and glass vessels at the site of Valiant Soldier, Holloway Street further along the Topsham road towards Exeter, these were much earlier and dated from the first century (Salvatore 2001). Other deposits of cremated remains have been found at Friernhay Street, Exeter, where the burnt remains of a child were found within a pottery vessel (Mandy Kingdom, pers. comm.) and at Mount Dinham, Exeter where a very small amount of burnt bone was retrieved from a pit with numerous pottery and glass vessels, this also dates to the military phase of the first century (Passmore, forthcoming).

Conclusion

The remains of three individuals were recovered from three pits, these burnt remains were all found in Black-Burnished ware jars, were all adults and all date from the late 1st or early 2nd century. There is a great variation in amounts of bone surviving from each burial, with the bone retrieved from pit 1290 having the largest amount and greatest preservation. For two of the individuals present it is possibly these were older adults and one individual was probably a male. The only pathology noted were osteophytes on the vertebral bodies of burials 1290 and 1396. There is a variation in the colour of the bone which indicates different burning temperatures in the same cremation process; this is normal for cremated remains and may be caused by several factors. The deposits of cremated bone found on this site tie in well with other similar burials from sites adjacent to the road from Topsham to Exeter.

Human tooth

A single human tooth was recovered from context 1481, the basal fill of well F1221. This is an adult molar. The root and part of the crown are present, there is a large cavity in the crown of the tooth, which has destroyed half of the tooth. There may also be a trace of calculus (mineralised plaque) on the margin between the crown and the root, however there is some post-deposition wear also present on the root, which makes this uncertain. The tooth has been stained brown

from being deposited in the well. The evidence of the cavity in the tooth may imply that the tooth was lost post-mortem.

6.16 Animal bone *by Charlotte Coles*

Introduction

Species identified from the site are cattle, sheep/goat, pig, horse, red deer and small mammal. The preservation of all of the bone apart from the small mammal is particularly poor, with gnawing marks and evidence of burning on many of the bones. This may be indicative of a delay in the burial of the bones directly after consumption. Cattle was the most frequently identified by number of species, however this only represents an MNI (minimum number of individuals) of 1 for each species for each excavation phase.

A total of 96 pieces of animal bone were recovered, the vast majority of these (68) are unidentified small fragments. The bone preservation is poor with surface preservation greatly affected. A single sheep/goat centroquartal bone (ankle bone) was identified from the Bronze Age phase of the site. 22 mammal bones were identified from the Romano-British phases of the site, these are three sheep/goat loose teeth, 11 pieces of a single cattle tooth, a sheep/goat phalanx, 4 pieces of red deer antler and a burnt horse molar. Seven bones from the post-medieval phase were identified; these are 4 cattle teeth, a cattle astragalus, a cattle metatarsal and a chicken synsacrum. No butchery marks were noted on any of the bones, however this is likely to be due to poor surface preservation obscuring any marks. All the bones were fused and from adult animals. One of the sheep/goat loose teeth from a Roman context was from an animal around 26-28 months at time of death. The red deer antler was from the main beam and one of the tines. It is not possible to tell if this was from a shed antler or from a dead animal.

Animal bone from the cremations

A total of 76 pieces of animal bone were retrieved from context 1290, these were burnt and very fragmentary, most of the pieces could not be identified, however pig and chicken remains were found. Full information on these animal bones can be found from the cremated remains report (Coles, above).

Conclusion

The remains found on site are very limited due to preservation, cattle is the most frequent, this is the same as with other Roman sites (Cool 2006). The presence of deer antler is not unusual, the lack of other deer bone may be an indicator of the antler being shed rather than taking it from a dead animal, however, the lack of bone in general means it is not possible to ascertain.

6.17 Shell *by Charlotte Coles*

The assemblage

A total of 133 pieces of shell (29g) was recovered, 71 of these came from context 399 (18g), the vast majority of the shells from this context are cockles, there is also a single oyster shell and three pieces of mussels. There are also two pieces of cockle shell from context 505 and a single piece of oyster from context 518. 52 very small fragments of mussel and oyster were recovered from context 1152 (1g) and four pieces of mussel shell and three pieces of oyster shell from well F1406, context 1407 (8g).

Oyster shells are the most common type of shell recovered from Roman sites. Cockles and mussels were also eaten, but in smaller quantities (Cool 2006).

6.18 Fishbone *by Philip Armitage*

Introduction

Fish bones from seven Romano-British (2nd-late 3rd century AD) deposits were submitted for analysis: 399, 518 1152, 1298, 1372, 1401 and 1487.

Apart from the remarkable quantity of tiny fish bones present in the sample from a single deposit (399), these deposits yielded few specimens. Deposit 399 was described as a burnt deposit, possibly 'rakings' out of oven F553 containing charcoal pieces, charred grain and fish bones.

Methodology

The fish bones were examined under low power (10x magnification) using a Motic binocular microscope. Taxonomic identifications were made using the author's modern comparative osteological collection. Nomenclature of the anatomical elements in the fish followed the system of Wheeler and Jones (1989, table 7.1, 122 – 24). Owing to the sheer amount of fish bones present in deposit 399 it was considered that any attempt to process and analyse this material in its entirety would have been excessively time consuming, accordingly 20g of this material was selected. A preliminary examination by the author of this submitted sample (399<6>) confirmed the remarkable richness of the fish remains – predominantly comprised of tiny *clupeid* (herring/sprat) bones (see below) - and this prompted a follow-up study of the 500-micron flot sub-sample. The number of *clupeid* individuals represented in the flot sub-sample was estimated from the extracted total numbers of the second most frequently well-preserved element present: the pro-otic bulla. *Clupeid* vertebrae comprised the other most frequent element observed among the charcoal pieces in the submitted flot material. Measurements (in mm) were taken on a selection of herring vertebrae from 399 <6> using Draper dial callipers (graduated 0.02mm) for estimating fish length.

Results

Evidence of burning – Although the majority of the fish bones were from deposits associated with burnt/ashy material, not all the bones examined exhibited the effects of heating/combustion. Those that did had been subjected to temperatures ranging from 200 to 700+ degrees centigrade (based on the bone-colour criteria of Nicholson 1993, table 1, 414).

Taxa - A summary of the taxonomic determinations by context is presented in Table 29. Notably, by far the major quantity of fish bone came from context sample 399, which apart from an isolated sea-bream vertebra (cf. black sea bream *Spondyliosoma cantharus*) comprised numerous tiny head bone elements and vertebrae of immature/young clupeids: herring *Clupea harengus* and probably also sprat *Sprattus sprattus* (Table 30). There were 125 *clupeid* pro-otic bullae in the flot sub-sample and as a paired element in the living fish this roughly equates to 63 individuals – a value for such a relatively small sample suggests the entire deposit probably contained a significant density/abundance of *clupeid* remains. The very small size of these fish was revealed by length measurements taken on the selected vertebrae which ranged from 0.8 to 1.3mm; equivalent to the recent comparative herring specimens of *c.* 75 to 105mm total length referenced by Hamilton-Dyer (2008, 2-3) and comparable with modern 'whitebait'. As noted by Wheeler (1979, 172) herring of this size-range are young/juvenile fish aged 10 to 12 months and usually found in inshore waters or in estuaries. The remaining deposits yielded a few isolated vertebrae of the following marine/estuarine fish: 1 *Salmonid* (salmon family) and two flatfish (probably either plaice *Pleuronectes platessa* or flounder *Platichthys flesus*). The only freshwater species identified was perch *Perca fluviatilis* – represented by an isolated scale.

Context	Context description	Date	Taxon	Skeletal element	No. bones	Notes
399	Burnt deposit, possible 'rakings' out of oven F553	C2nd+	*Sparid* cf. black sea-bream *Spondyliosoma cantharus*	caudal vertebra	1	pale brown (?charred)
			Clupeids: herring/sprat *Clupea harengus*/ *Sprattus sprattus*	vertebrae	500++	estimated from submitted sample - see also *Clupeids* from flot sub-sample (Table 2)
			unidentified	precaudal vertebra	1	burnt/ brownish
			unidentified	vertebra	1	burnt/ black
518	Charcoal rich single fill of oven F546	C2nd+	unidentified	spine	3	unburnt
			unidentified	vertebra	1	unburnt
1152	Mixed fill of stoking pit and oven chamber within oven F1150	C3rd+	*Salmonid* (salmon family)	caudal vertebra	1	fragmented/incomplete; unburnt
			unidentified	spine	1	unburnt
1298	Waterlogged and charcoal rich lower fill of cess pit F1297	C3rd+	plaice/flounder *Pleuronectes platessa* / *Platichthys flesus*	vertebra	1	small fish
			plaice/flounder *Pleuronectes platessa* / *Platichthys flesus*	caudal vertebra	1	tiny fish
1372	Burnt/Ash rich fill of well/pit F1405	Late C3rd	perch *Perca fluviatilis*	scale	1	unburnt
			? perch *Perca fluviatilis*	spine	2	unburnt
			unidentified	vertebra	1	burnt/ grey
			unidentified	vertebra	1	burnt/ white (calcined)
1401	Charcoal/Ash rich layer lower fill of cesspit F1405	Late 3rd century	unidentified	caudal vertebra	1	unburnt but some adhering ashy material
1487	Second fill of slate lined pit F1297	Mid 3rd century +	unidentified	vertebra	5	very small vertebrae

Table 29: Fish bones. Taxonomic identifications by context

Bone	NISP	Notes
pro-otic bulla	125	91 unburnt; 21 charred/ brown; 9 burnt/ black; 4 burnt/ white (calcined)
maxilla	10	
dentary	2	fragments
articular	1	
quadrare	1	
vertebra (estimated)	500++	includes a few burnt white (calcined) vertebrae

Table 30: *Clupeid* (herring/sprat) skeletal elements from the 20g sub-sample 500 micron flot (context 399). NISP = Number of identified specimens

Interpretation and discussion

The presence of sea bream is typical of South West Romano-British fish assemblages (see Locker 2007, 153) and the *Salmonid* found at the Topsham site further supports the suggestion that salmon fisheries may have operated along the South West coast during the Roman period (*Ibid*., 153). A local river fishery probably supplied the perch whilst the herring/sprats would most probably have come from fisheries operating in the Exe estuary or close inshore near the river's mouth. Traditionally the Devon fisheries have caught herrings close inshore by fixed nets fastened to stakes set in the sea bed and by fish traps (Southward *et al.* 1988, 425) and these may also have been the techniques employed during the Roman period. An alternative – or additional - means for taking herrings may have been the use of fine-meshed nets cast from moored boats in the manner depicted on a first century Roman lamp illustrated in Bateman and Locker (1982, fig. 3, 207).

Deposit 399 - In order to understand the significance of the concentration of young herring/sprat bones forming the fish component of deposit 399 at the Topsham site reference can be made to similar assemblages reported from other Romano-British sites; among them Peninsular House, London (Bateman and Locker 1982), *Durnovaria* (Roman Dorchester, Dorset) (Hamilton-Dyer

2008) and Stanford Wharf Nature Reserve, Essex (Nicholson 2012). From the descriptions of these previously documented assemblages, the deposit discovered at the Wessex Close site is identified as *allec*, the residue from the production of a salted fish sauce. Locally sourced small juvenile herring and sprats (fish chosen for their high fat content) would have been boiled in brine and left to 'ferment' for several months, after which time the liquid fish sauce was strained off, leaving behind the *allec* - mush (residue) of macerated flesh, bones and scales.

In the Roman Mediterranean, strongly flavoured, salty, spicy fish sauces were highly popular condiments and were manufactured as a by-product of special fish-salting installations located along the shores of the Western Mediterranean and Northern Africa (Lernau *et al.* 1996, 38 - 9). Unlike the North Western European product, the main ('genuine') Mediterranean fish sauce known as *garum* was manufactured from sardines, anchovies or red mullet; the fish left in saline-filled vats in the heat of the sun for several months to auto digest. The resultant liquid was filtered and drained off as *garum* - which was exported throughout the Roman world, transported in amphora (Bateman and Locker 1982; Lernau *et al.* 1996; van Neer *et al.* 2010; and Grainger 2013). Differences in species of fish available and in climate conditions meant that the locally produced fish sauce in North West Europe was based on herring/sprats and necessitated the boiling of the fish rather than relying on the heat of the sun to facilitate the fermentation process. This latter observation may explain the apparent association of the Wessex Close deposit and a structure identified as an oven; and supports the interpretation made by Hamilton-Dyer (2008, 5) with reference to an analogous association for Roman Dorchester.

It remains to be answered as to whether the Wessex Close fish-sauce production had been carried out on a small scale to meet the requirements of local inhabitants or operated on a larger commercial scale to supply *Isca Dumnoniorum* (Roman Exeter)? Such an industrial installation at the site would have been ideally located; with an abundant source of suitable fish in the estuary/mouth of the river Exe to the south and markets for the product in *Isca* – the adjacent road providing a direct transportation route.

Both the Dorchester and Topsham *allec* deposits are dated to the 2nd and 3rd centuries AD which possibly is highly significant in the light of the observation made by van Neer *et al.* (2010, 177) that the importation to North Western Europe of 'genuine' Mediterranean fish sauces had begun to decline by the early 2nd century AD and local producers stepped in to supply the Roman tastes. The Topsham installation therefore seems to fit this scenario and importantly (as far as the present author is aware) represents the furthest westward evidence of an installation in Britain operating near the coast.

6.19 Medieval pottery *by John Allan and Charlotte Coles*

A total of 13 sherds of medieval pottery (164g) was recovered. These include one slashed handle of a North French green-glazed white ware dating from the early 13th century. The other sherd of imported medieval pottery is a French whiteware folded handle, probably Saintonge. Three sherds of Upper Greensand-Derived pottery were recorded; these date from the 11th-12th century. A further three sherds retrieved are from an Exeter fabric 40 slipped jug, that from context 1351 has an external green glaze.

The pottery from context 1003 is three sherds of Upper Greensand Derived ware dating from 11th-13th century and a sherd of South Somerset ware dating from *c.* 1300-1450. A single large handle fragment was recovered from context 1144: an Upper Greensand-Derived vessel, possibly a tripod pitcher handle, of the 13th century.

6.20 Post-medieval pottery *by John Allan and Charlotte Coles*

Little medieval or later pottery has been recorded from Topsham so this assemblage adds new information about pottery usage there. Most of the pre-1750 pottery consists of local coarse wares from South Somerset and North Devon, but there is a significant scatter of imports as well.

These imports are distinctive. The piece of North Holland slipware bowl is comparable with other finds from Topsham, however its presence is significant. Burnished Merida ware has not been found previously in Topsham. The other new find is the Beauvais stoneware; represented by two different vessels. The other interesting aspect to the collection is the sugar refining vessels. The presence of a sugar house in the grounds of Retreat House has previously been noted (Fox, 1991). The sugar refining wares includes local syrup jars and a large vessel were made of Red ware, but interestingly the cones, are slightly micaceous and are probably Portuguese imports (cf. Goldsmith Street, Exeter). The pottery from the two phases of excavation is catalogued below (Table 31).

Context	No. of sherds	Type of pottery
100	1	Westerwald Tankard, 1680-1720
100	5	S. Somerset, 4 sherds plain and 1 sgraffito. C17th-C18th
100	2	Redware, sugar refining vessel. Late C17th-early C18th
101	4	S. Somerset plain cw, C17th-18th
101	1	North Devon gravel tempered ware
101	1	Redware, sugar refining vessel. Late C17th-early C18th
103	1	Delft charger. English or Dutch. Late C17th
103	1	White ware, ?Border ware. Late C17th-C18th
103	2	S. Somerset cw. C18th
105	2	Beauvais stoneware, cup. Late C15th-early C16th
105	2	Westerwald, 1 tankard c. 1700AD, 1 chamberpot Mid C18th
105	2	Frechen Stoneware, late C16th – C17th
105	1	N. Holland slipware, bowl, c. 1650-1750
105	3	Sand-tempered dark redware, ?Sussex
105	21	S. Somerset, C17th - C18th
105	1	N. Devon sgraffito, c. 1660-1700
105	1	N. Devon gravel tempered
105	3	Unclassified white ware, poss SE England
105	11	Staff ww, after 1770
105	2	Red ware, sugar refining, rim from a large sugar cone
137	1	Merida ware. Tail of a handle
141	1	Frechen, drinking jug. Late C16th
147	1	Red ware. Sugar refining. Late C17th-early C18th
149	2	Red ware, sugar refining, 1 syrup pot and 1 large tripod. Late C17th-early C18th
310	1	S Soms cw. C17th-C18th
397	1	Staffordshire ww, after 1780AD
397	1	Red ware, poss Sussex
484	1	Delft, poss Dutch, c1670-1700AD
484	2	S Somerset cw. C17th-C18th
1001	1	Westerwald, C18th
1001	1	Red ware, ?Sussex.
1001	6	S. Somerset cw. C17th-C18th.
1001	1	Staffordshire ww after c1770.
1003	1	Westerwald, stamped. c. 1600-1650.
1003	6	S. Somerset. Late C16th-C17th
1003	1	N. Devon cw.
F1020	1	Non-local redware, ?Sussex, ?Late C18th
1022	1	Merida, rim of sugar cone. Late C17th – early C18th.
1023	1	London Delft, Manganese-decorated cup. Early C17th.
1023	2	S. Somerset. C17th-C18th.
1024	1	Delft. Dutch c1700-1730.
1024	1	Border ware. Late C17th- early C18th.
1024	4	S. Somerset. 3 dishes C17th, 1 plain cw C18th.
1030	1	N. Italian marbled ware, C17th or early C18th.
1030	4	S. Somerset. C17th.
1042	1	N. Devon sgraffito. Small vessel with internal decoration, c1650-1700.
1037	1	Beauvais, cup. C15th-C16th.
1060	1	Merida ware.
1060	1	Creamware, after c1770.
1060	1	Staffordshire ww, after 1770.

1078	1	Border ware, base of dish. Late C17th-early C18th
1080	1	S. Somerset, jar with slip bands, poss bucket handled. Late C16th – C17th.
1151	1	S. Somerset, C17th. Unknown.
1254	1	Delft, source unknown. Early to Mid C18th.
1339	1	Frechen. c1550-1720.
1446	1	Frechen. c1550-1720.
1448	1	Delft Dutch. Dish. c1680.
1448	1	White ware, possibly border ware.
1448	2	S. Somerset cw. Late C17th-C18th.
2000	1	Flowerpot. C18th-C19th.
2014	1	Westerwald Tankard. c1670-1700.
2014	1	Frechen. Underfired.
2014	1	Border ware ornament pot.
2014	1	Bristol/Staffordshire yellow slipware
2014	1	Sandy Red ware. ?Sussex.
2014	7	S. Somerset scaffito, including 1 dish. C17th-C18th.
2014	4	S. Somerset plain. C17th-C18th.
2014	2	N. Devon plain slipware. 1 cup and 1 jug.
2014	2	N. Devon gravel tempered, form unknown.
C = Century, N = North, S = South, cw = coarse ware, ww = whiteware		

Table 31: Post-medieval pottery catalogue

6.21 Post medieval clay tobacco pipes *by Charlotte Coles*

A total of 61 clay tobacco pipes was recovered. These are seven bowls and 54 stems.

The seven bowls mostly date from the 17th century with the significant presence of two especially early clay tobacco pipes from 1610-1640. All the clay pipe bowls and stems are undecorated except for milling present around the tops of the bowls. There are also no maker's marks. Three of the clay tobacco pipes were not used and had no signs of burning, three had small amounts of burning within the bowl and one pipe had been heavily used with extensive burning inside the bowl. Two of the stems were made with red clay.

6.22 Post-medieval glass *by Naomi Payne*

A total of 20 sherds (222g) of post-medieval glass was recovered from six contexts (see Table 32). Cleaning context 105 contained six sherds of green bottle glass, including one base sherd with a deep kick-up, and a neck and rim sherd from a wine bottle. The short length and curvature of the bottle neck suggest a date in the late 17th or early 18th century. There were also two sherds of window glass from this context, one clear and the other green. The only other piece of window glass, a small fragment of textured green window glass, was recovered from cleaning layer 1003. Additional sherds of green bottle glass were recovered from subsoil, cleaning layer 1003, post-medieval soil layer 1030 and context 2014, fill of ditch F2005. They include a single base sherd from post-medieval soil layer 1030; the remainder are body sherds.

Context	Context Description	No.	Wt (g)
101	Subsoil	1	7
105	Cleaning layer above building demolition deposits	8	133
1001	Subsoil	1	22
1003	Cleaning over Roman building	4	13
1030	Post-medieval soil layer	1	9
2014	Fill of ditch F2005	5	38
Total		11	82

Table 32: Summary of post-medieval glass by context

6.23 Post-medieval ceramic building material *by Naomi Payne*

A total of 43 fragments (10891g) of post-medieval ceramic building material was recovered from six contexts (Table 33). Most of this material is post-medieval to modern brick, with the exception of a fragment of glazed floor tile from cleaning context 105. The brick assemblage includes three fragments of Flemish brick from cleaning context 1003. These are made in a sandy buff-coloured

fabric. Two original widths (86mm and 84mm) and three depths (40mm, 42mm and 39mm) are present, which are consistent with the usual size of *c.* 170mm by 80mm by 35mm (Allan 1984, 232). Customs documents show that bricks like these were imported into Exeter in particularly large quantities between *c.* 1675 and 1714 and many examples can be seen in the standing buildings of Topsham (Allan 1984, 231-2). One other brick fragment, from ditch F311, is also in a yellowish buff fabric, but this example is larger with a width of 100mm and a depth of 63mm. The remainder of the bricks in are coarse sandy red fabrics and were probably locally made. A post-medieval brick kiln was excavated at Newport Park, to the northwest of the site, in 2009 (Manning, Steinmetzer and Pearce 2010). Several fragments of the locally made brick appear to be heat-affected, suggesting they are related to the vitrified building material described in the section on slag.

Context	Context Description	No.	Wt (g)
103	Fill of linear ditch F311	1	569
105	Cleaning layer above building demolition deposits	7	199
1003	Cleaning over Roman building	3	799
1023	Fill of post-medieval quarry F1022	25	5942
1041	Fill of post-medieval pit F1040	4	1801
1078	Upper fill of post-medieval quarry pit F1072	3	1548
Total		43	10891

Table 33: Post-medieval ceramic building material by context

6.24 Coal and clinker *by Naomi Payne*

A total of 17 fragments (97g) of coal was recovered from 12 post-medieval contexts (see Table 34). In addition 28 pieces (55g) of clinker were recovered from three contexts, including a cleaning context above the Roman building (Structure 3) and two deposits within ovens of Roman date. These are presumably waste products associated with burning fuels in the ovens.

Context	Context Description	Period	No.	Wt (g)
105	Cleaning layer above building demolition deposits	P-M	1	2
518	Burnt deposit within oven F546	R-B Ph2	26	46
1001	Subsoil		1	5
1003	Cleaning over Roman building		1	5
1023	Fill of post-medieval quarry pit F1022	P-M	1	7
1030	Post-medieval soil layer	P-M	2	6
1035	Robbing of foundation F1034	P-M	1	1
1037	Robbing of foundation F1036	P-M	2	4
1041	Fill of post-medieval pit F1040	P-M	1	7
1080	Fill of post-medieval quarry pit F1022	P-M	2	10
1142	Fill of oven F1140	R-B Ph3a	1	7
1351	Cleaning over stone structure F1350	P-M	1	1
1385	Post-medieval truncation	P-M	1	16
1448	Fill of post-medieval pit F1447	P-M	3	28
Total			44	145

Table 34: Summary of coal by context

7. ENVIRONMENTAL REMAINS

7.1 The charred and waterlogged plant remains *by Wendy J. Carruthers*

Introduction and methods

The excavations exposed Romano-British remains including industrial features, corn drying ovens, wells and cess pits. Soils in the area are non-calcareous sandy and clayey brown soils, some of which are well-drained (to the west of Topsham) and some of which are slow-draining (along the Exe estuary and to the east).

Sixteen samples were submitted for analysis, of which six (from corn drying ovens and a cess pit) produced an assemblage of charred plant material worthy of comment and one (sample 17, well F1311) produced a waterlogged assemblage. The samples were processed by AC archaeology using standard methods of flotation in the case of the dry deposits and a wash-over technique for the waterlogged deposits (basal fill of well F1311). Wash-overs from samples suspected of containing waterlogged plant remains were kept wet. The minimum mesh size used for both wet and dry deposits was 250 microns. The flots, extracted charred remains and wash-overs were examined under an Olympus SZX7 stereoscopic microscope.

Results

The results of the analysis are presented in Table 35. Nomenclature follows Zohary and Hopf (2000) for the cereals and Stace (2010) for the remaining taxa. Habitat information is taken from Stace (*ibid.*) and a variety of other texts, including Hill *et al.* (1999) and Ellenburg (1988).

	sample	6	10	12	2	3	17	18
	context	399	565	518	1145	1152	1484	1487
taxa	feature	oven F553	oven F553	oven F546	oven F1140	oven F1150	well F1311	cess pit F1297
Triticum aestivum/spelta (free-threshing/spelt wheat grain)							1	
Triticum dicoccum/spelta (emmer/spelt grain)		77	29	7	2f	2		
Triticum dicoccum/spelta (possibly sprouted emmer/spelt grain)				10				
Triticum sp. (indeterminate wheat grain)		2	7					
Hordeum vulgare L.emend. (six-row hulled barley, twisted grain)		2						
Hordeum sp. (hulled barley grain)		4	4					
Hordeum sp. (indeterminate barley grain)		2	6			2		
Avena cf. sativa L. (cultivated-type oat grain, 5.5-7mm)		8	10					
Avena sp.(wild/cultivated oat grain)		55	60	cf.1	2f	1	1f	
Avena/Bromus sp. (oat/brome grain)			5					1f
Indeterminte cereals		122	43	8		1	(4)	
CHAFF								
Triticum dicoccum (emmer glume base)				cf.1				
Triticum dicoccum (emmer spikelet fork)							(cf.2)	
T. spelta L. (spelt glume base)		43	5	2			1 (14)	2
T. spelta L. (spelt spikelet fork)		2	1				(6)	
T. dicoccum/spelta (emmer/spelt glume base)		99	50	2			3 (4)	2
T. dicoccum/spelta (emmer/spelt spikelet fork)		61	39				2 (1)	2
T. dicoccum/spelta (emmer/spelt rachis frag.)		4	2	2			1 (1)	
Hordeum sp. (barley rachis frag.)			2					1
Avena sp. (indeterminate oat floret base frag)			1					
Avena sp. (oat awn frags)		++	++					

detached cereal embryo			3				
cereal straw fragment						(+++)	
cereal culm node						(+++)	
cereal culm base						(++)	
OTHER POTENTIAL FOODS / FLAVOURINGS							
Pinus pinea L. (stone pine nutshell frags) *							16
Pinus pinea L. (stone pine apical cone scale) *						(1)	
Prunus spinosa L. (sloe stone) HSW						(1)	
Crataegus monogyna Jacq. (hawthorn fruit stone) HSW				1			
Fragaria sp. (strawberry seed) HSW						(3)	
Corylus avellana L. *(*hazelnut shell frag.) HSW						1 (1)	
Sambucus nigra L. (elder seed) DHSW						(1)	
Coriandrum sativum L. (coriander mericarp) *						(4)	
Anethum graveolens L. (dill mericarp) *						(2)	
WEEDS & WILD PLANTS							
Pteridophyta including *Pteridium aquilinum* (L.)Kuhn (bracken & fern frond frags) EGWa						(+++)	
Fumaria sp. (fumitory achene) CD						(1)	
Ranunculus lingua L. (great spearwort achene) MF						(2)	
Ranunculus acris/bulbosus/repens (buttercup achene) DG						(3)	
Ranunculus sp. (buttercup embryo)	1						
Vicia/Lathyrus sp. (<2mm small vetch seed)	3	1					
Vicia/Lathyrus sp. (c. 2-3mm small vetch seed)		1					
Medicago/Trifolium/Lotus sp. (medick/clover/trefoil seed) GD				1			
Ulex sp. (gorse spines) GE						(+++)	
Filipendula ulmaria (L.)Maxim. (meadowsweet achene) Gw						(4)	
Potentilla sp. (cinquefoil achene) DGMY						(3)	
Agrimonia eupatoria L. (agrimony achene) GH						(1)	
Aphanes arvensis L. (parsley-piert achene) Co						(2)	
Urtica dioica L. (stinging nettle achene) CDn						(1)	
Urtica urens L. (small nettle achene) CDn			1			(61)	
Alnus glutinosa L. (alder seed) WSF						(1)	
Viola sp. (violet seed) GEWSH						(7)	
Malva sylvestris L. (common mallow nulet) DG						(4)	
Raphanus raphanistrum ssp. *raphanistrum* (wild radish mericarp) CD	1					(3)	
Polygonum aviculare L. (knotgrass achene) CD	1e					(23)	
Rumex sp. (dock achene) CDG	2					(2)	
Rumex acetosella L. (sheep's sorrel achene) EoGCas						1 (4)	
Stellaria media(L.) Vill. (common chickweed seed) Cno						(14)	
Stellaria graminea L. (lesser stitchwort seed) G			1			(1)	
Scleranthus annuus L. (annual knawel achene) Dos						(3)	
Montia fontana ssp. *chondrosperma* (Fenzl.)Walters (blinks seed) Gw						(2)	
Calluna vulgaris (L.) Hull (heather seed) Esp			5				

Calluna vulgaris (L.) Hull (heather shoot tip) Emsp			1				
Erica sp./*Calluna vulgaris* (heather, ling capsules) EM			11				
Hyoscyamus niger L. (henbane seed) Dn						(66)	
Plantago lanceolata L.(ribwort plantain seed) Go	1						
Lamium sp. (dead-nettle nutlet) CDY						(3)	
Prunella vulgaris L. (selfheal nutlet) GDWo						(9)	
Rhinanthus sp.(yellow-rattle seed) G						(3)	
Carduus/Cirsium sp. (thistle achene) GDY						(2)	
Centaurea sp. (knapweed achene) GDA						(3)	
Leontodon autumnalis L. (autumn hawkbit achene) G						(4)	
Sonchus asper (L.)Hill (prickly sow-thistle achene) CDY						(1)	
Anthemis cotula L. (stinking chamomile achene) Adhw	1	2				(20)	
Tripleurospermum inodorum (L.)Sch.Bip. (scentless mayweed achene) AD		3					
Anthriscus caucalis M.Bieb. (bur chervil mericarp) DHNos						(28)	
Sparganium erectum L. (branched bur-reed fruit) PM	1						
Carex spp. (trigonous sedge nutlet) MPw	1	1				(10)	
Carex spp. (lenticular sedge nutlet) MPw						(7)	
Arrhenatherum elatius var. *bulbosum* (Willd.)St-Amans (onion couch tuber) ACG	1f						
Bromus sect. *Bromus* (brome grass caryopsis) AD	14					2	
Danthonia decumbens (L.) DC (heath-grass floret) EGa						(cf. 5)	
Indeterminate Poaceae caryopsis	2	2 [1]	2		1	(13)	
rose/blackberry-type thorn						(2)	
TOTAL	510	274	57	6	7	13 (363)	24
volume of soil processed (litres)	20	10	18	10	10	0.5	5
charred / (waterlogged) fragments per litre	25.5	27.4	3.2	0.6	0.7	26 (726)	4.8

Table 35: Results of the charred and waterlogged plant remains analysis

The only deposit containing a diverse waterlogged plant assemblage was the basal fill of well F1311. This deposit was so rich that a sub-sample of ¼ by weight was analysed from the wash-over obtained from processing 2 litres of sediment. The sample size is therefore presented as 0.5 litres at the base of Table 35. The remaining wash-over from this sample was coarse-sieved through a 5mm mesh in order to look for large items such as fruit stones, but none were found. All other flots were fully analysed. They are described below by period and feature.

Some notes on identification

Oven F553 was found to contain frequent spelt wheat grains and chaff as well as frequent oat grains. The identification of oat grains, in the absence of chaff, is difficult, as grain sizes vary considerably depending on the position in the ear and species present (Jacomet 2006). However, grains of common oat (*Avena sativa*) can be fairly safely assigned to the species when they present the following characteristics together:

- grain length is greater than 5.5mm;
- the widest point of the grain is below the mid-point and the grain is plump

Common oat grains are rounded and plump in appearance and un-eroded grains often possess long hairs on their surfaces. These criteria were used in tentatively assigning the largest, plumpest grains to *Avena* cf. *sativa* (see Table 35). It should be noted, however, that the identification was unconfirmed since no identifiable oat chaff fragments were recovered. The remaining oats were classified as *Avena* sp., a category that includes wild oat (*A. fatua*), common oat (*A. sativa*) and bristle oat (*A. strigosa*).

Although emmer and spelt wheat grains cannot be confidently identified to species level (Jacomet 2006), all of the identifiable chaff fragments were from spelt (*Triticum spelta*) apart from a single possible charred glume base of emmer (*Triticum* cf. *dicoccum*) from oven F546 and two possible waterlogged emmer spikelet forks from well F1311. Because the state of preservation of these three remains was poor no definite identifications of emmer wheat were obtained. It is likely, therefore, that spelt was the only wheat crop being processed and consumed in the area at this time, although some relict emmer may have persisted in the fields.

Romano-British phase 2

Cess pit F1297
Although the charred items from cess pit F1297 (sample 18, context 1487) were infrequent, they provided evidence for the consumption of an imported luxury food. The assemblage consisted of a little chaff (spelt and emmer/spelt glume bases and spikelet forks, plus a barley rachis), a poorly preserved oat/brome caryopsis and sixteen fragments of charred stone pine nutshell. The recovery of stone pine nutshell ties in with the retrieval of a waterlogged apical stone pine cone bract from well F1311.

Although a sub-sample of the residue from this deposit was scanned there was no evidence for preservation by mineralisation, as is found in some cess pits. Waterlogging can sometimes prevent calcium phosphate mineralisation from taking place, as rapid organic decay is part of the process of mineral replacement (McCobb *et al.* 2000).

Oven F546
A small assemblage was recovered from sample 12, context 518 from oven F546. Seventeen emmer/spelt grains in a very poor state of preservation were recovered, most of which (10 grains) showed the following signs of sprouting; collapsed grains and grains with the embryo end burnt away. In addition, three detached cereal sprouts were present. Only one poorly preserved possible oat grain was recovered. The few chaff fragments included some spelt and a possible emmer glume base (*Triticum* cf. *dicoccum*).

The second category of material present in small amounts most likely derived from fuel used in the oven. A few heather (*Calluna vulgaris*) seeds, a shoot tip and some indeterminate heather/ling fruits were present, in addition to traces of three other plants that might have been collected amongst fuel/tinder; a small nettle seed (*Urtica urens*), a lesser stitchwort seed (*Stellaria graminea*) and two grass seeds (Poaceae).

Because so few cereal remains were present in this oven it is not possible to be sure that malting was taking place. However, it is clearly a possibility that sprouted spelt grains were being roasted for the production of malt, with only traces being preserved by charring. An alternative explanation was that grain spoilt under damp storage conditions had been burnt as waste amongst the fuel.

Well F1311
A very different assemblage was recovered from the basal fill of well F1311 (sample 17, context 1484). The deposit appears to have remained waterlogged throughout its history, since organic material was well-preserved and fairly diverse in composition. A few charred cereal grains (an

oat/brome caryopsis), chaff fragments (spelt and emmer/spelt glume bases and spikelet forks) and weed/wild plant remains (sheep's sorrel - *Rumex acetosella*), brome grass and hazelnut shell (*Corylus avellana*)) were also present, demonstrating similarities with the oven assemblages in the crops being used.

The principal components of the waterlogged well fill were small twigs, worked wood chips, cereal straw and chaff fragments. Where the chaff was identifiable it consisted of spelt glume bases and spikelet forks, with a trace of possible emmer chaff. This echoes the situation with the charred plant remains, suggesting that spelt was the principal crop at this time but traces of emmer may have perpetuated as a relict crop. It was notable that no oat chaff was observed, even though it is more likely to survive waterlogging than charring. Oat straw is not easily differentiated from spelt straw so the straw remains have not been identified to species level. Since oat florets readily fall from the glumes after harvesting and oat straw is a valuable source of fodder, it is less likely to have been deposited in the well as waste. Waterlogged cereal grains were occasionally present within the spikelets. Grains free of chaff were not identifiable as they become crumpled and misshaped when waterlogged. Some straw bases with visible roots were present, suggesting that at least some of the cereals had been uprooted. However, occasional uprooting can happen accidentally when harvesting with a sickle. It is uncertain whether the cereal remains represent the direct deposition of waste from crop processing, the deposition of waste animal bedding or the dumping of straw surviving in manure. The latter explanation seems unlikely because of the good state of preservation of the remains, showing no signs of digestion or chewing. Neither were there signs of chopping the straw into lengths in preparation for an industrial use, such as the making of wattle and daub. This subject is discussed further below.

Other types of materials deposited in the well included frequent small fragments of ferns and bracken (various Pteridophytes including *Pteridium aquilinum*) and fragments of gorse (*Ulex* sp.) including spine fragments and larger portions of stem nodes with spines. This type of vegetation is likely to have been growing locally on the lowland heaths of Devon, such as Woodbury Common to the east of Topsham. Some of the fruits and seeds in the well may also have come from this habitat, including sheep's sorrel and possible heath-grass florets (cf. *Danthonia decumbens*). However, heather and ling remains were not present. The majority of fruits and seeds came from either grassland / meadow plants, including several from damp meadows probably located on floodplains, or nutrient-enriched disturbed places such as middens and farmyards. The meadow / grassland plants included grasses, buttercups (terrestrial and the marsh plant great spearwort (*Ranunculus lingua*)), meadowsweet (*Filipendula ulmaria*), common mallow (*Malva sylvestris*), blinks (*Montia fontana* ssp. *chondrosperma*), self-heal (*Prunella vulgaris*), yellow rattle (*Rhinanthus* sp.), autumn hawkbit (*Leontodon autumnalis*) and sedges (*Carex* spp.). The recovery of frequent bur chervil fruits (*Anthriscus caucalis*; 28 fruits) could suggest a coastal location for the source of some of this vegetation, as it is often found on sandy or shingley soils near the sea (Stace 2010). Presumably this group represent the deposition of hay, or plant remains surviving in the dung of livestock grazing on marshes and heathland.

Nitrophilous plants of wastegrounds and disturbed places were often present in the largest numbers, for example henbane (66 seeds; *Hyoscyamus niger*), small nettle (61 seeds; *Urtica urens*), common chickweed (14 seeds; *Stellaria media*) and knotgrass (23 seeds; *Polygonum aviculare*). This suggests that, as a whole, the source of the material may have been midden waste, consisting of stable waste mixed with domestic refuse. There was no definite evidence for the presence of human sewage amongst the midden material, i.e. no bran fragments were observed, fruit and spice remains were scarce and no ground-up fragments of weed seeds such as corn cockle were recorded. However, there were a few remains that may have been deposited amongst domestic waste or faecal waste. These included imported spices such as coriander (*Coriandrum sativum*) and dill (*Anethum graveolens*) and some native fruit and nut remains (hazelnut shell, elder seed (*Sambucus nigra*), strawberry (*Fragaria* sp.), hawthorn and sloe (*Prunus spinosa*). In addition, an apical cone bract from stone pine (*Pinus pinea*) was present in

the well fill, representing a further example of an imported food/medicinal plant. The significance of stone pine is discussed below.

Romano-British phase 3a

Oven F553
Two samples were examined from this structure; sample 6, context 399 came from the stoking pit and sample 10, context 565, was taken from the flue. Both samples were rich in charred plant remains, producing 25.5 and 27.4 fragments per litre of soil processed (fpl) respectively. The assemblages were so similar (taking into account the fact that the sample size for sample 6 was twice that of sample 10) that they have been described together. The reasons for this are discussed below.

The dominant charred plant remains were cereal grains, although chaff fragments were almost as common. Adjusting for the fact that one spikelet fork would have held two grains, the quantities of grains and chaff fragments were very similar. Spelt wheat was the most frequent cereal according to the number of emmer/spelt wheat grains and spelt glume bases in the sample from the stoke pit (sample 6). No chaff fragments of emmer were identified from this feature, so it is presumed that most (if not all) of the emmer/spelt grains were from spelt wheat.

The sample from the flue (sample 10) produced more oat grains than emmer/spelt wheat, although spelt and emmer/spelt chaff was just as frequent as in the stoke pit. Oat chaff is more delicate and does not survive charring well so chaff data cannot be used in the comparison of quantities of oats and spelt. Common-type oat (*Avena* cf. *sativa*) was present in both samples, although this is a tentative identification based on grain morphology alone (see 'notes on identification' above) as no identifiable oat chaff was recovered. Further support for a cultivated species being present is the high frequency of oat grains in total and the presence of oat awns in moderate numbers, rather than in abundance, as is likely for bristle oat and wild oat which are much more heavily awned.

Traces of barley including six-row hulled barley (*Hordeum vulgare*) were present in both samples, with two fragments of barley rachis in the flue sample. This cereal appears to only be present as a contaminant (perhaps a relict crop) of spelt and oats.

Seeds from weeds and possible fuel taxa were much less frequent, amounting to around 4% of the total remains. The only weed taxon present in any quantity was brome grass (*Bromus* sect. *Bromus*; 14 caryopses), which is a large-grained grass of a similar size to spelt and oat grains so it would have been difficult to sieve out of processed grain. Taxa that were probably contaminants of the crops being dried in the oven include small-seeded vetch (*Vicia/Lathyrus* sp.), wild radish (*Raphanus raphanistrum*), knotgrass (*Polygonum aviculare*), dock (*Rumex* sp.), scentless mayweed (*Tripleurospermum inodorum*) and stinking chamomile (*Anthemis cotula*). The presence of wild radish and stinking chamomile suggest that cereals were being grown on non-calcareous, sandy soils as are found to the west of Topsham and damp, clayey soils as are found along the Exe estuary and to the east. Some of the other weed/wild plant taxa may either have been gathered as tinder / fuel or have grown as arable weeds. These include plants of grassy, marshy and waste areas, including buttercup (*Ranunculus* sp. embryo), ribwort plantain (*Plantago lanceolata*), and grass seeds (various Poaceae). Branched bur-reed (*Sparganium erectum*) and sedge (*Carex* sp.) may have been growing in drainage ditches surrounding arable fields, or they could have been gathered from marshy land for kindling / fuel.

This type of assemblage is likely to be the result of drying at least two crops for slightly different reasons; spikelets of spelt and oat florets. Oats are harvested a little under-ripe to prevent the grains from being shed from the ear. They, therefore, require drying to reduce the moisture content prior to storage or milling. They also need to be parched in order to remove the outer

husk, although the husks are softer than those of spelt so whole grains can also be used. Spelt requires parching in order to make the husks brittle enough to be rubbed from the grain. Whole cleaned spikelets would have been placed in the oven, producing waste that would have been rich in chaff but contain few weed seeds. The waste from these processes would also have been used to light and fuel the oven. It is likely that a mixture of charred cereals being dried, fuel being used and ash from previous firings would become drawn into the flue of the oven while it was in use. The stoke pit would also have contained a mixture of materials that had been cleaned out of the oven and fuels being used to produce the heat.

Oven F1140
Very little can be said about the use of this oven as only six charred plant remains were recovered from the sample (sample 2, context 1145); two poorly preserved emmer/spelt grain fragments, two fragments of oat grain, a hawthorn fruit stone (*Crataegus monogyna*) and a seed from medick/clover/trefoil (*Medicago/ Trifolium/ Lotus* sp.). The items probably represent all that remained of the crops being dried and fuels being used after the oven was swept out and fell out of use, as charcoal was also scarce in this feature (Challinor, below). The hawthorn fruit may have been burnt amongst twiggy wood used for tinder / fuel.

Oven F1150
As with the previous oven, very little charred material was recovered from sample 3, context 1152 to provide information about the use of the oven. The cereal remains that were present were in a very poor state of preservation, suggesting that they may have been repeatedly charred in the bottom of the oven for some time. Two emmer/spelt grains, two barley grains, an oat grain and an indeterminate cereal grain were recorded. The only weed / wild plant seed to survive was a single small grass seed (indeterminate Poaceae). This oven had also probably been swept out prior to abandonment.

Discussion
Although few of the samples were productive, one of the ovens, F553, and well F1311 produced notable assemblages that have provided an insight into the economy of Roman Topsham. Oven F553 is very unusual in producing evidence for the cultivation of both spelt and common oats (unconfirmed identification). In a review of Roman corn driers in Britain (van der Veen 1989) spelt (or unspecified wheat) was recorded in all but one oven, which contained barley. No oats were recorded as crop plants, although occasional oats considered to be weeds may have been present in some samples. A more recent review of plant macrofossils from the Midlands produced the same results – spelt dominated most of the assemblages and barley was sometimes present, but none contained sufficient oats to be worth considering them as a crop plant (Carruthers and Hunter, forthcoming). However, some sites in South West England located on poorer, acidic soils have produced evidence for common oats that has been confirmed in Cornwall through the presence of identifiable chaff fragments, including a pit at Pedna Carne dated to AD 70-410 (Wk-9850, 1793 ± 64 BP) and samples from the 'round' ditch and midden at Penhale Round (both in Carruthers 2016). At Penhale Round spelt dominated the earlier Roman assemblages, but by the later Roman period oats had taken over as the dominant crop plant, perhaps through necessity rather than choice. It appears that both common oat and bristle oat were being cultivated at this site. As at Topsham, barley appears to have been a minor crop and the traces of emmer wheat may represent a relict crop.

It is likely, therefore, that oven F553 at Topsham confirms the suggestion that by the late Roman period oats had been accepted as being one of the few crops that would produce reasonable yields on the poor, sandy, acidic soils of South West England. It also can cope with wet summers and, because it requires drying following harvest in order to complete the ripening process (see above), it can be safely stored for some time while still enclosed in the husk. The presence of both spelt and oats in the oven is probably due to the oven being used to dry a variety of crops at different times (described above), rather than the two cereals being grown as a maslin. The

need to harvest oats early before the grain is shed would make this type of mixed crop difficult to handle. It is also unlikely that oats were being used for brewing, as online brewing forums suggest that adding oatmeal can produce an overpowering bitter flavour.

The two samples from this oven also contained abundant small fish vertebrae which provided evidence for the production of *garum* (Armitage, see above). Bearing this in mind, it is possible that other industrial-scale activities were taking place at the site, such as the drying and de-husking of cereals for market. The weed ecology (described above) suggests that the cereals were being grown locally. The location of the site on the Exe estuary makes it an ideal place for processing and trading cereals being transported into and out of the region.

Samples from the other three ovens were not productive enough to provide useful evidence of use, and had probably been cleaned out prior to abandonment. In all three cases, however, emmer/spelt grain and traces of oat were present. In oven F1150 two barley grains were also recovered. It is likely that they had been used for a similar purpose, although the presence of several sprouted emmer/spelt grains in oven F546 raises the possibility that malting was also taking place at the site. Unfortunately the evidence was too sparse to confirm this suggestion.

The basal fill of well F1311 produced a wide range of waterlogged plant remains, some of which provided evidence for the importation of foods and flavourings. Waterlogged coriander seeds, dill seeds and a pine nut cone scale were recovered from the sample, though not in numbers large enough to indicate deliberate dumping or the deposition of sewage. It is thought that the mixture of small numbers of food/flavouring plant remains along with larger amounts of remains from plants that grow on nutrient enriched soils (henbane, small nettle, common chickweed), waterlogged straw, chaff, meadow plants, ferns, bracken and gorse is likely to derive from dumped midden material containing domestic and stable waste.

Stone pine is a large tree typically found growing in coastal locations around the Mediterranean. Although the tree can grow in southern parts of the British Isles there is insufficient warmth at this latitude for the seeds to ripen (http://powo.science.kew.org/). The charred nutshell fragments from cess pit F1297 and waterlogged cone scale from well F1311, therefore, probably represent imported items. Stone pine has been shown to be of culinary and ritualistic importance to the Romans. In his review of the evidence for *Pinus pinea* in Roman Britain, Colin Wallace (unpublished manuscript 2002) describes the use of stone pine cones as an ingredient of incense, as well as for medicinal purposes. Cone scales and nutshell fragments have been recovered from a number of places across southern and central Britain, though London (Willcox 1977; 1980; Giorgi 2000; Sidell 2000 etc.) and other important centres such as Verulamium (Wheeler and Wheeler 1936), Rocester (Monckton 2000) and Colchester (Murphy 1984) appear to have been the most productive. Three examples of stone pine bracts and nutshell fragments being recovered from well fills were listed. Frequent examples of stone pine cones being depicted in sculptures in Roman Britain were also cited by Wallace, including a late 4th century stone pine cone sculpture at Holcombe, Devon, located 35km east of Topsham on the coast. Stone pine cone sculptures appear to have been favoured on tombstones across the country, as far north as Hadrian's Wall. Whether the stone pine remains at Topsham represent ritual deposition and burning, the straight forward consumption of nuts as food or use for medicinal purposes is uncertain. The resins in pine cones contain turpentine which can be used as an antiseptic, a remedy for kidney and bladder complaints and to treat skin conditions. They can also be used to waterproof items and as a varnish (http://powo.science.kew.org/).

The range of exotic food items was not extensive compared with assemblages recovered from larger urban centres such as London, where grape pips and fig seeds can sometimes be abundant in latrine deposits (Willcox 1977). In other cases less exotic cultivated fruits such as plums and cherries that have probably been grown in local orchards have been recovered in large numbers from Roman cess pits (e.g. St. Peter's Street, Canterbury, Carruthers and Allison

forthcoming). For these reasons it is unlikely that large amounts of human faecal material were present in the deposit, though the presence of a few strawberry seeds, a sloe stone, elderberry seed and hawthorn stone suggests that traces may have been present. In addition, no bran fragments, mineralised remains or fragmented corn cockle seeds were found. Therefore, little more can be determined about diet at this site.

The meadow plants (probably present amongst hay or dung) were indicative of grassy habitats ranging from dry, sandy, possibly coastal meadows (e.g. bur chervil) to damp, low-lying meadows probably located along river floodplains (e.g. sedges, meadowsweet, yellow rattle). The good state of preservation of the cereal straw and spelt chaff, gorse, bracken/ferns and most of the fruits and seeds suggests that the remains are more likely to represent sweepings from stable floors than dung. Other types of vegetation deposited in the well including fern, bracken and gorse remains were probably harvested for fodder and bedding from heathland and poor, acidic grasslands located on the sandy and peaty soils on either side of Topsham.

Comparisons with other sites in the area

Comparisons with the arable economy of the Cornish Indian Queens sites at Pedna Carne and Penhale Round have already been made (above), demonstrating how sites on similar soils tend to cultivate the same range of crops out of necessity. A close comparison of the well fill can be made with samples from the Roman fortress ditch at Exeter, excavated in 1981 (Straker *et al* 1984). Samples from four of the lower fills of the fortress ditch, dated to the late 1st / early 2nd century AD, produced waterlogged plant assemblages that contained many of the same taxa as the Topsham well. In the upper three samples waterlogged spelt chaff and straw were frequent. Traces of possible food remains were present, including strawberry. Meadow plants such as meadowsweet and yellow rattle were common and plants of nutrient-rich and waste places were dominant, including nettles, docks and chickweed. Some cereal bran was present in the ditch but because food remains were scarce and parasite ova were not found it was thought more likely that animal dung was present than human excreta. However, the results of insect analysis by Mark Robinson showed that although some dung beetles were present, the species represented were more typical of dung in the field, manure heaps or compost heaps rather than remains preserved in droppings themselves. As a whole, the insect assemblage was said to be more rural in character than typical of the 'filth' of urban centres like York.

Both assemblages, the fortress ditch at Exeter and well at Topsham, appear to contain accumulations of midden-type materials with frequent straw and other bedding or fodder remains. At the fortress it is easy to envisage that the ditch was a useful place to dispose of stable waste, and some material may have fallen into the ditch from livestock grazing around the edges of the ditch. In the case of a well, however, the dumping of foul waste might be seen as a deliberate way to make it unusable or possibly a way of backfilling a well that had already become polluted to prevent it from being used in the future. This is quite a common finding (Greig 1988) and in other cases sewage or mixed industrial waste have been used. The earliest examples of the deposition of exotic imported foods in wells come from recent excavations at the Late Iron Age Oppidum at Silchester, Berkshire. Two 1st century AD wells produced olive stones, celery, coriander and dill seeds, alongside remains from plants of waste ground, damp ground, heathland and woodland (Lodwick 2014). Apart from the absence of cereal straw and chaff the parallels with the later Roman well at Topsham are notable. The possibility of some sort of deliberate act of 'closure' for these types of deposits should perhaps be considered, as these imported items would have been particularly highly valued at this time.

7.2 The charcoal *by Dana Challinor*

Introduction and methods

Charcoal was not abundantly preserved at the site; quantities tended to be low possibly reflecting original deposition and/or soil conditions. It is likely that in at least some cases (such as the ovens), it signifies that the feature was cleaned out post use. Of sixteen samples submitted for analysis, from a range of Romano-British deposits, twelve produced identifiable charcoal which was examined. Of particular interest were possible corn-drying ovens, F546, F553 and F1150 and hearths, F447 and F501. The charcoal from the ovens is likely to represent the fuel remains from corn drying activities, although the evidence for *garum* production in F553 (Armitage, above) suggests that more than one activity (and more than one burning event) may be represented. The hearths contained substantive quantities of hammerscale, indicating that the material in these features may have originated as charcoal fuel used in iron smithing.

Standard identification procedures were followed using identification keys (Hather 2000; Schweingruber 1990) and modern reference material. The sampling strategy was defined by the paucity of material and the diversity of the assemblages; up to 50 fragments per feature were identified where necessary/available. The charcoal was fractured and examined at low magnification (up to X45), with representative fragments examined in longitudinal sections at high magnification (up to X400). Observations on maturity and other features were made where appropriate. Classification and nomenclature follow Stace 1997.

Results

The results are presented in Table 36, with the exception of three small samples which did not merit quantification; these are discussed in the text below. More than 300 fragments were examined, from which twelve taxa were positively identified; there was no evidence for exotic or unusual taxa and all were consistent with native species.

FAGACEAE: *Quercus* sp. (oak)
BETULACEAE: *Betula* sp. (birch)
Alnus glutinosa (alder)
Corylus avellana (hazel)
SALICACEAE: *Populus* sp. (poplar) or *Salix* sp. (willow)
ROSACEAE: Maloideae, incl. *Malus (*apple); *Sorbus (*whitebeams etc.); *Crataegus, (*hawthorn)
Prunus sp. *(*blackthorn/cherry/plum)
ERICACEAE: incl. *Calluna vulgaris* (heather) and *Erica* spp. (ling). Some heather seeds/capsules were positively identified in the plant remains (Carruthers, this report).
FABACEAE: *Cytisus*/*Ulex* (broom/gorse)
ACERACEAE: *Acer campestre (*field maple)
OLEACEAE: *Fraxinus excelsior* (ash)
CAPRIFOLICACEAE: *Sambucus nigra* (elder)

The condition of the charcoal was generally fair, with clear anatomical structures, although size was a limiting factor in identification. The majority of the material came from roundwood fragments. With the exception of the Ericaceous and Fabaceae stems, these were incomplete, without pith and bark, but exhibiting strong ring curvature with diameters of 5-8mm and ages ranging from 3 to 12 years. Heartwood fragments were rare, although there was a significant amount in the oak from ditch F108.

Feature	Ditch F108	Oven F546	Oven F553		Hearth F447	Hearth F499	Oven F1150	Well F1311	Cess pit F1405
Context No.	371	518	399	399	448	501	1152	1484	1372
Sample No.	2	12	6	10	5	7	3	17	7
Quercus sp. oak	29 (hs)	13 (rs)	20 (r)	7r	41 (srh)	36 (rs)	21 (rs)	4r	25 (rs)
Betula sp. birch					4 (r)	8 (r)			
Alnus glutinosa Gaertn. alder						1r			4r
Corylus avellana L. hazel			4r	8r	2r	1r	1r	22r	
Alnus/Corylus alder/hazel			2r	3r	1	1r			
Populus/Salix poplar/willow	1r							1	
Ericaceae heather/ling		4r							
Prunus sp. cherry type		1r					4r		1
Maloideae hawthorn group			2r				(1)		
Cytisus/Ulex broom/gorse		7r							
Acer campestre L. field maple								2r	
Fraxinus excelsior L. ash			1r	1	4 (r)		3r	1r	
Sambucus nigra L. elder						1r			
Indeterminate diffuse		5r	1r	1r		2			
Total	30	30	30	20	50	50	30	30	30
r=roundwood; s=sapwood; h=heartwood									

Table 36: Results of the charcoal analysis (showing fragment count)

Discussion

Possible Iron Age ring gully

The sample from context 298, ring gully F307 (Structure 1) was too small to merit full analysis, but contained slivers of oak charcoal and a single fragment of alder or hazel. The material may represent accumulated deposits, rather than deliberate dumps, but nonetheless, represents waste fuel, presumably from domestic type activities. Limited interpretation can be made on this slender evidence, but it shows that oak was clearly available and used for fuel.

Romano-British ovens F546, F553, F1140, F1150, well F1311 and cess pit F1405

The assemblages from the ovens were characterised by substantial quantities of oak (62% of positively identified fragments) and a range of other, supplementary taxa, including hazel, blackthorn/cherry, Maloideae type and ash. Even the poor sample from F1140 (context 1145) contained a minimum of 4 taxa, including oak, alder/hazel, blackthorn/cherry and Maloideae group. The assemblage from F546 was the only sample with evidence for the exploitation of heathland resources; the presence of heather seeds in this sample (Carruthers, this report) suggests that this species is represented in the charcoal. The heather, and the gorse or broom,

were likely to have been used as fuel in the ovens. Gorse, in particular, has a long tradition of use as fuel, across England and especially in the South West region; and was commonly used in bread ovens as it provides a high, fast heat, producing little ash (Rotherham 2007). The absence of the taxa in other samples suggests that heathland resources played a partial or supplementary role in fuelling the ovens. Despite the association with *garum* production in oven F553 and the unusual crop assemblage (Carruthers, above), there was nothing unusual in the charcoal assemblages from this feature to indicate specific function. Generally, the charcoals from the ovens (and other features) probably derived from several activities or firings rather than single-events and are consequently representative of general fuel use.

The maturity evidence from the charcoal was generally consistent in character, indicating the use of roundwood of small diameter or faggots as fuel. This type of firewood provides a high but fast heat which would be suitable for heating or parching purposes. It could also be readily supplied from coppiced woodland, although there is no direct evidence in the charcoal record to support this suggestion. The samples from well F1311 and cess pit F1405 were not dissimilar to the ovens, although F1311 produced more hazel and less oak than other samples. There is some scant evidence for taxa favouring wet ground habitats (alder and willow or poplar); again, these must have been supplementary fuel sources. The charcoal results are comparable to those from Pomeroy Wood on the A30 Exeter to Honiton road scheme, where evidence from corn driers (and other features) indicated the use of managed oak-hazel woodland; which continued to be exploited throughout several Romano-British phases.

Romano-British hearths F447, F449, pit F1427 and fill 371 of ditch F108
All of these assemblages were linked to industrial activities and were dominated by oak (>75%). The assemblage from F1427 (context 1429) comprised a small quantity of comminuted oak fragments. The use of oak for iron-working activities in Romano-Britain is common and comparable charcoal assemblages have been found at other sites; such as at Pomeroy Wood (Gale 1999), Calstock Roman Fort, Cornwall (Challinor 2014) and, further afield, at sites like West Hawk Farm, Kent (Challinor 2008) and Chesters Roman Villa, Gloucestershire (Figueiral 1992). Charcoal fuel was commonly used for smithing as it provides a higher heat output and produces less smoke than wood fuel (Janssen *et al.* 2017, 598). The production of charcoal on a large scale would have been an important part of the Roman economy and, even if it was only taking place on a small, localised scale at Topsham, it would still have required specialised labour and transport from the production site (which were usually located within woodland) to the settlement/smithy. Both the geographical location (on the Exe estuary) and the archaeological evidence at Topsham (see Carruthers for discussion on crops and Armitage for *garum* production) suggest that a series of potentially regional industrial/commercial activities were taking place here in the 3rd-4th centuries AD. It has been suggested that the continued supply of oak-hazel woodland after the Iron Age in the Blackdown Hills area (attested by both charcoal and pollen evidence) was linked to the iron-working industry and consequent need for woodland management (Straker *et al.* 2007, 149).

<u>Conclusion</u>
The charcoal record from Topsham shows that the main fuel used in the Romano-British period was drawn from continuing supplies of oak-hazel woodland, with a range of supplementary sources, such as heathland. The character of the wood (roundwood rather than large trunkwood) suggests the exploitation and management of local woodland, but it also reflects the type of activities represented; bundles of firewood of small diameter (mostly 7-10 years of age) would provide a high but relatively fast heat, suitable for crop processing or *garum* reduction. Iron-working activities would require a higher and longer-lasting heat, which would have been provided through charcoal fuel and the use of larger trunkwood/heartwood. The results are consistent with the picture of fuel use in corn driers and metalworking activities at other Romano-British sites, notably Pomeroy Wood, on the A30 Exeter to Honiton road scheme (Gale 1999).

8. RADIOCARBON DATING

8.1 Given that Romano-British contexts were regarded as securely dated by their finds, only two contexts were selected for dating. A sloe stone of (*Prunus spinosa*) from hearth F447 and a piece of charcoal from Alnus/Corylus (alder/hazel) from lead working pit F1427 were selected for dating; these were chosen as suitable short-lived material and submitted to the Scottish Universities Environmental Research Centre.

8.2 The AMS radiocarbon date results are given in Table 37. Calibration of the results uses the data set published by Reimer *et al.* (2013) and was performed using the program OxCal4 (on-line at: c14.arch.ox.ac.uk).

Material	Context	Lab no.	Result BP	δC13 (‰)	Cal AD
Fruit Stone: Prunus cf. spinosa	Fill (448) of F447	SUERC-72283 (GU43582)	219+/-30	-25.1	1642-1933
Charcoal: Alnus/Corylus	Fill (1429) of F1427	SUERC-72546 (GU43786)	1772+/-33	-26.5	135-345

Table 37: Radiocarbon dating results (calibrated to 95.4% probability)

8.3 The radiocarbon dates have not provided further chronological precision. The post-medieval to modern date from the lower fill (448) of metalworking hearth F447 is spurious and must be discounted. The small fruit stone must have entered the fill though animal or root action. The 2nd to 4th century date from the lead working pit F1427 provides an indication of a broad span within the Romano-British period and includes the expected date for this pit within Romano-British phase 3a, which is dated by the archaeological evidence to the second half of the 3rd century and the early 4th century.

9. DISCUSSION

9.1 Introduction

The excavations have revealed significant evidence for Romano-British period settlement on the site and some further use during the early Roman period, probably during the late 1st century AD, and in addition widely-dated prehistoric use of the site, possibly culminating in an Iron Age farmstead. There is also evidence for agricultural use of the site in the prehistoric, medieval and post-medieval periods. Each phase is discussed by chronological period below.

9.2 Prehistoric

Early prehistory – Mesolithic and Neolithic

The earliest archaeological evidence was derived from the assemblage of worked flint artefacts. These included types typical of the Mesolithic and Neolithic periods. Most of the assemblage was collected from overlying deposits or were residual finds in later features with, in addition, a small number of Late Neolithic Grooved Ware pottery sherds. Two pits, F376 and F1337, contained exclusively finds of worked flint which could be given Early Neolithic and Neolithic dates. Both of these pits appear to have been deliberately dug, rather than of natural origin as tree throws. Some comparisons may be drawn with the 1974 excavation to the west of the site where thirteen pits dated to the Neolithic were uncovered (Jarvis and Maxfield 1975). In general the Wessex Close pottery and worked flint assemblage derives from a range of different, and undefined, activities over a long period of early prehistory.

Later prehistory – Middle Bronze Age

Two ditches contained exclusively pottery of Middle Bronze Age date with ditch F261 containing 69 sherds and ditch F458 179 sherds. These ditches were both aligned northwest to southeast

and in line with one another and may be regarded as extensions of a single ditch defining a field boundary. Boundary ditches of Bronze Age date are now recognised as a regular feature found on sites to the southeast of Exeter and illustrate extensive land division, probably for agricultural purposes, in this period, with actual evidence for the settlements less well known (see discussion in Quinnell and Farnell 2016, 160-2). The large amount of pottery from the ditches at Wessex Close is unusual and it may indicate that settlement activity was located nearby, presumably to the north of the boundary, as there was no evidence for this settlement within the excavated areas.

Later prehistory – Iron Age

Although it was poorly preserved, ring gully F307 (Structure 1) most probably represents the position of a roundhouse. With an extrapolated diameter measuring 11.3m and probable entrance to the southeast it fits well within expectations of roundhouses of Iron Age date although no finds of this date were identified from the site. Roundhouses continue to be used in the Romano-British period (see review in Smith *et al.* 2016, 47-51), and it is not out of the question that the settlement was occupied at the time of the Roman conquest. At St Loye's an Iron Age enclosure containing the remains of a roundhouse is replaced by occupation of Roman military type (Salvatore, Steinmetzer and Quinnell forthcoming). Given its form and stratigraphic position in relation to Romano-British ditch F109 large pit F348 has also been given a tentative Iron Age date, but there are no finds to confirm this. It was located at a distance of over 70m from Structure 1, so no obvious relationship could be established.

9.3 Romano-British – phases 1a and 1b

The features dating to the earliest Romano-British period on the site comprise ditches in the north of the site. The difficulty in untangling the stratigraphic relationship between these and phase 1b ditches has been discussed in full in the results section above. If they were established in the Roman period then they appear to represent a short-lived land division which is replaced, probably within decades, by an apparently more rectilinear pattern of land divisions in phase 1b. It is possible that the phase 1a ditches were originally related to a later Iron Age agricultural landscape, but once again there are a lack of finds to support such an interpretation. Arguably the new pattern is a consequence of Roman military activity rapidly filling in parts of the area between the fort, presumably overlooking the Roman harbour at Topsham, and the legionary fortress at Exeter. Supporting such an argument is the albeit fragmentary evidence of post trench buildings (including Structure 2), although no convincing complete building plan has been discerned and the finds from the site are typical of the early military establishments and include a rare coin of Claudius.

Examples of post trench buildings of this date and construction have been recorded in the near vicinity, during excavations in 1974 for the adjacent M5 flyover (Jarvis and Maxfield 1975) and at the site of the Aldi supermarket to the immediate northwest of the M5 (Andew Pye, pers. comm.). They are typically stand alone, rectangular, structures with approximate dimensions of 10m long and 4m wide. While the regular rectangular arrangement of narrow trenches forming Structure 2 bears some of the characteristics of a post trench structure it is incomplete, contained no discernible post-pipes within the trenches and appeared to be considerably larger (double the width and length) than the examples cited above. Despite this, it remains possible that these features represent a timber structure of the 1st century AD.

Three cremations in pots are dated to this phase and Mark Corney has suggested that some of the early pottery in later contexts may have been derived from other, disturbed cremations, although the lack of burnt bone collected from the same later contexts does not support this suggestion. Locally, 1st century cremations have been found close to the Topsham-Exeter road (Salvatore 1991). During the Roman period the custom was for burial to take place outside of the boundaries of the settlement (*ibid.*, 126). In this regard it is interesting to note that the two in situ cremations are placed just to the south of phase 1 boundary ditch F1017 indicating that any

contemporary settlement activity was to the north of the boundary and within the main area of the site.

9.4 Romano-British – phase 2

This phase represents the major period of use of the site. This use is dominated by a large aisled building (Structure 3), which had three identified phases of modification through its use. The primary structure had a large rectangular footprint, measuring approximately 32m by 18m, with a central range 7m wide with aisle ranges approximately 4m wide to the northeast and southwest. It was constructed as a single phase in the mid-2nd century, using continuous strip footings for the external walls and, unusually, for the internal walls defining the aisles.

The footings were made by packing water worn cobbles into a foundation trench with no bonding material. The depth of the footings varied considerably across the building footprint, and while the overriding factor appeared to be the firmness of the underlying natural material, there was also clearly a trend towards deeper foundations to the wider central range. On the whole footings were substantial, measuring 1m wide and up to 0.7m deep, although some shallower footings had not survived. It seems likely that the central part of the building, at least, was a double height structure, most probably with lower, single storey aisles to the sides.

In plan the primary building was broadly symmetrical. It comprised three long northwest to southeast aligned ranges. A wide central range, flanked to either side by narrow ranges. In the first phase there was no evidence of subdivision of these ranges and if this was required may have been achieved by light wooden partitions. The division between the ranges was marked by continuous foundations although it is assumed that there was access internally between the three ranges. No evidence for door thresholds survived for external or internal access. A small section of grey sandstone facing stone survived on the external side close to the middle of the southwest central range wall, indicating that at least in part the superstructure may have been constructed of stone, with a small amount of similar stone found in demolition deposits. No bonding material was apparent but a thin layer of sand which had been used to level the surface of the cobble footing, providing a flat base for the above ground wall, was recognised.

No formal flooring was present and no plaster was recovered from the demolition layers indicating a building with little interior refinement. The roofing, however, appears to have been quite substantial with roofing materials abundant within the demolition debris. Nearly half a tonne of slate was recovered along with 150kg of ceramic tile fragments. In the northeast range a spread of roof slate was lain out as if a collapsing roof had been left where it fell. Many of the slates still had nails in their fixing holes. In the southwest range the stoking pit for two ovens had been infilled with demolition material including an abundance of slates. Ceramic tile both *tegulae* and *imbrex*, were present in some quantity, but far more broken and dispersed. It seems almost certain that the two narrower outer ranges were slate roofed at the point the building was abandoned. The central range contained hardly any slate by comparison and raises the possibility that it was covered in thatch or wooden shingles, although with the fairly large quantities of ceramic roof tile fragments recovered it is possible that this part of the building was tiled and that possibly more of this material has been taken away from the site for reuse.

Two large ovens, one replacing the other, were positioned in the southeast corner of the building, in the southwest range. Both had been in use during the life of the building, and at some point had been within a separate room when this southwest range was divided into three rooms by two cross walls. The foundations for these wall abutted the primary structure. The central room created by these inserted wall foundations measured approximately 6m by 4m and had a small stone hearth in its northeast corner. The other two rooms were long and narrow measuring 11m by 4m.

The new internal dividing walls were contemporary with an extension to the southwest of the primary building which may have provided a central southwest facing portico with flanking square rooms. The portico was of generous proportions, measuring 6m by 6m, with probable flanking rooms, although these were only provided with full stone foundations, marking them out as square and measuring 4m in each dimension, at a later date; prior to this two walls of each room may have been of timber construction. The whole extension is out of alignment with the primary building by approximately 4 degrees and the reason for this is not apparent and certainly not explained by the topography, and may indicate a desire to make a slight change to the perspective of this elevation when approached from this direction. The flanking rooms are detached from the main building by only a short distance which seems like an odd design with the reasons for not attaching or abutting these rooms to the main building not easily explained, except this too may have aided in presenting a new perspective for this elevation. To the east of the portico extension postholes indicate the possibility of a covered corridor in front of the primary building.

A short distance to the southeast of Structure 3 is a probable bath-house (Structure 4), with a well to its east. Located between the buildings is a cess pit, although no structure related to this was identified. Together the aisled hall, bath-house, well and cess pit provide the necessary elements for civilised Roman life.

The Ovens

Of the two ovens positioned in the southeast corner of the building the better preserved of the two featured a relatively narrow furnace chamber with sandstone walls and a roughly constructed flue to the rear. Partially vitrified clay lining was adhered to the furnace chamber walls and the chamber itself was filled with fine ashy material, then covered by demolition rubble. A large stone lintel had collapsed into the stoking pit. The finds from the oven showed it had been used for processing spelt wheat and oats crops and, more unusually, used for the preparation of a fish sauce known as *garum*. Garum was a delicacy in the Roman Empire, and was originally imported from the Mediterranean, but later in the 2nd century appears to have been replaced by local production using locally available species of fish.

In the demolition rubble backfilling for the oven stoking pit, was the unusual Roman gridiron. It has a number of parallels, most notably from Newstead Roman Fort. It would have been used as a cooking aid to put over hot coals to support a pan or to cook meat.

Local comparisons

Buildings with stone foundations located in the hinterland of Roman Exeter are very unusual indeed. However, a building of striking similarity in construction was excavated in the 1930s at what is now Topsham Rugby Club, 430m east of the site (Morris, Montague and Goodchild 1938). It too was constructed of riverworn cobbles at foundation level and appeared to have a slate covered roof and was dated by finds to the 4th century AD. It also featured two stone ovens of very similar design to those in Structure 3. Alongside the ovens numerous fragments of quern stone were recovered and, on this basis, it has been interpreted as a bakehouse. It was considerably smaller than Structure 3, measuring approximately 17m by 8m, with the two ovens taking up approximately a third of the space inside, giving the clear impression of a distinct function for the building.

Clearly the size of Structure 3 places it in a different class of building to the bakehouse. The other Roman buildings with stone foundations outside of Exeter in Devon have all, at least initially, been interpreted as villas. These are Downes at Crediton (Griffith 1988), Holcombe, near Lyme Regis (Pollard 1974) and Honeyditches at Seaton (Miles 1977). On current evidence all of these are dated no earlier than the late 2nd century and more firmly within the 3rd (see review in Smith *et al.* 2016).

Holcombe is the only fully excavated example and the first stone building on the site was an aisled building with stone outer walls, measuring approximately 15m by 6m. This underwent significant extension during the 3rd century culminating in the mid-4th century with an attached ornate bath-house. Although only investigated by a test pit the plan of the Downes building is well established by aerial photography and measures 40m by 18m with three principal rooms, a front corridor and small wings. Interpretation of the buildings at Honeyditches is more difficult as several parts of buildings have been revealed in piecemeal excavation and observations, with no full plan of the villa achieved, although Silvester (1981, 80) in considering the evidence for the stone built structures suggests that it was 'a fairly simple villa-house, at least 78m long and of unknown width' and Holbrook (1987, fig. 4) prefers two separate buildings. A large portion of a detached bath-house has been excavated (Miles 1977). Despite Honeyditches revealing several of the attributes expected of a Roman villa - hypocaust, tesserae, painted plaster and bathhouse - doubts about this attribution have been expressed and Malcolm Todd (1987, 221) opines that an official complex connected to a nearby harbour at Axmouth better suits an explanation for the site and Neil Holbrook (1987) prefers to interpret the remains at the site as the location for a *mansio*.

Structure 3 has few of the attributes expected of a villa (or, indeed, a *mansio* which would normally be a courtyard structure); there is no evidence for painted plaster walls, mosaic or tiled floors, hypocausts or glazed windows. The overall form of building is broadly consistent with that of an aisled hall or basilica style of building (Smith 2016). This type of building would typically feature a double row of pillars forming the central double height nave, with narrow single storey aisles to either side. They would have been largely open inside but with timber partitions inserted subsequently. In a study of aisled halls in the East Midlands Taylor (2013, 178) found that activities within the building may have been carefully structured with cooking and eating central to one side of the hall and the other (usually eastern) end used for agricultural processing activities such as corn-drying or malting or craft activities such as iron smithing; the central area appears to be kept clear, perhaps for storage, and remains unembellished while other parts of the building may become 'developed' through division and furnished with typical villa accoutrements over time. It is hard to know how the internal space was arranged in Structure 3 except for in the southeast corner where the ovens are located. Scatters of amphora sherds were localised in the northern range and perhaps reflect storage in this area.

Jeremy Taylor (2013, 178) finds that the aisled hall while being distinct from indigenous Iron Age architecture in Britain, is also distinct from classically-influenced architecture such as villas and, unlike these, had the benefit of being 'an architectural form that could be adapted to a wide range of purposes' with the result that 'many are likely to have been flexible multi-purpose buildings'. The known aisled halls in Britain, although sharing the same basic plan, vary widely in size with the smallest covering an area of 50-60m^2 and the largest covering an area of up to 800m^2 with the largest ones averaging 380m^2, tending to form parts of villa complexes (Smith 2016, 67-9). Structure 3, with an approximate area of 500m^2, is clearly within the larger range for this building type in Roman Britain, but it is apparent that it was not part of a larger complex of buildings. When not part of a villa complex (typically outside of the south of England), a recent study has established that they are found in a variety of locations, namely, farmsteads (51 sites), roadside settlements (17 sites), villages (5 sites), and military *vici* (3 sites) (Smith 2016, 69). Distance from known military establishments and lack of neighbouring buildings means that a village or vici location can be ruled out, but worthy of further consideration is that Structure 3 may be the site of a farmstead or on a roadside.

Farmstead

At first sight the possibility that Structure 3 was at the centre of a farmstead has much to recommend it. Activities in the building includes the processing of wheat and oats and the building sits within a large squared ditched enclosure measuring 100m by 50m, an area of 0.5ha, defined in the northeast by the trackside ditch. Although few have been subject to extensive

excavation, Romano-British farmsteads in Devon are typically defined by rectilinear enclosures with a single entrance and describing an area more typical for stock control rather than defence (Brindle 2016). At Wessex Close, this enclosure clearly does not stand alone and appears to be a plot amongst other plots, certainly continuing to the west, with the phase 2 ditches apparently showing roadside 'ladder' type settlement rather than an individual enclosure. Also of note, and arguing against a farmstead, is that the entrance to the 'enclosure' is on the southwest side facing the estuary rather than any farmland that may have existed. Structure 3 in itself also argues against a farmstead as this is a large building in a national context and 10 times the size of the farmstead building excavated to the northwest in 1974 (Jarvis and Maxfield 1975).

Roadside

It has for long been noted that the road to the north of the Exe between Topsham and Exeter is close to the line of the Roman road between these places; Radford (1937) believed that up until the medieval period that Topsham (with Exminster on the opposite bank) marked the lowest fording point of the Exe meaning that sea-going vessels were not able to access Exeter. Although there is no general agreement in this regard (see discussion in Sage and Allan 2004, 19-20), if this is the case, then the road takes on greater significance as the link between Roman Exeter and its probable harbour at Topsham. The *via principalis* of the fortress continued the line of the road indicating that the importance of Topsham was already established when the fortress was laid out (Henderson 2001, 53). The discovery of a small fort at Topsham (Sage and Allan 2004), a military installation at St Loye's (Salvatore *et al*. forthcoming), and military period post trench structures at the Exeter Crematorium (Govier and Rainbird 2016) and at the Aldi Store site (Andrew Pye, pers. comm.) has further confirmed the importance of Topsham and the Exeter road. A review of the Roman material recovered at Topsham shows that the finds largely come from the area to the west of the fort and that they were 'unusually rich in imported wares' which is 'a typical feature of ports' (Sage and Allan 2004, 20). This may indicate that the Roman period wharf was located in the area west of the fort and in close proximity to the current site.

With parallel ditches the trackway identified in the north of the site is 8-9m wide and would appear to intersect with the current Exeter road just beyond the site to the northwest and crosses the site heading southeast and tantalisingly this can be interpreted as veering towards the site of the military fort at Topsham. The southwest side was a typical roadside drainage ditch, V-shaped, about 0.8m deep. The northeast side (F107) however had been originally excavated to an excessive depth of over 2.2m, even though it was a similar width at the top. While the road does not appear to be military in origin, it clearly follows an alignment which is established by the two earlier phases of ditches and although somewhat tenuous, may follow a much older route from the top of the estuary towards the Exeter area suggested by the Bronze Age ditch also following the same line. There was limited evidence for a relatively thin and insubstantial gravel/metalled surface making the identification of the trackway as the main road between Topsham and Exeter uncertain. However, it may be noted that Todd (1987, 217) warns with particular reference to the South West that we should be aware that 'roads in the Roman provinces were not always well metalled or paved…. A cleared track may suffice the needs of Imperial officials, traders and any other travellers who penetrated to these districts'. However, a series of gravel surfaces with a combined depth of 0.8m has been observed on the line of the road at the position of Exeter's former south gate (Henderson 2001). If this is the line of the main Exeter-Topsham road then it may be the case that significant truncation has occurred resulting in the destruction of an agger and metalled road surface.

Excavations along the length of northeast trackside ditch (F107) consistently suggested a series of events beginning with the excavation of a deep and relatively narrow trench with the up-cast material stored nearby. It is tempting to see this as a defensive work related to the 1st century and while this possibility cannot be entirely discounted, the overall form of the ditch has little affinity to Roman military defences recorded nearby, for example at St Loye's or the fortress at Exeter and it is just too narrow at the top and easily crossed. In addition, the small assemblage

of pottery recovered dates the rapid backfilling of the deeper part of the ditch to the mid-2nd century AD. Given the clean gravel fill and lack of secondary consolidation of the feature, it seems unlikely that it had stood open since the Roman military period (up to 80 or 90 years) before being backfilled. Much more likely is that the excavation of the feature occurred in the 2nd century, with backfilling following shortly after.

An explanation which appears to better serve the available evidence is to see the excavation of the northeast roadside ditch in the context of a planned and large-scale development comprising the establishment of the track, property boundaries to the south and crucially the construction of Structure 3. As part of a planned scheme the excavation of this deep ditch can be seen as quarrying for the retrieval of the large naturally occurring cobbles used to pack the foundation trenches of Structure 3. Once the up-cast spoil had been sorted for construction materials the waste was pushed back in. Finer material may have been used to lay a thin metalled surface to serve as a track, while larger cobbles were used in the building. The upper 0.8-1m of the ditch remained as an extant feature and was maintained and re-cut throughout the later 2nd and early 3rd centuries.

It appears then that Structure 3 and the enclosure within which it sits takes their orientation from the position adjacent to the road, but whether this road is the major road or merely a minor branch of it is a moot point. The fact remains that the enclosure opens to the southwest, with no evidence for direct access to the road at this phase, indicating that the site is orientated towards the estuary, rather than having a direct interest in the prominent position it should hold against a main road. The orientation of the entrance, and the main façade of the building as identified by the addition of portico type structure, is much more likely then to be towards the port or a road that goes directly to the port, with the fort at Topsham having long gone out of use by the mid-2nd century. In this scenario the trackway to the north of the site is little more than a side road branching from the main road at some point probably only a short distance to the west.

Structure 3 ought to be regarded as a multi-purpose building incorporating aspects of a residence, warehouse and industry. Metalworking, crop processing and garum production all took place here. The domestic use did not reach beyond a basic standard, even in such a large building, but the probable external bath-house in close proximity shows that the domestic accommodation was provided with an essential element of Roman hygiene. The addition of a probable portico attached as an extension to its southwest side indicates that a building of more grandeur was being presented. Jeremy Taylor (2013, 179) has noted other cases where this has occurred ‘such as at Mansfield Woodhouse (Notts) and Drayton (Leics.), [where] the external façade of the hall is altered to create the appearance of a portico or pavilions. In doing so, at least superficially, these buildings looked more like the winged-corridor houses that formed the core of many third- and fourth-century villas in Britain, but they contained a very different interior.’ So, in these cases the multi-purpose activities of the interior are maintained while presenting the external appearance of an elite villa residence.

9.5 Romano-British – phase 3

The evidence shows that activities on the site become more industrial towards the end of the life of the building. It is probably the case that the building no longer had a formal domestic function. Finds, in particular a coin of Claudius II, recovered from the demolition layers, indicates that Structure 3 was abandoned in the late third or fourth century. Eventually, prior to the end of the Romano-British period, structures 3 and 4 collapsed and the only clear feature on the site is a square fenced enclosure of unknown purpose in the southeast part of the site. Dated finds indicate that activity on the site has largely ceased by the end of the first quarter of the 4th century.

9.6 Medieval and post-medieval

From the 4th century onwards through the medieval period until the post-medieval period the site returns to agricultural use. In the late 17th century a sugar refinery is recorded to the south of the site and accounts for the collection of sugar refining vessels recovered from the site. The 'sugar house' and its grounds were sold to be converted to a country house, The Retreat, which was built before 1773 at which date the area belonging to it were reported as 'good gardens and 30 acres of pasture adjoining the house' (Fox 1991, 134). The pasture, almost certainly incorporates the current site and later becomes parkland before the estate of The Retreat was sub-divided and sold off in lots, much for housing developments, during the 20th century.

10. ARCHIVE AND OASIS ENTRY

10.1 The finds, paper and digital archive are stored at the offices of AC archaeology at 4 Halthaies Workshops, Bradninch, near Exeter, Devon, EX5 4LQ under the unique project codes of **ACD1123** and **ACD1360** and under the temporary reference number issued to Wessex Archaeology for the site by the Royal Albert Memorial Museum, Exeter of **RAMM: 14/22**. The archive currently held by Wessex Archaeology and Oakford Archaeology (RAMM: 14/24) for the two trial trenching phases will be obtained and amalgamated into the one to be generated for this excavation. On acceptance of this report the finds archive will be reviewed by the Royal Albert Memorial Museum and, if they are considered worthy of retention, they will be transferred to the museum under an allocated accession number. Material not retained by RAMM will be discarded at the same time.

10.2 An online OASIS entry has been completed using the unique number **287178**, which includes a digital version of this report.

11. REFERENCES

ACBMG, 2002, *Ceramic Building Material: Minimum Standards for Recovery, Curation, Analysis and Publication*. Unpublished Archaeological Ceramic Building Materials Group report.

Allan, J.P., 1984, *Medieval and Post-Medieval Finds from Exeter*. Exeter Archaeological Reports no. **3**.

Ashworth, H.W.W. and Palmer, L.S., 1957-58, 'Romano-British metallurgical workings at Green Ore Somerset', *Annual Report of the Wells Natural History and Archaeology Society*, **69/70**, 10-15.

Bateman, N. and Locker, A., 1982, 'The sauce of the Thames', *The London Archaeologist* **4,** 204–207.

Bayley, J., 1989a, *Some evidence for non-ferrous metalworking from Roman Exeter, Devon*. English Heritage Ancient Monuments Laboratory Report **54/89**.

Bayley, J., 1989b, *Some evidence for non-ferrous metalworking from Frien Hay, Devon*. English Heritage Ancient Monuments Laboratory Report **55/89**.

Bayley, J. and Eckstein, K., 1998, *Metalworking debris from Pentreheyling Fort, Brompton, Shropshire*. English Heritage Ancient Monuments Laboratory Report **13/98**.

Betts, I.M., 2007, 'Ceramic Building Material', in P. Davenport, C. Poole, and D. Jordan, *Excavations at the New Royal Baths (the Spa), and Bellott's Hospital 1998-1999*. Oxford Archaeology Monograph **3**.

Bidwell, P., 2016, 'Fifth century pottery in Devon and north east Cornwall', *Internet Archaeology* **41**. https://doi.org/10.11141/ia.41.1

Bidwell, P., forthcoming, 'The Roman pottery', in J.P. Salvatore, M. Steinmetzer and H. Quinnell, The Iron Age Enclosures, Roman Military Works Depot and Supply Base, Roman Civil Occupation and Mid-Late Roman Cemetery at the Former St. Loye's College, Topsham Road, Exeter. *Devon Archaeological Society Occasional Volume*.

BGS, 2017, *British Geological Survey Geology of Britain On-line Viewer* (www.bgs.ac.uk).
Blockley, K., Blockley, M., Blockley, P., Frere, S.S. and Stow, S., 1995, *Excavations in the Marlowe Car Park and Surrounding Areas. Part II: The Finds*. Canterbury Arch Trust. The Archaeology of Canterbury Vol. **V**.
Brindle, T., 2016, 'The South-West' in A. Smith, M. Allen, T. Brindle, and M. Fulford, *The Rural Settlement of Roman Britain, Vol. 1 (Britannia Monograph Series* No. **29**), 331-58.
Brodribb, G., 1987, *Roman Brick and Tile*. Gloucester: Alan Sutton.
Buikstra, J.E. and Ubelaker, D.H., 1994, *Standards for Data Collection from Human Skeletal Remains*. Arkansas Archaeological Survey Research Series No. **44**.
Carruthers, W., 2015, 'Charred plant remains', in J.A. Nowakowski and C. Johns, *Bypassing Indian Queens. Archaeological Excavations 1992-1994. Investigating prehistoric and Romano-British settlement and landscapes in Cornwall*. E-publication, The Highways Agency and Cornwall Archaeological Unit, Cornwall Council, 237-252, 271-3, 365-366.
Carruthers, W.J. and Allison, E., forthcoming, 'The plant and insect remains', in Excavations at 49 St Peter's Street, Canterbury (49 SPSC.EX15). Canterbury Arch. Trust.
Carruthers, W.J. and Hunter, K.H., forthcoming, *A Review of Plant Macrofossils from the Midland Counties*. Historic England.
Challinor, D., 2008, 'Wood Charcoal', in P. Booth, A-M. Bingham and S. Lawrence, *The Roman Roadside Settlement at Westhawk Farm, Ashford, Kent, Excavations 1998-9*, Oxford, Oxford Archaeology Monograph **2**, 343-349.
Challinor, D., 2014, 'Wood Charcoal', in C. Smart, *A Roman Military Complex and Medieval Settlement on Church Hill, Calstock, Cornwall: Survey and Excavation 2007-2010,* BAR British Series **603**, 101-104.
Cleal, R. and MacSween, A., 1999, *Grooved Ware in Britain and Ireland*. Oxbow: Oxford.
Cool, H., 2006, *Eating and Drinking in Roman Britain*. Cambridge University Press, Cambridge.
Cool, H.E.M., 2015, 'The glass', in S. Hughes 'A Prehistoric and Romano-British settlement at Aller Cross, Kingskerswell.' *Proceedings of the Devon Archaeological Society* **73**, 124-127.
Crone, A., 1992, 'Wood', in S. Woodiwiss (ed.) *Iron Age and Roman Salt Production and the Medieval town of Droitwich. Excavations at the Old Bowling Green and Friar Street*, Council for British Archaeology Research Report **81**, 106-113. London.
Crummy, N., 1983, *The Roman Small Finds from Excavation in Colchester 1971-9*. Colchester Archaeological Trust, Colchester Archaeological Report, 2.
Curle, J., 1911, *A Roman Frontier Post Frontier Post and its People: The Fort of Newstead in the Parish of Melrose*. Glasgow: MacLehose.
Dunster, J. and Dungworth, D., 2012, *St Algar's Farm, Frome, Somerset: the analysis of lead-working waste*. English Heritage Research Department Report Series, **15-2012**.
Egan. G., and Pritchard, F., 2002, *Dress Accessories*. Second edition. Boydell.
Ellenburg, H., 1988, *Vegetation Ecology of Central Europe*. 4th Edition. Cambridge University Press: Cambridge.
English Heritage, 2010, *Waterlogged Wood. Guidelines on the recording, sampling, conservation and curation of waterlogged wood*. English Heritage: Swindon.
Farnell, A. and Payne, N., 2016, *Archaeological Recording on Land North of Wessex Close, Topsham, Exeter, Devon: Interim results of an archaeological excavation*. AC archaeology unpublished report no. **ACD1123/2/1**.
Farnell, A., Payne, N. and Valentin, J., 2016, *Land Immediately to the Northwest of Retreat Drive, Topsham, Exeter, Devon: Interim results of an archaeological excavation*. AC archaeology unpublished report no. **ACD1360/2/0**.
Figueiral, I., 1992. 'The charcoals', in M.G. Fulford and J.R.L. Allen, 'Iron-Making at the Chesters Villa, Woolaston, Gloucestershire: Survey and Excavation 1987-91', *Britannia* **23**, 188-191.
Fitzpatrick, A.P., Butterworth, C.A, and Grove, J., 1999, *Prehistoric and Roman Sites in East Devon: the A30 Honiton to Exeter Improvement DBFO Scheme, 1996*. Wessex Archaeology Report, **16**.

Fox, A., 1991, 'The Retreat, Topsham', *Proceedings of the Devon Archaeological Society* **49**, 131–41.
Fox, A., 1996, 'Tin ingots from Bigbury Bay, South Devon', *Mining History* **13**, 150-151.
Fulford, M.G., 1975, *New Forest Roman Pottery*. BAR British Series **17**.
Gale, R., 1987, *The Identification of Wood from Artefacts Excavated by the Department of Urban Archaeology at London Sites: 24 London sites.* Ancient monuments Laboratory report, new Series, **60/87**. English Heritage: London.
Gale, R., 1999. 'Charcoal', in A.P. Fitzpatrick, C.A. Butterworth and J. Grove (eds) *Prehistoric and Roman Sites in East Devon: The A30 Honiton to Exeter Improvement DBFO, 1996-9. Volume 2: Romano-British Sites*, 372-382, Salisbury, Trust for Wessex Archaeology.
Giorgi, J., 2000, 'The plant remains – a summary', in A. Mackinder, *A Romano-British cemetery on Watling Street; Excavations at 165 Great Dover Street, Southwark, London*. MoLAS Archaeology Studies **4**, 65-66.
Girbal, B., 2011, *Roman and medieval litharge cakes: scientific examination*. English Heritage Research Department Report Series, **51-2011**.
Goodburn, D., 1992, 'Woods and woodland: carpenters and carpentry', in G. Milne *Timber Building Techniques in London c. 900-1400*. London and Middlesex Special Paper **15**, 106-130. London.
Goodburn, D., 2001, 'Wooden remains as an archaeological resource: some insights from the London Wetlands', *Archaeology in the Severn Estuary **11***, 187-196.
Govier, E. and Rainbird, P., 2016, *Land at Exeter and Devon Crematorium, Topsham Road, Exeter, Devon: Results of an archaeological excavation and proposals for further work*. Unpublished AC archaeology report no. **ACD1348/2/1**.
Grainger, S., 2013, 'Roman fish sauce: fish bone residues and the practicalities of supply', *Archaeofauna* **22**, 13–28.
Greig, J., 1988, 'The interpretation of some Roman well fills from the midlands of England', in H. Küster, *Der prähistorische Mensch und seine Umwelt*. Stuttgart.
Griffith, F.M., 1988, 'A Romano-British villa near Crediton', *Proceedings of the Devon Archaeological Society* **46**, 137–42.
Hamilton-Dyer, S., 2008, 'Environmental fish bones from selected contexts', Supplementary material to M. Trevarthen (ed.) *Suburban Life in Roman Durnovaria* http://www.wessexarch.co.uk/files/projects/dorchester_county_hospital/06_Fish_bones.pdf
Hather, J.G., 2000, *The Identification of Northern European Woods; A Guide for Archaeologists and Conservators*. Archetype Publications: London.
Henderson. C.G., 2001, 'The development of the south gate of Exeter and its role in the city's defences', *Proceedings of the Devon Archaeological Society* **59**, 45–123.
Hill, M.O., Mountford, J.O., Roy, D.B. and Bunce, R.G.H., 1999, *Ellenberg's Indicator Values for British Plants.* ECOFACT Volume **2**: Technical Annex. HMSO.
Holbrook, N., 1987, 'Excavations at Honeyditches and the nature of the Roman occupation at Seaton', *Proceedings of the Devon Archaeological Society* **45**, 59-74.
Holbrook, N. and Bidwell, P., 1991, *Roman Finds from Exeter*. Exeter: Exeter Archaeological Reports Volume **4**.
Janssen, E., Poblome, J., Claeys, J., Kint, V., Degryse, P., Marinova, E. and Muys, B., 2017, 'Fuel for debating ancient economies. Calculating wood consumption at urban scale in Roman Imperial times', *Journal of Archaeological Science: Reports* **11**, 592–599.
Jarvis, K. and Maxfield, V., 1975, 'The excavation of a First-Century Roman Farmstead and a Late Neolithic Settlement, Topsham, Devon', *Proceedings of the Devon Archaeological Society* **33**, 209-266.
Keepax, C.A. and Watson, J., 1980, Wood identification: Carlisle. *Ancient Monuments Laboratory Report,* **Old Series**, **2402**.
Laidlaw. M. and Mepham, L., 1999, 'Pottery', in Fitzpatrick *et al.* 1999*,* 43-51.
Lernau, O., Cotton, H. and Goren, Y., 1996, 'Salted fish and fish sauces from Masada. A preliminary report', *Archaeofauna* **5**, 35–41.

Loader, E., 1999, 'Worked stone', in Fitzpatrick *et al.* 1999, 281-282.
Locker, A., 2007, '*In piscibus diversis*; the bone evidence for fish consumption in Roman Britain', *Britannia* **28**, 141–180.
Lodwick, L., 2014, 'Condiments before Claudius: new plant foods at the Late Iron Age oppidum at Silchester, UK', *Vegetation History and Archaeobotany* **23**, 543–549.
McCobb, L.M.E., Briggs, D.E.G., Carruthers, W.J. and Evershed, R.P., 2003, 'Phosphatisation of seeds and roots in a Late Bronze Age deposit at Potterne, Wiltshire, UK', *Journal of Archaeological Science* **30**, 1269-1281.
McKinley, J.I., 1993, 'Bone fragment size and weights of bone from modern British cremations and its implications for the interpretation of archaeological cremations', *International Journal of Osteoarchaeol*ogy **3**, 283-287.
Manning, P., Steinmetzer, M., and Pearce, P., 2010, *Archaeological Monitoring and Recording on the Topsham to Exminster Replacement Water Main, Devon*. Unpublished Exeter Archaeology report no. **10.71**.
Manning, W.H., 1985, *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum*. London: British Museum.
Manning, W.H., 1993, *Report on the Excavations at Usk 1965-1976. The Roman Pottery*. University of Wales Press: Cardiff.
Margary, I.D., 1955, *Roman Roads in Britain, Vol. I*. Phoenix: London
Martinón-Torres, M., Thomas, N., Rehren, T. and Mongiatti, A., 2009, 'Identifying materials, recipes and choices: some suggestions for the study of archaeological cupels', in A. Giumlia-Mair, P. Craddock, A. Hauptmann, J. Bayley, M. Cavallini, G. Garagnani, B. Gilmour, S. La Niece, W. Nicodemi and T. Rehren (eds) *Archaeometallurgy in Europe 2007: Selected Papers from 2nd International Conference, Aquileia, Italy, 17–21 June*. Milano: Associazone Italiana di Metallurgia, 435–445.
Metcalfe, C.R. and Richardson, F., 1977, 'Identification of wood fragments: uncharred material found in the well', in P.A. Rahtz and E. Greenfield (eds) *Excavations at Chew Valley Lake, Somerset*, Department of the Environment Archaeological Reports, **8**, 368-9. HMSO: London.
Miles, H., 1977, 'The Honeyditches Roman Villa, Seaton, Devon'. *Britannia* **8**, 107-48.
Millar, L., Schofield, J. and Rhodes, M., 1986, *The Roman Quay at St Magnus House London. Excavations at New Fresh Wharf, Lower Thames Street, London, 1974-78.* London and Middlesex Archaeological Society Special Paper **8**.
Monckton, A., 2000, 'Charred plant remains', in I.M. Ferris, L. Bevan and R. Cuttler, The *Excavation of a Romano-British Shrine at Orton's Pasture, Rocester, Staffordshire*. British Archaeological Reports **314**.
Morris, P., Montague, L.A.D. and Goodchild, R., 1938, 'A Romano-British building at Topsham', *Proceedings of the Devon Archaeological Exploration Society* **3(2)**, 67-82.
Murphy, P., 1984, 'Environmental Archaeology in East Anglia', in H. Keeley, (ed.) *Environmental Archaeology: A Regional Review*. DAMHB Occasional Paper **6**, 13-42.
Murphy, P., 2001, *Review of wood and macroscopic wood charcoal from archaeological sites in the west and east midlands regions and the east of England.* CFA Report **23/2001**. English Heritage: Portsmouth.
Neal, D., Wardle, A., and Hunn, J., 1990, *Excavation of the Iron Age, Roman and Medieval Settlement at Gorhambury, St Albans*. London: English Heritage.
Neer, W. van, Ervynck, A. and Monsieur, P., 2010, 'Fish bones and amphorae: evidence for the production and consumption of salted fish products outside the Mediterranean region', *Journal of Roman Archaeology* **23**, 161–195.
Nicholson, R.A., 1993, 'A morphological investigation of burnt animal bone and an evaluation of its utility in archaeology', *Journal of Archaeological Science* **20**, 411-428.
Nicholson, R., 2012, 'Excavations at Stanford Wharf Nature Reserve: Fish remains', https://library.thehumanjourney.net/909/104/16.Fish%20remains.pdf
Oakford Archaeology, 2014, *Archaeological assessment and evaluation at Wessex Close, Topsham, Devon.* Unpublished report for client, ref. 14-10.

Passmore, A., 2013, *Discovery Quarter, Mount Dinham, Exeter: Results of Archaeological Excavation and Recording*. Unpublished AC archaeology Doc. No. **ACD/356/1/2**.
Passmore, A., forthcoming, 'Archaeological investigations at Mount Dinham, Exeter, 2007-2009', *Proceedings of the Devon Archaeological Society*
Peacock, D.P.S., 1969, 'A contribution to the study of Glastonbury Ware from South-Western Britain', *Antiquaries Journal* **49**, 41-61.
Pearce, R.J.H., 1999, *Case studies in a contextual archaeology of burial practice in Roman Britain*. Durham theses, Durham University. Available at Durham E-Theses Online: http://etheses.dur.ac.uk/1442/
Perring, D, 2002, *The Roman House in Britain*. Routledge: London.
Pollard, S., 1974, 'A Late Iron Age settlement and a Romano-British villa at Holcombe, Devon', *Proceedings of the Devon Archaeological Society* **32**, 59-162.
Price, J., 2002, 'Two Vessels from Llandovery, Carmarthenshire, and Piercebridge, County Durham: A Note on Flavian and Later Polychrome Mosaic Glass in Britain' in Miranda Aldhouse-Green and Peter Webster (eds) *Artefacts and Archaeology: Aspects of the Celtic and Roman World*, 112-131. University of Wales Press: Cardiff.
Price, J. and Cottam, S., 1998, *Romano-British Glass Vessels*: *a Handbook*. CBA Practical Handbook in Archaeology **14** (York).
Quinnell, H., 2010, 'Prehistoric and Roman material from Lundy' *Proceedings of the Devon Archaeological Society* **68**, 44-66.
Quinnell, H., 2012, 'Trevisker Pottery: Some Recent Studies', in W.J. Britnell and R.J. Silvester, *Reflections on the Past. Essays in Honour of Frances Lynch,* 146-71. Cambrian Archaeological Association: Welshpool.
Quinnell, H., Dymond, T., Keene, B. and Newberry, J., 2015, 'Lithic scatters, archaeology and road construction in the Tiverton Area', *Proceedings of the Devon Archaeological Society* **73**, 1-66.
Quinnell, H. and Farnell, A., 2016, 'Prehistoric sites in the Digby area of Exeter', *Proceedings of the Devon Archaeological Society* **74**, 65-169.
Radford, C.A.R., 1937, 'The Roman site at Topsham', *Proceedings of the Devon Archaeological Exploration Society* **3(1)**, 4-23.
Rahtz, P.A. and Greenfield, E., 1977, *Excavations at Chew Valley Lake Somerset*. HMSO: London.
Raymond, F., 2012, 'Bronze Age pottery', in D. Gilbert 'A Bronze Age enclosure with extramural structures and field system on land to the north of Old Rydon Lane, Exeter', *Proceedings of the Devon Archaeological Society* **70**, 76-80.
Rees, S., 2011, 'Agriculture', in L. Allason-Jones (ed.), *Artefacts in Roman Britain. Their Purpose and Use.* Cambridge University Press: Cambridge.
Reimer, P. J., Bard, E., Bayliss, A., Beck, J. W., Blackwell, P. G., Bronk Ramsey, C., Grootes, P. M., Guilderson, T. P., Haflidason, H., Hajdas, I., HattŽ, C., Heaton, T. J., Hoffmann, D. L., Hogg, A. G., Hughen, K. A., Kaiser, K. F., Kromer, B., Manning, S. W., Niu, M., Reimer, R. W., Richards, D. A., Scott, E. M., Southon, J. R., Staff, R. A., Turney, C. S. M., & van der Plicht, J. 2013. IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0-50,000 Years cal BP. *Radiocarbon*, **55(4)**.
Rigby, V. 1991, 'Gaulish Imports and Related Wares', in N. Holbrook and P. Bidwell, *Roman Finds from Exeter*, 76-81
Rotherham, I.D., 2007, 'Wild Gorse: history, conservation, and management', *FWAG Scotland* **7**, 17-21.
Salvatore, J., 2001, 'Three Roman Military Cremation Burials from Holloway Street, Exeter', *Proceedings of the Devon Archaeological Society* **59**, 125-140.
Salvatore, J.P., Steinmetzer, M. and Quinnell, H., forthcoming, The Iron Age Enclosures, Roman Military Works Depot and Supply Base, Roman Civil Occupation and Mid-Late Roman Cemetery at the Former St. Loye's College, Topsham Road, Exeter. *Devon Archaeological Society Occasional Volume*.

Schweingruber, F.H., 1990, *Microscopic Wood Anatomy*, 3rd Edition, Swiss Federal Institute for Forest, Snow and Landscape Research

Sidell, J., (ed.) 2000, 'Environmental Archaeology in London 1995-98, part 2', *London Arch* **9.4**, 95-101.

Silvester, R.J., 1981, 'Excavations at Honeyditches Roman Villa, Seaton, in 1978', *Proceedings of the Devon Archaeological Society* **39**, 37-87.

Smith, I.F., 1975, 'Neolithic pottery', in Jarvis and Maxfield, 249-251.

Southward, A.J., Boalch, G.T. and Maddock, L., 1988, 'Fluctuations in the herring and pilchard fisheries of Devon and Cornwall linked to change in climate since the 16th century', *Journal of the Marine Biological Association of the United Kingdom* **68**, 423 – 445.

Smith, A., 2016, 'Buildings in the countryside' in A. Smith, M. Allen, T. Brindle, and M. Fulford, *The Rural Settlement of Roman Britain, Vol. 1 (Britannia Monograph Series* No. **29**), 44-74.

Smith, A., Allen, M., Brindle, T. and Fulford, M., 2016, *The Rural Settlement of Roman Britain, Vol. 1 (Britannia Monograph Series* No. **29**).

Smith, W., 2002, *A Review of Archaeological Wood Analyses in Southern England*. CFA Report **75/2002**. English Heritage: Portsmouth.

Stace, C, 1997, *New Flora of the British Isles*, Second Edition. Cambridge University Press: Cambridge.

Stace, C, 2010, *New Flora of the British Isles*, Third Edition. Cambridge University Press: Cambridge.

Steinmetzer, M, 2014, *Archaeological assessment and evaluation at Wessex Close, Topsham, Devon*. Unpublished Oakford Archaeology Report no. **14-10**.

Straker, V., 1985, 'Wood identifications', in G. Milne (ed.) *The Port of Roman London*, 107. Batsford: London.

Straker, V., Robinson, M. and Robinson, E., 1984, 'Biological investigations of waterlogged deposits in the Roman Fortress ditch at Exeter', *Proceedings of the Devon Archaeological Society* **42**, 59-69.

Straker, V., Brown, A., Fyfe, R. and Jones, J., 2007, 'Romano-British Environmental Background', in C.J. Webster (ed.), *The Archaeology of South West England,* South West Archaeological Research Framework, Resource Assessment and Research Agenda, 145-150. Somerset County Council: Taunton.

Taylor, J., 2013, 'Encountering Romanitas: characterising the role of agricultural communities in Roman Britain', *Britannia* **44**, 171-190.

Todd, M., 1987, *The South-West to AD1000*. Longman: Harlow.

Todd, M., 1996, 'Ancient mining on Mendip, Somerset: a preliminary report on recent work', *Mining History* **13**, 47-51.

Tomber, R. and Dore, J., 1998, *The National Roman Fabric Reference Collection. A Handbook*. MOLAS Monograph **2**.

Tylecote, R.F., 1964, 'Roman lead working in Britain', *British Journal for the History of Science* **2**, 25-43.

Tylecote R.F., 1986, *The Prehistory of Metallurgy in the British Isles*. The Institute of Metals: London.

Valentin, J., 2015, *Land off Exeter Road, Topsham, near Exeter, Devon: Written Scheme for an Archaeological Open Area Excavation.* Unpublished AC archaeology document, ref. **ACD1123/1/1**.

Valentin, J., 2016, *Land North of Wessex Close, Topsham, near Exeter, Devon: Written Scheme for an Archaeological Open Area Excavation.* Unpublished AC archaeology document, ref. **ACD1360/1/1**.

Van der Veen, M., 1982, 'Wood identification, Carlisle 1978, Blackfriars', *Ancient Monuments Lab Report* **3831**.

Van der Veen, M., 1989, 'Charred grain assemblages from Roman period corn driers in Britain', *Archaeological Journal* **146**, 302-319.

Wahl, J., 2008, 'Investigations on Pre-Roman and Roman Cremation Remains from Southwestern Germany: Results, Potentialities and Limits', in C. Schmidt and S. Symes (eds) *The Analysis of Burned Human Remains*. Elsevier: London.

Walton, P., 2012, *Rethinking Roman Britain: Coinage and Archaeology*. Wetteren: Moneta.

Warry, P., 2006, *Tegulae: Manufacture, Typology and Use in Roman Britain*. BAR British Series no. **417**. Archaeopress: Oxford.

Wessex Archaeology, 2014, *Land off Exeter Road, Topsham, Devon, Archaeological Evaluation Report*, unpublished client report, ref. 103700.01.

Wheeler, A. and Jones, A.K.G., 1989, *Fishes*. Cambridge Manuals in Archaeology. Cambridge University Press: Cambridge.

Wheeler, R.E.M. and Wheeler, T.V., 1936, *Verulamium, A Belgic and Two Roman Cities*. Report of the Research Committee of the Society of Antiquaries of London **11**.

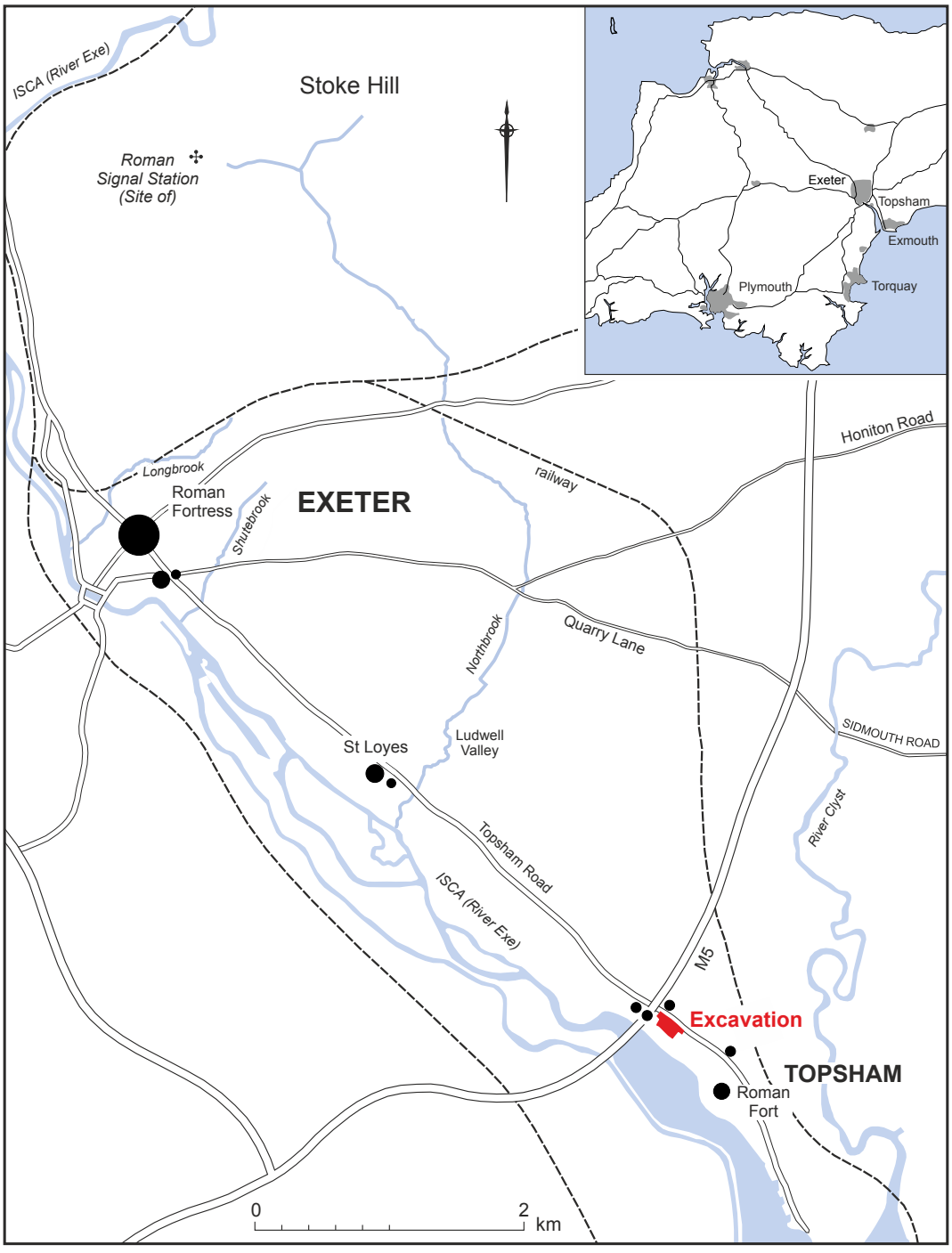
Willcox, G.H., 1977, 'Exotic plants from Roman waterlogged sites in London', *Journal of Archaeological Science* **4***,* 269-82.

Woodward, A. and Cane, C., 1991, 'The Bronze Age pottery' in J.A. Nowakowski 'Trethellan Farm, Newquay: the excavation of a lowland Bronze Age settlement and Iron Age cemetery', *Cornish Archaeology* **30**, 103–131.

Young, C.J., 1977, *Oxfordshire Roman Pottery*. BAR British Series **43**.

Zeepvat, R.J., 1991, 'Roman gardens in Britain', in A.E. Brown (ed.) *Garden Archaeology*, Council for British Archaeology Research Report **78**, 53-69. London.

Zohary, D. and Hopf, M., 2000, *Domestication of Plants in the Old World*. Third Edition. Oxford University Press: Oxford.



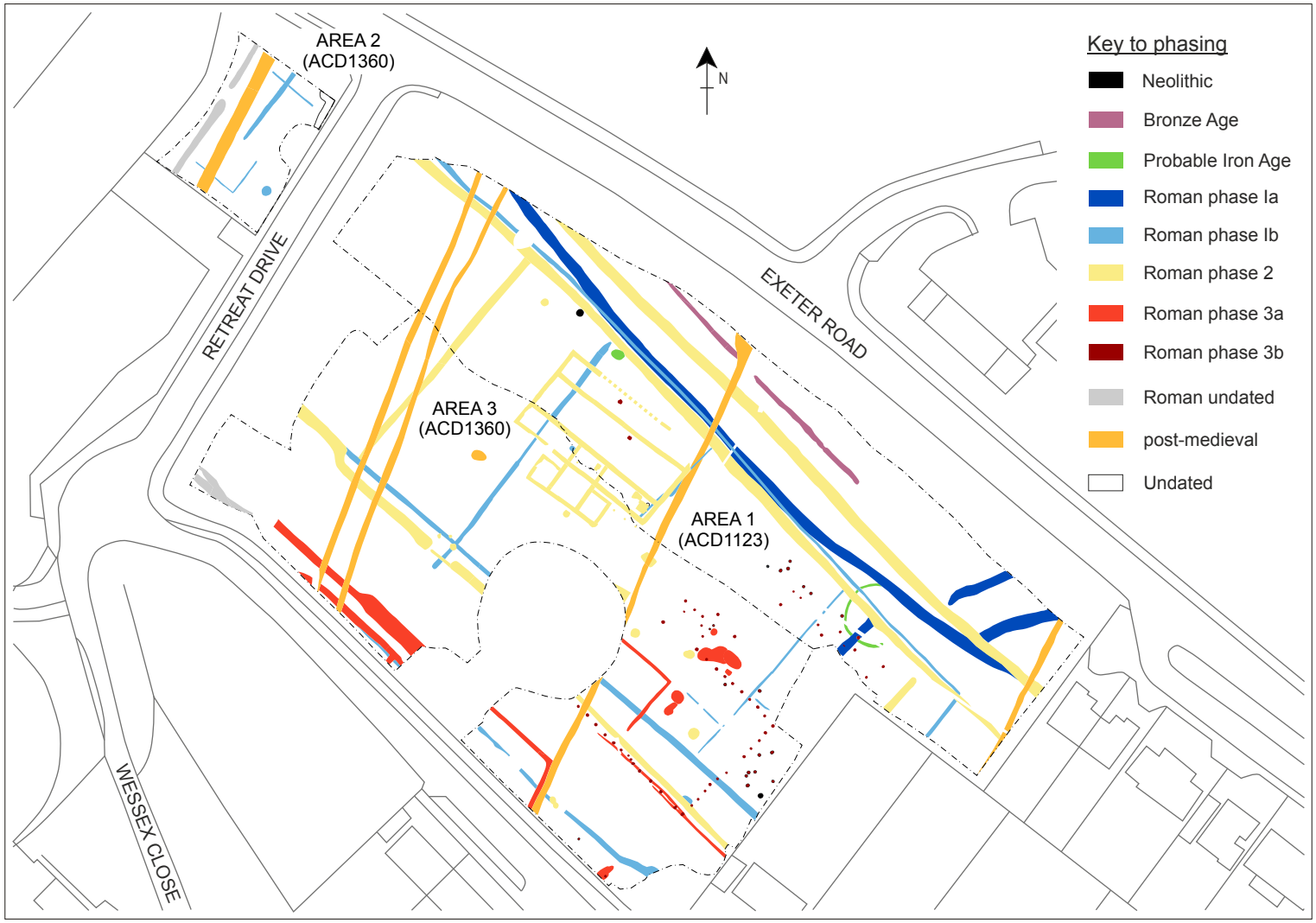
Roman sites

PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 1: Location of excavation area and Roman sites between Exeter and Topsham



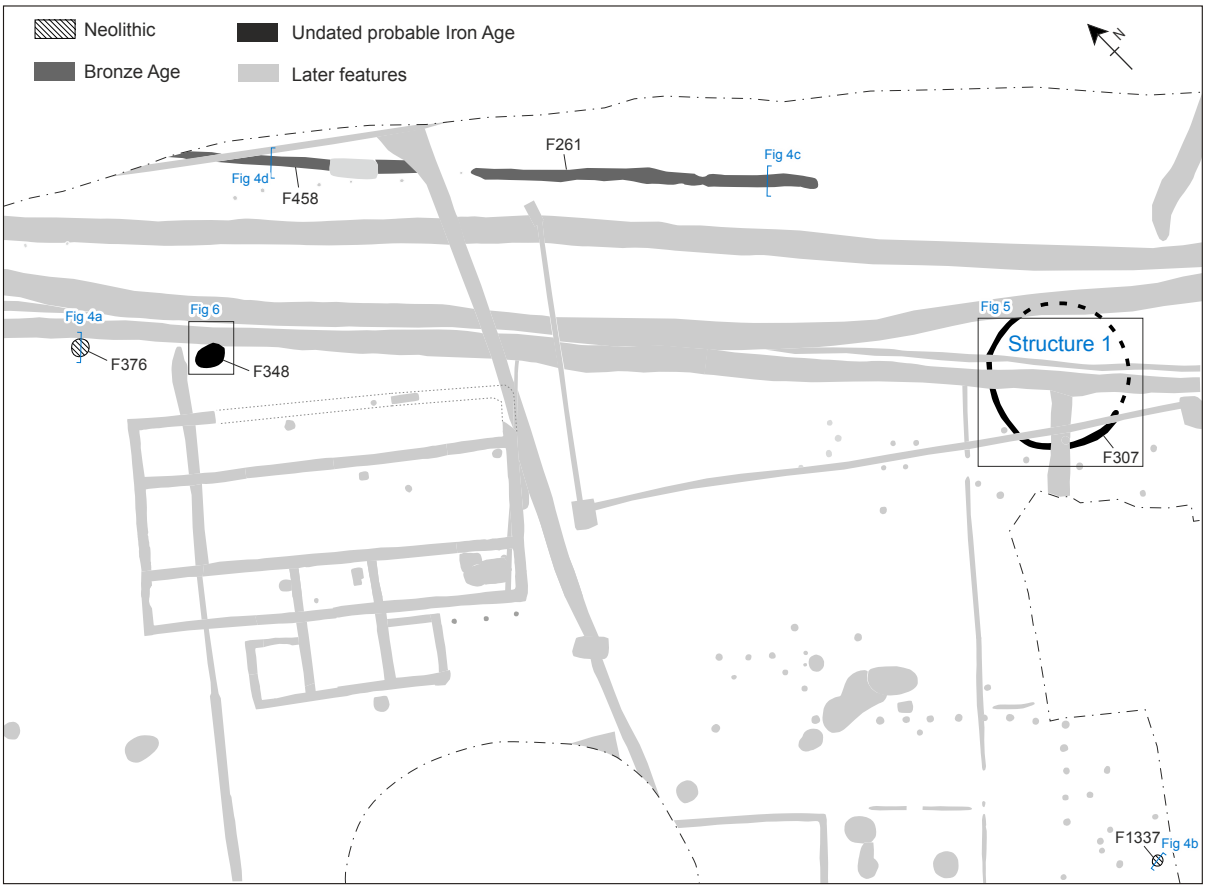
AC archaeology

PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 2: Overall phased site plan

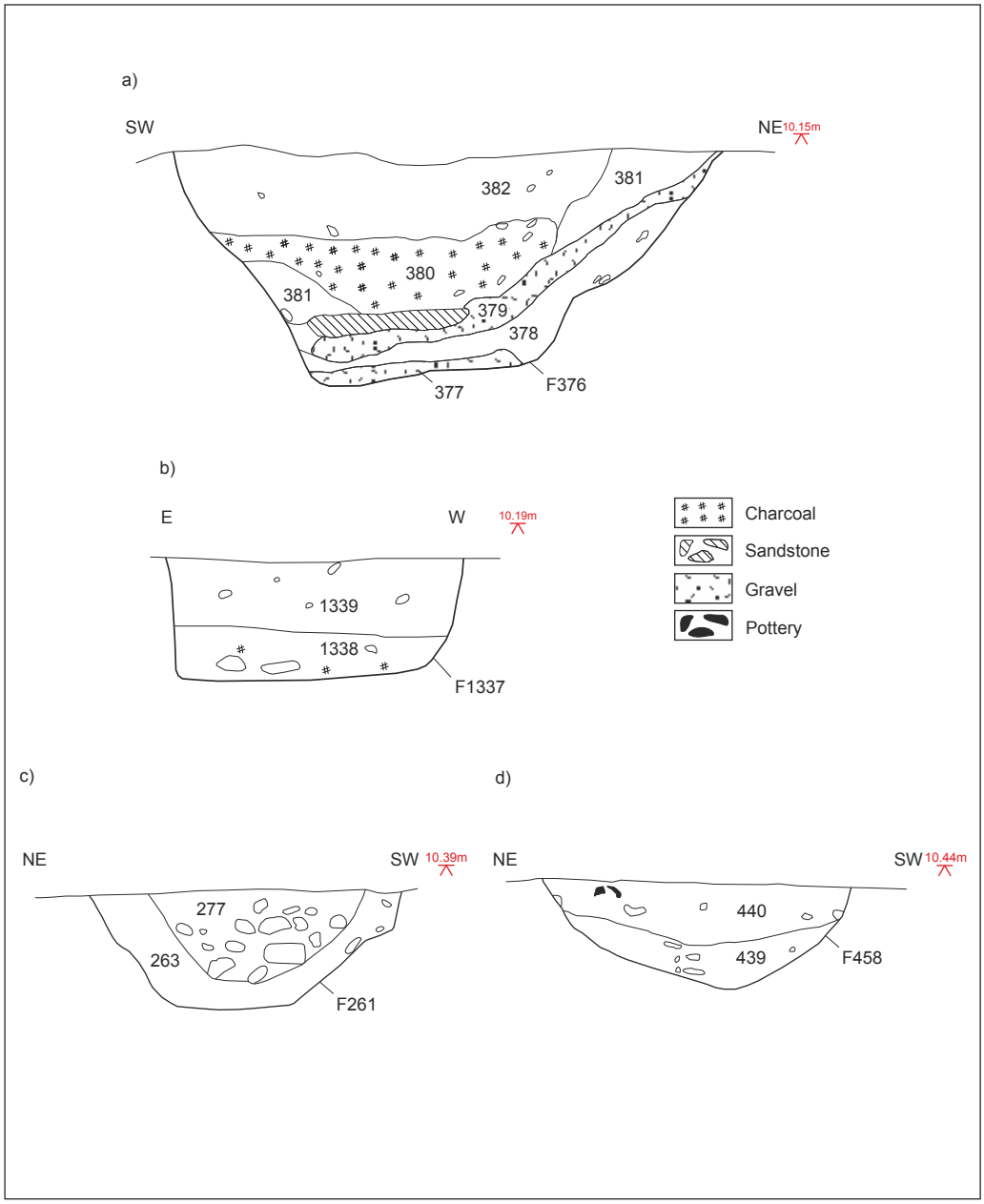


PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 3: Prehistoric features - phase plan



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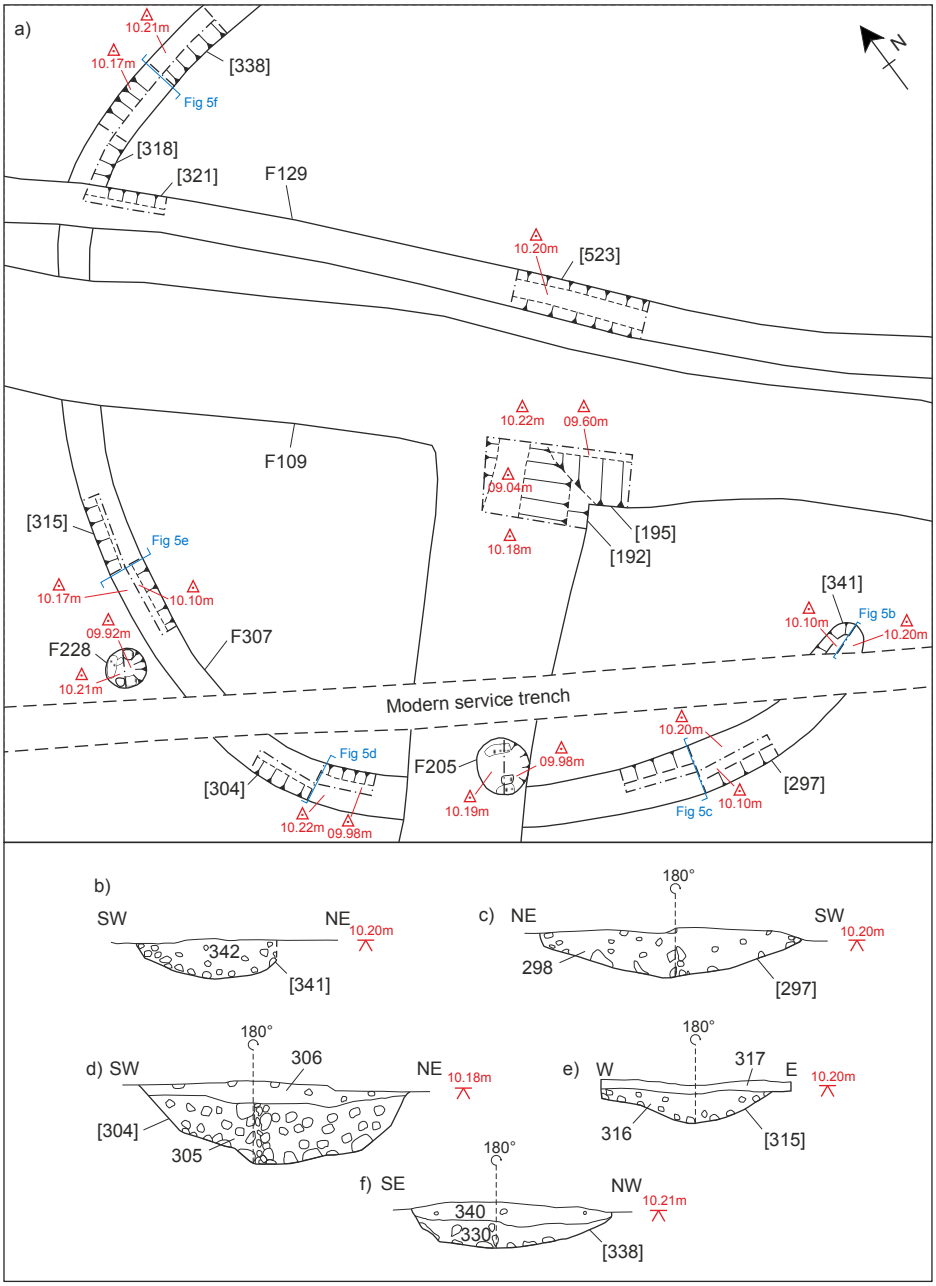
Scale 1:20@A4

PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 4: Sections of prehistoric features



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0 Plan 5m

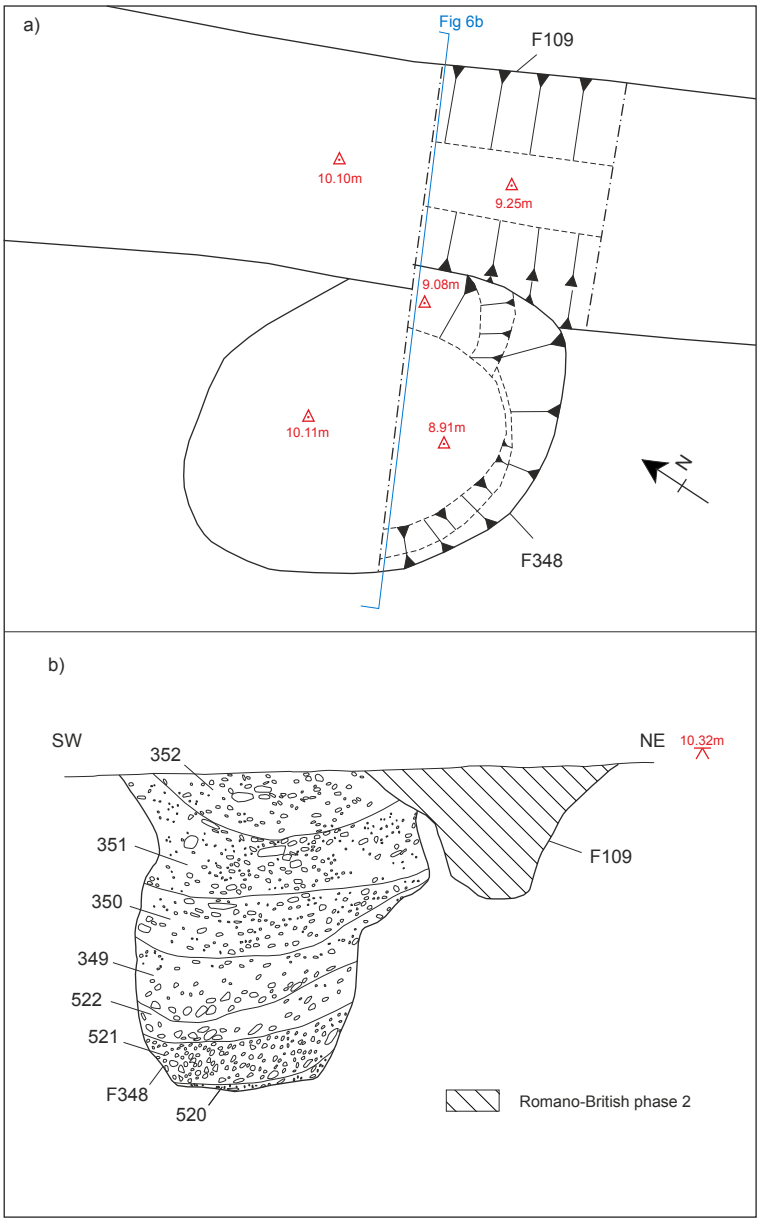
Scale 1:100@A4

PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 5: Probable Iron Age ring gully (Structure 1), plan and sections



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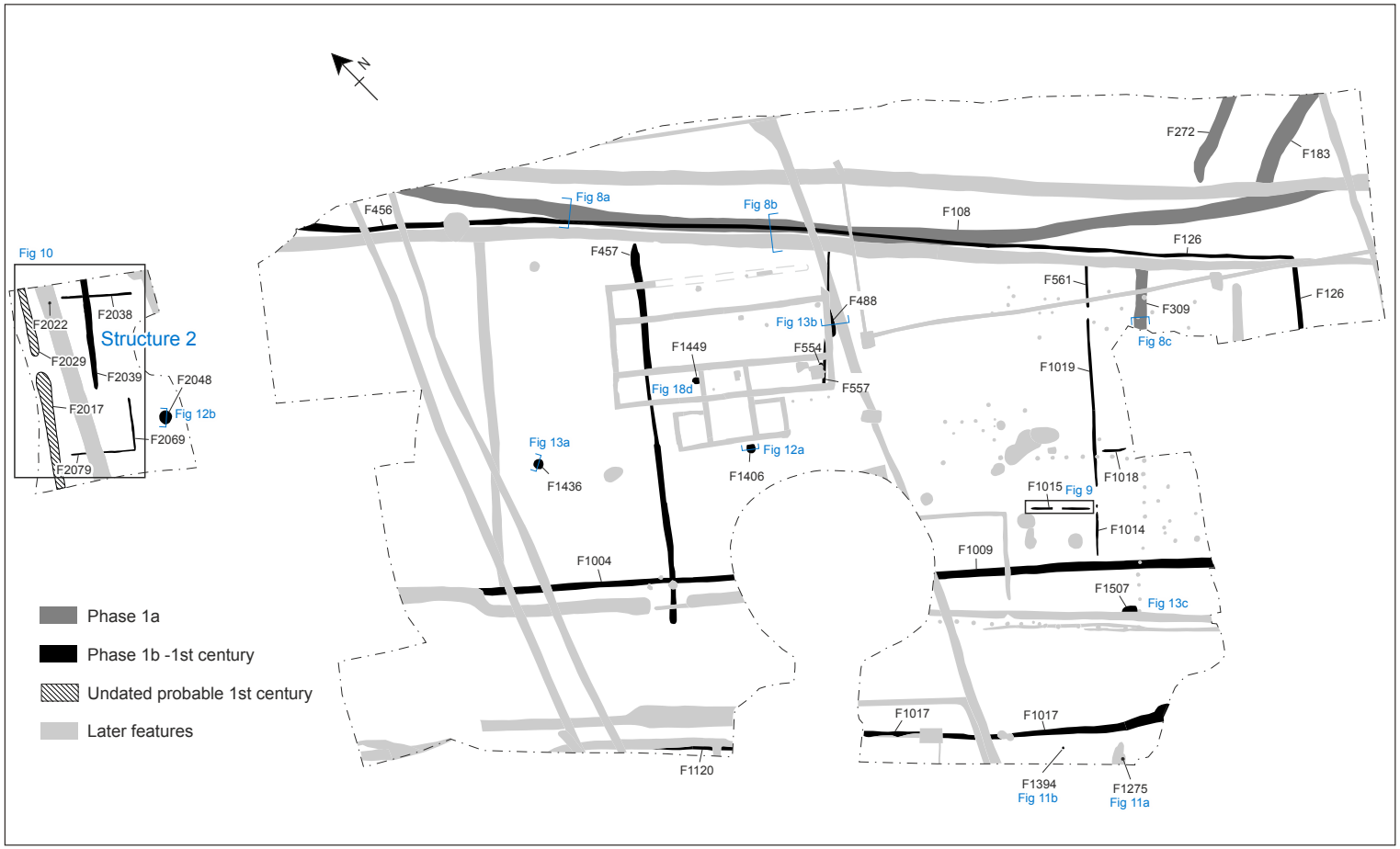
Scale 1:50@A4

PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 6: Probable Iron Age pit F348, plan and section

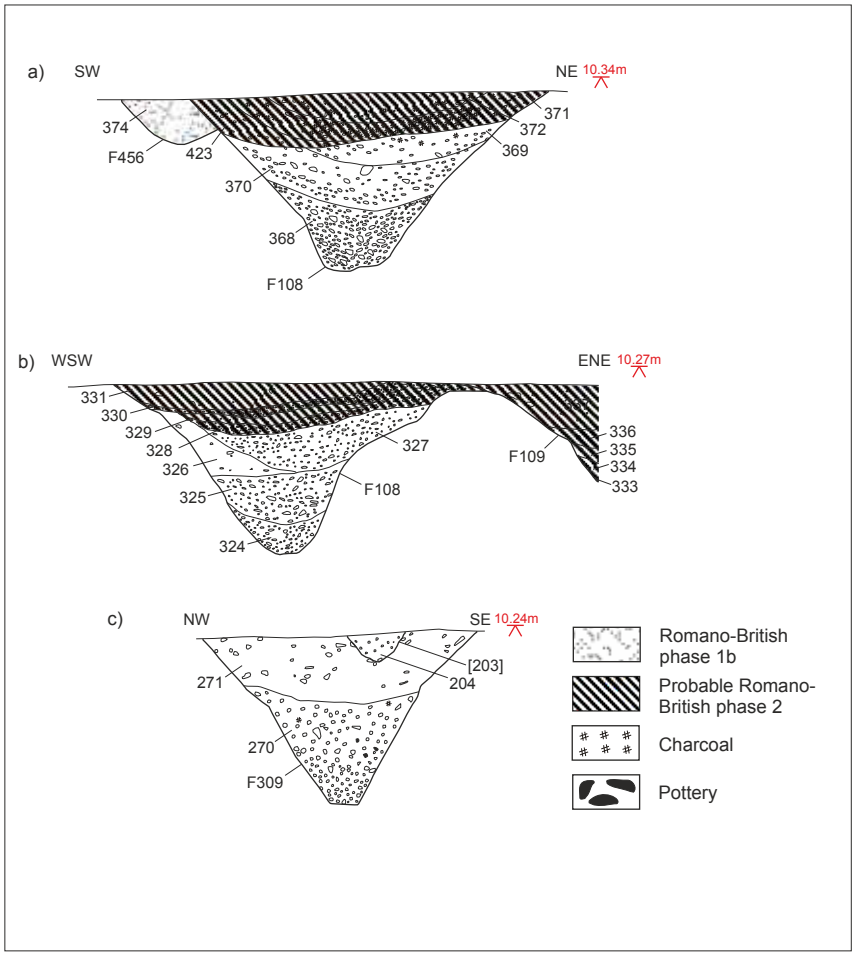


PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 7: Romano-British phase 1 plan



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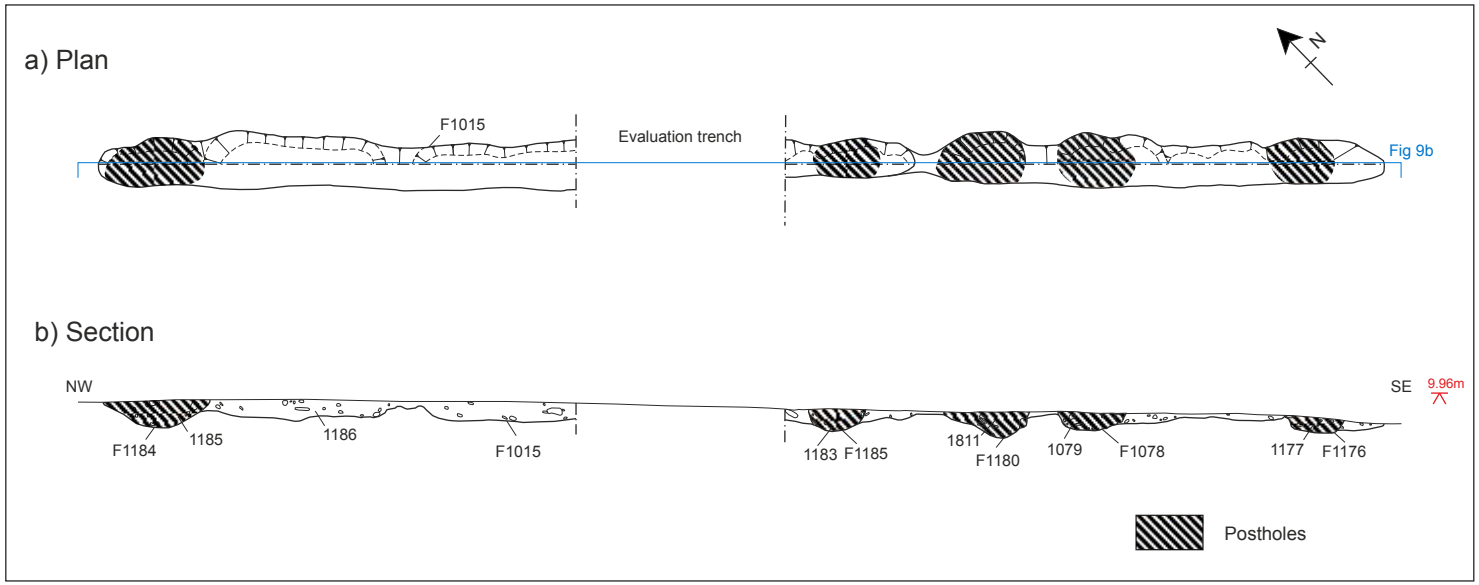
PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 8: Romano-British phase 1a, ditch sections



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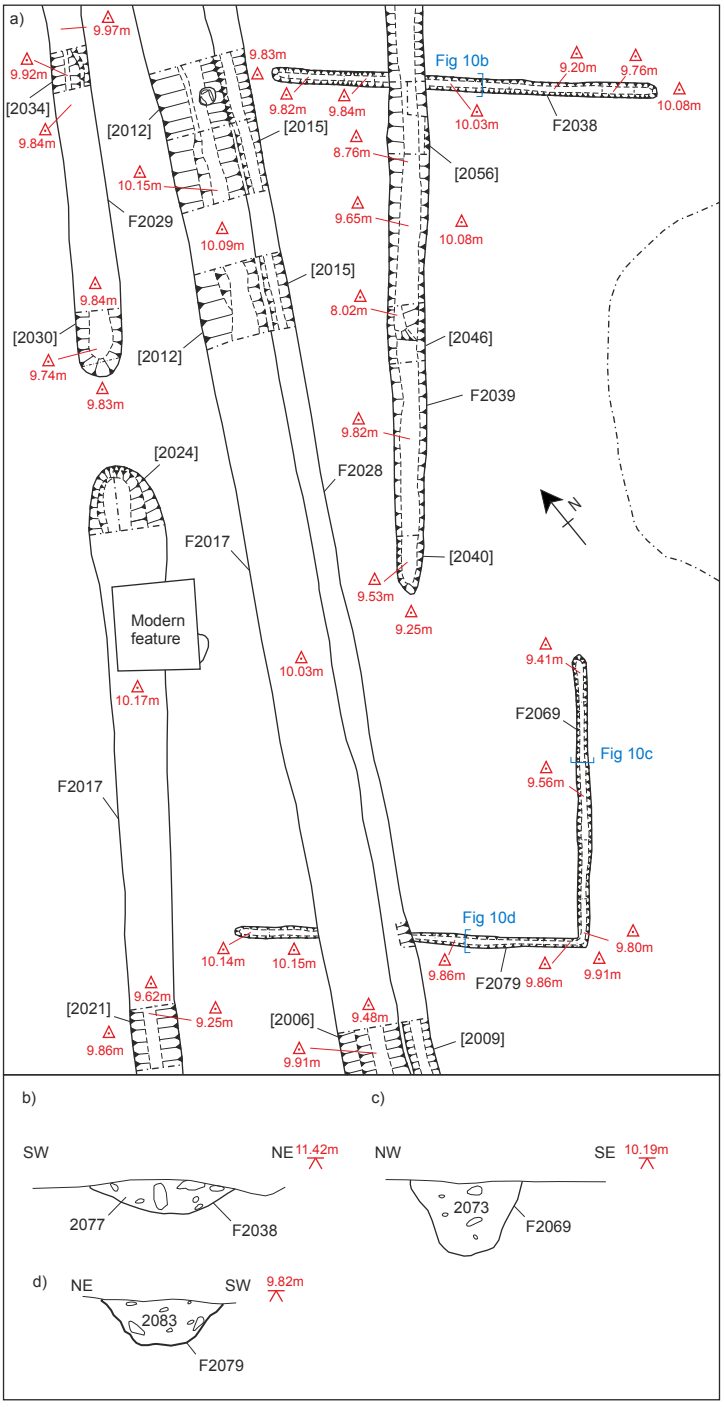
PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 9: Post trench F1015, plan and section



0 Plan 10m

Scale 1:200@A4

0 Sections 1m

Scale 1:20@A4

PROJECT

Land north of Wessex Close, Topsham Road, Exeter

TITLE

Fig. 10: Post trench (Structure 2), plan and sections

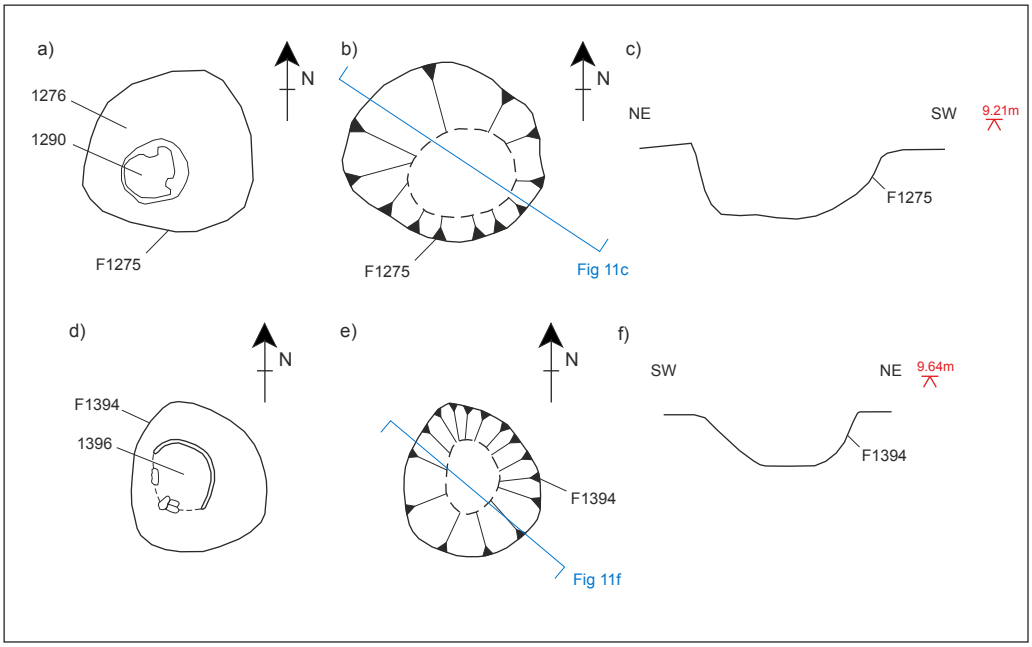


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Fig. 11: Cremations 1290 and 1396, plans and sections

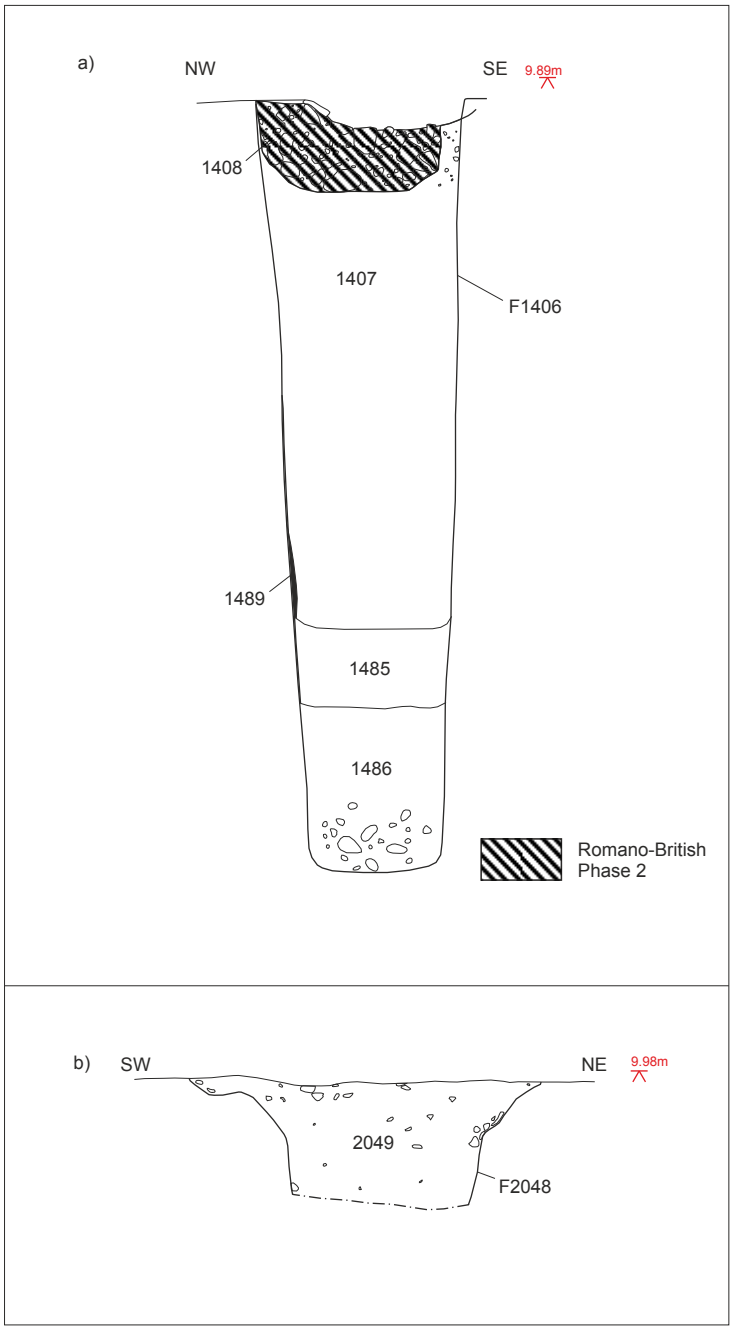

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Fig. 12: Wells 1406 and 2048, sections

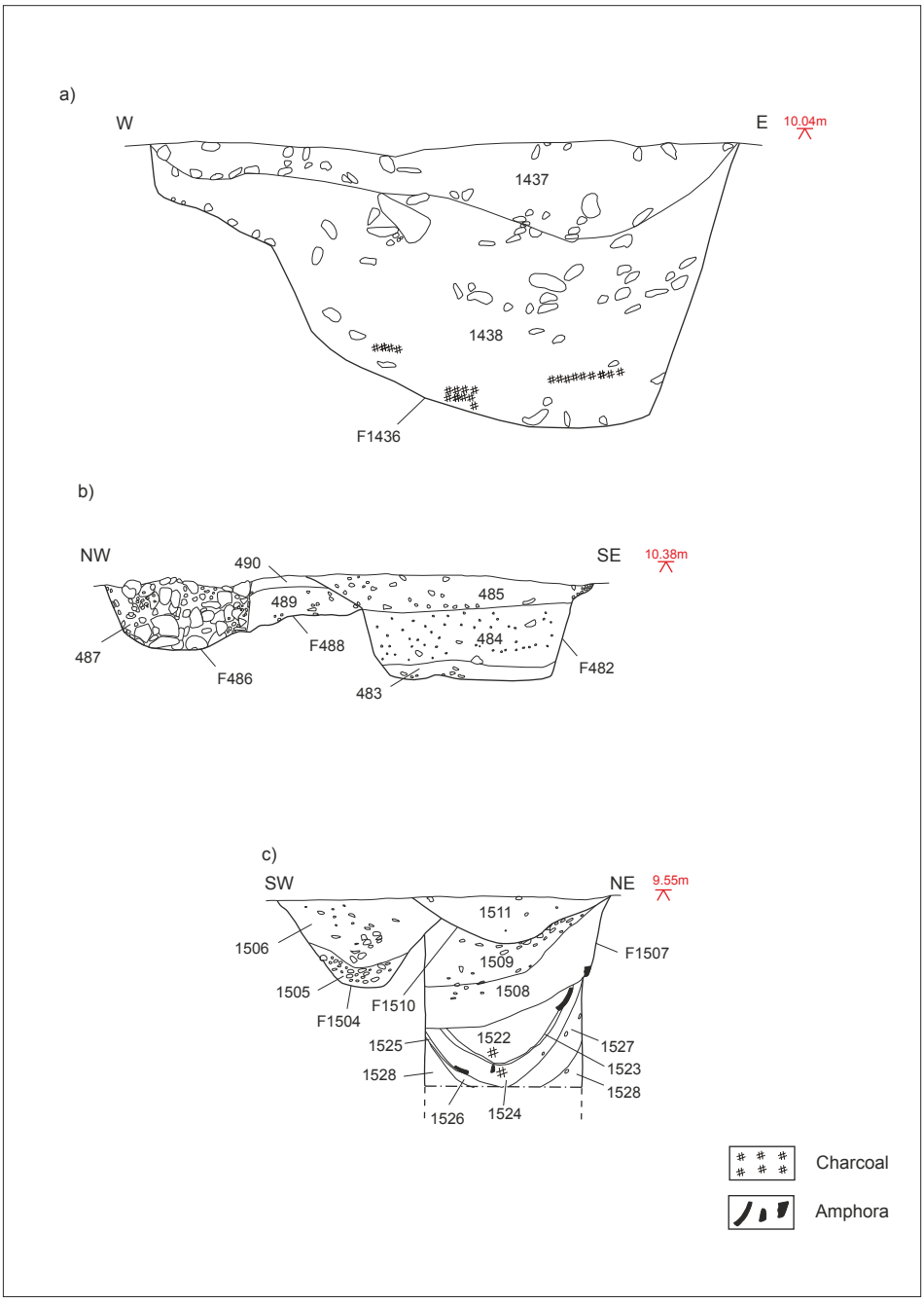

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Fig. 13: Pits F1436, F486, F488, F482 and F1507, sections

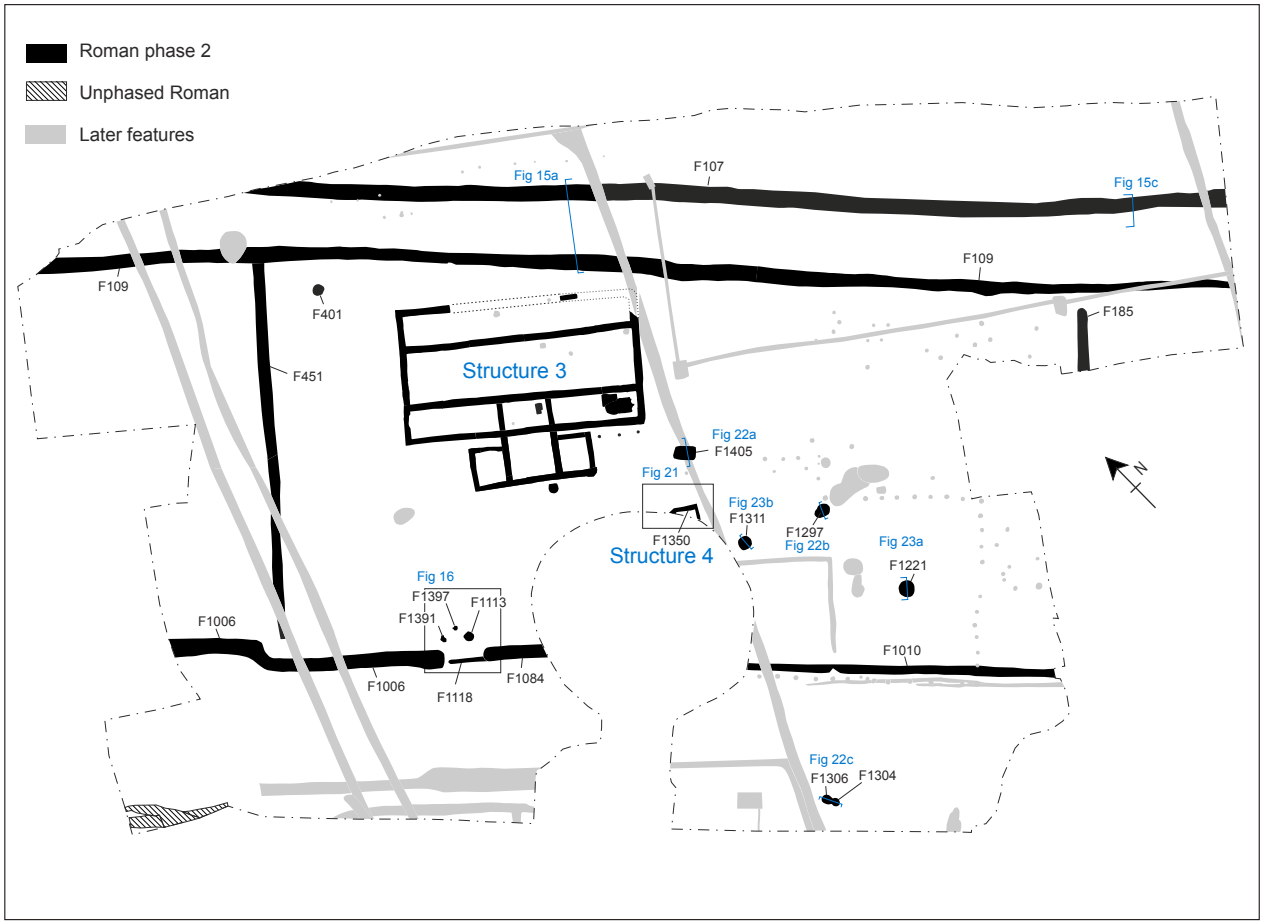

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Fig. 14: Romano-British phase 2 plan

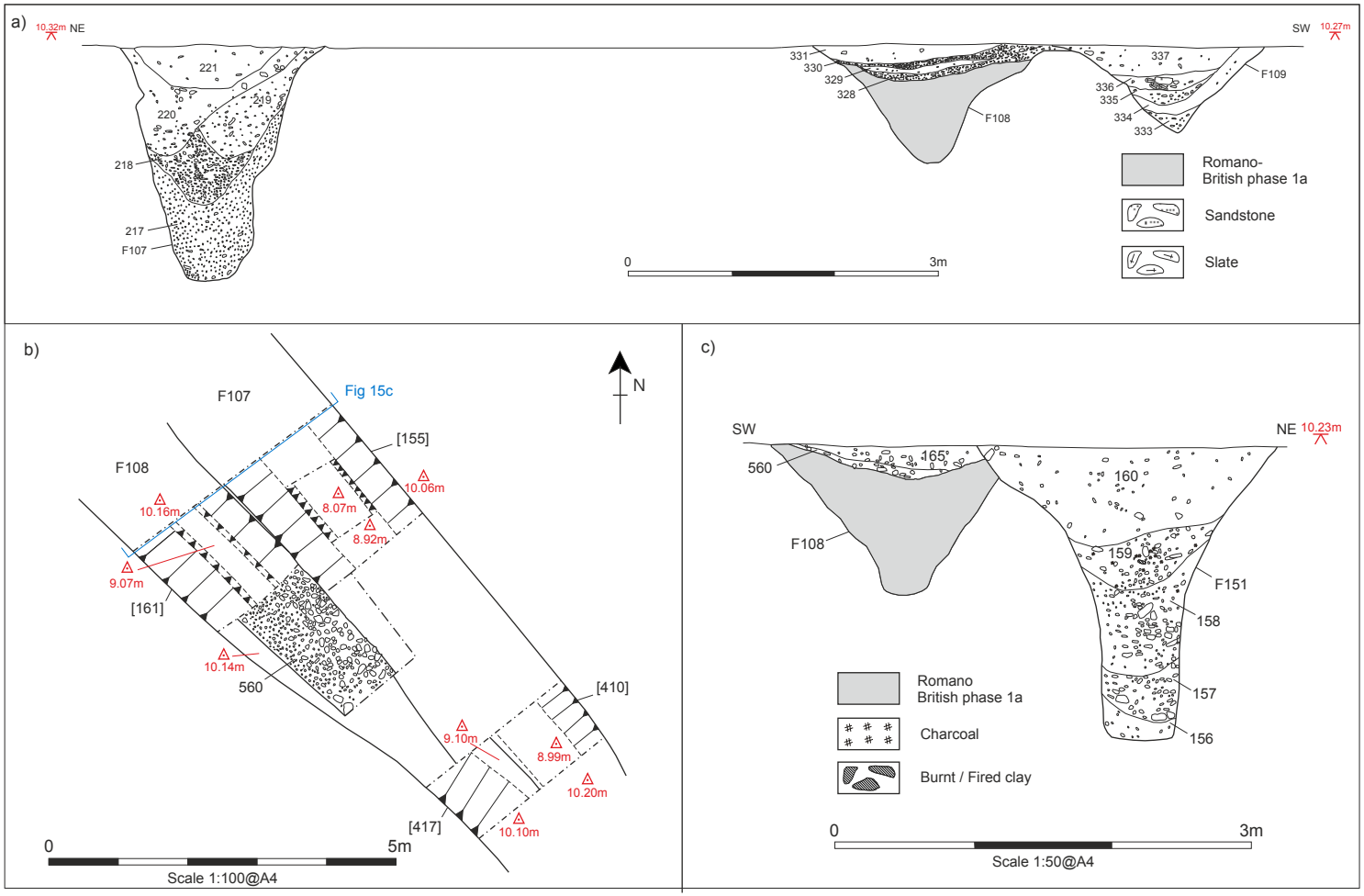

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Fig. 15: Roadside ditches F107, F108, F151 and road surface 560, plan and sections

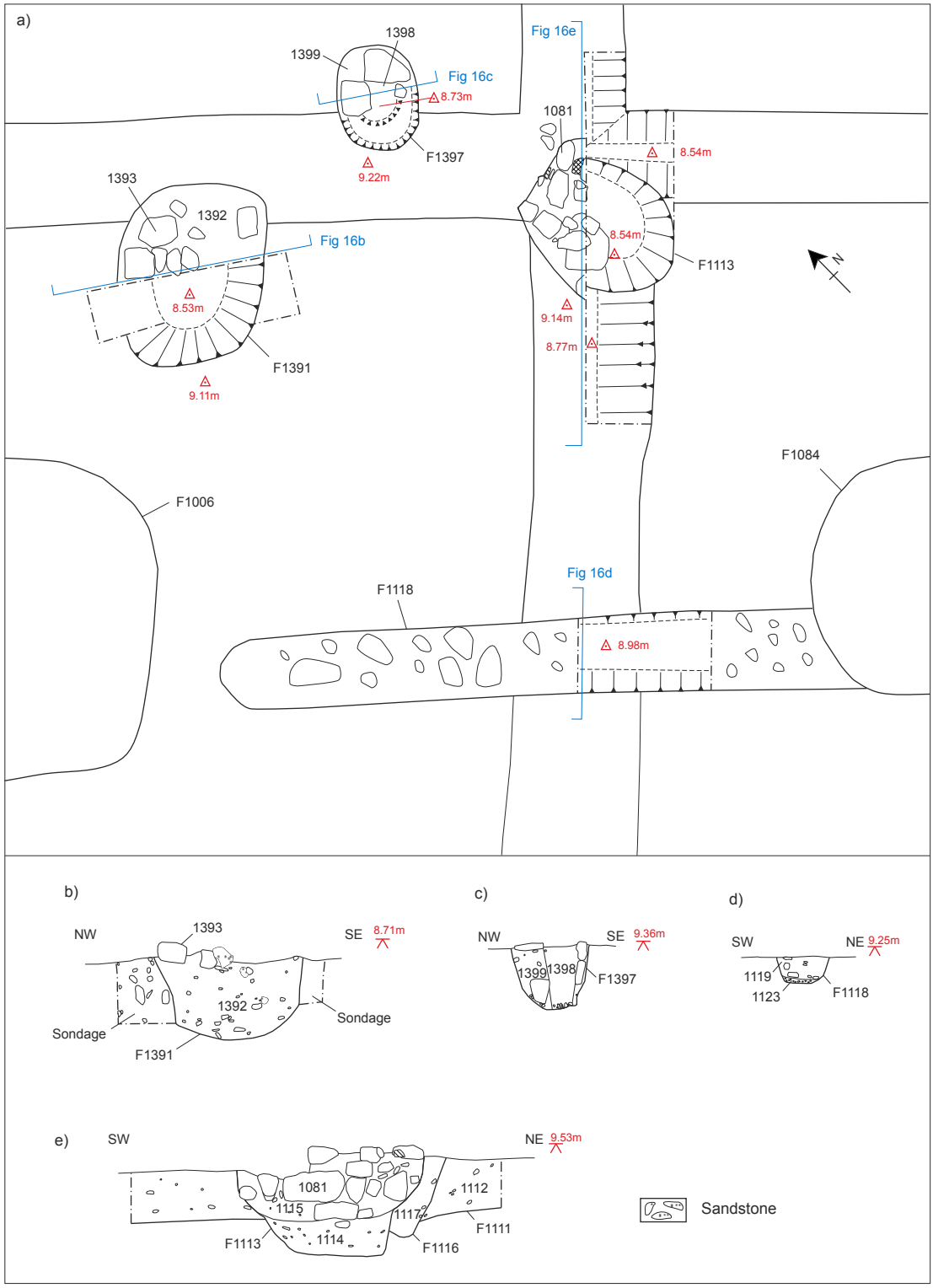

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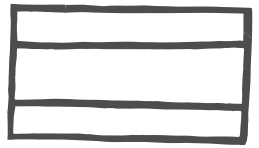
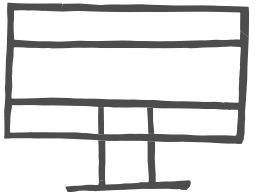
Fig. 16: Romano-British phase 2 enclosure possible gateway features, plan and sections

Phase I



Phase II



Phase III

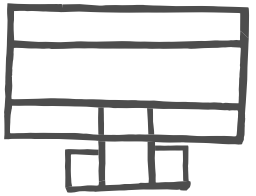


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Fig. 17: Romano-British building (Structure 3), plan

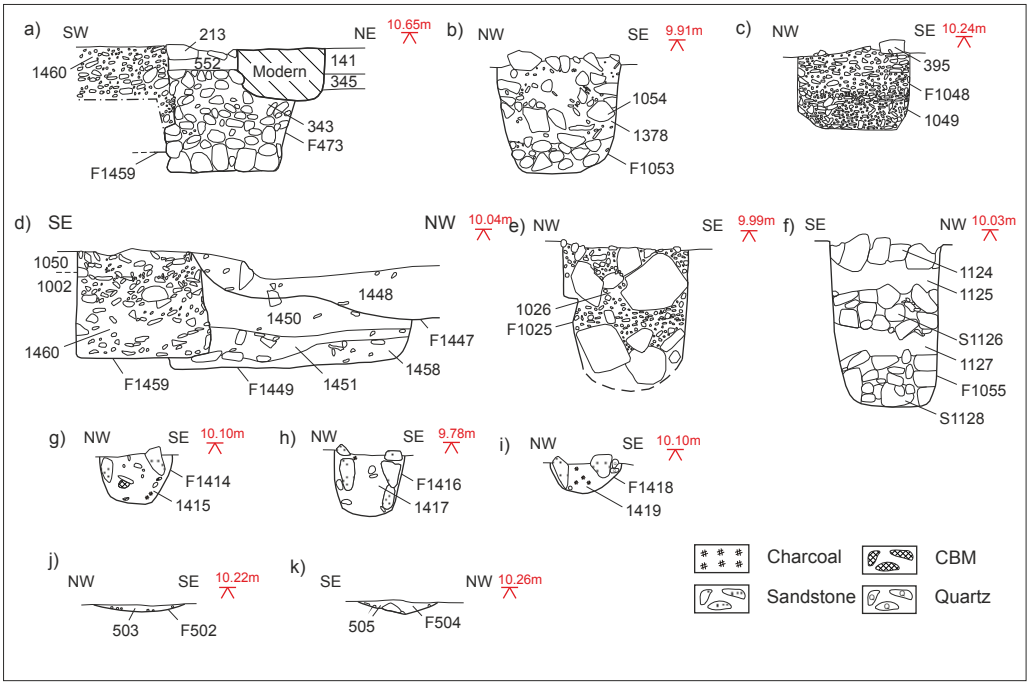

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Fig. 18: Romano-British building (Structure 3), wall profiles and posthole sections

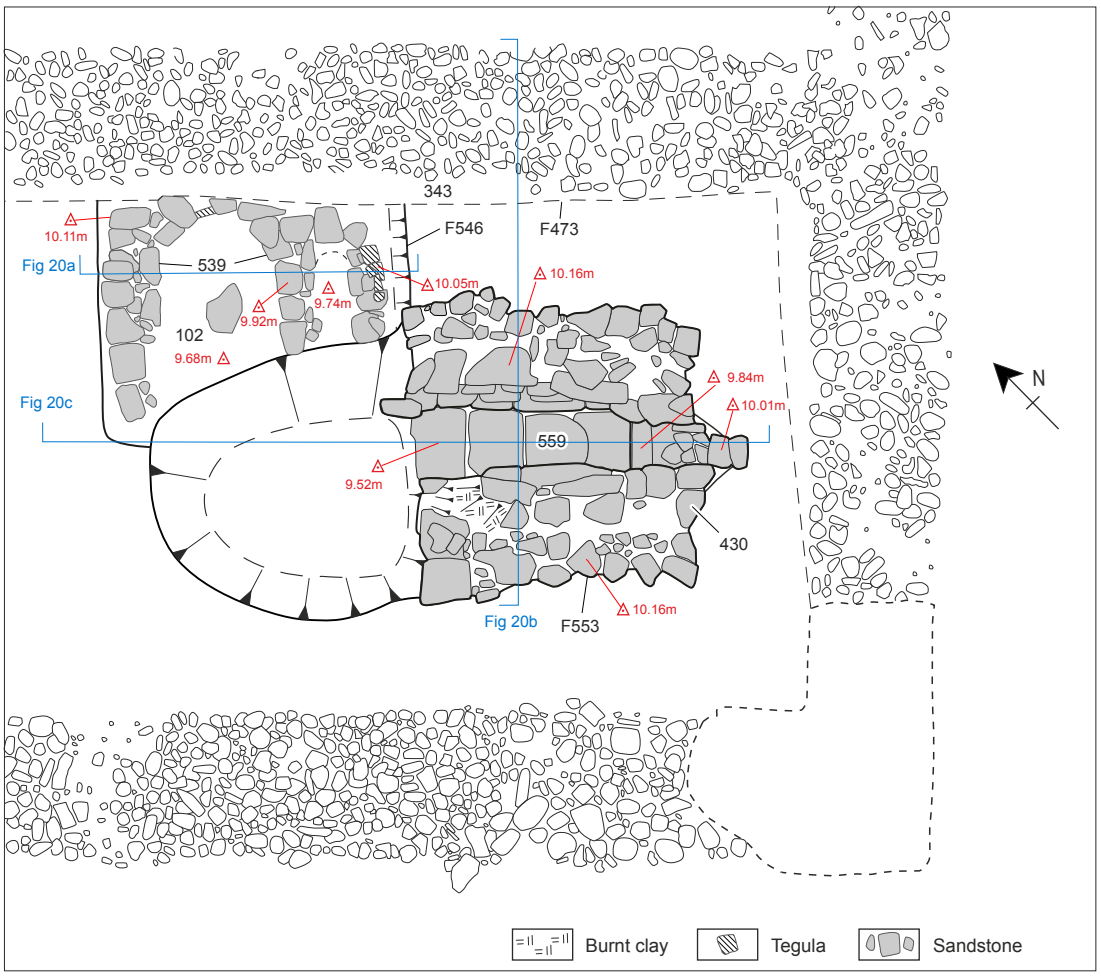

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Fig. 19: Romano-British ovens F546 and F553 inside Structure 3, plan

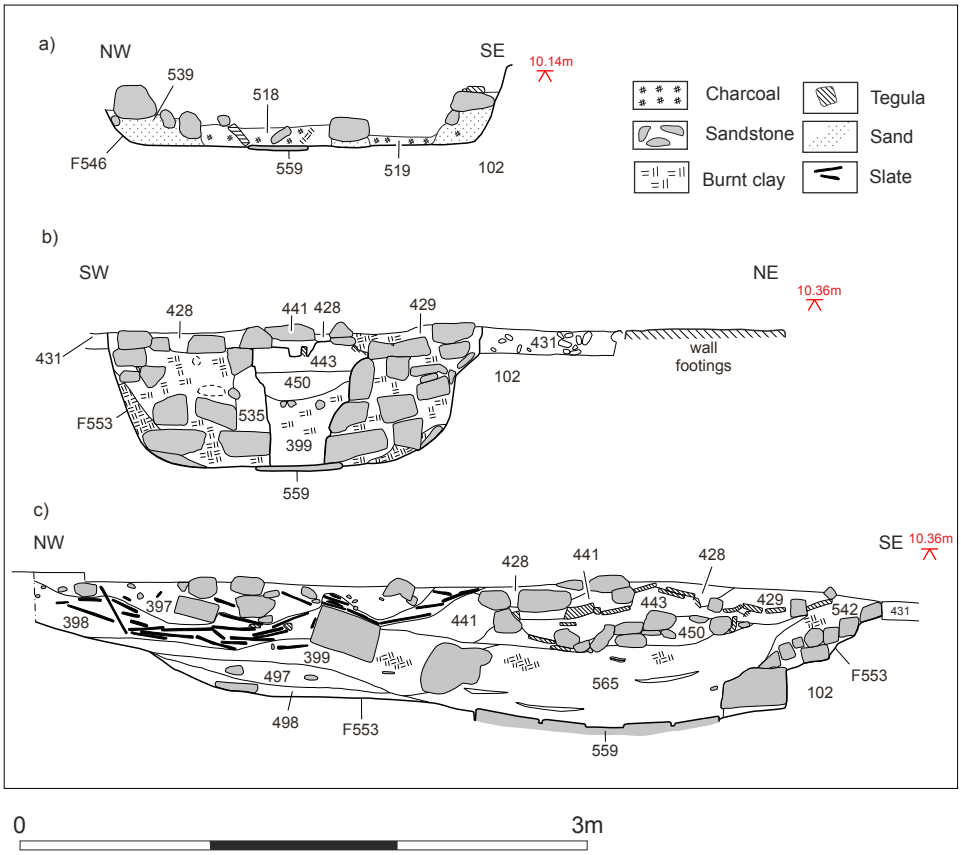

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Fig. 20: Romano-British ovens F546 and F553, sections

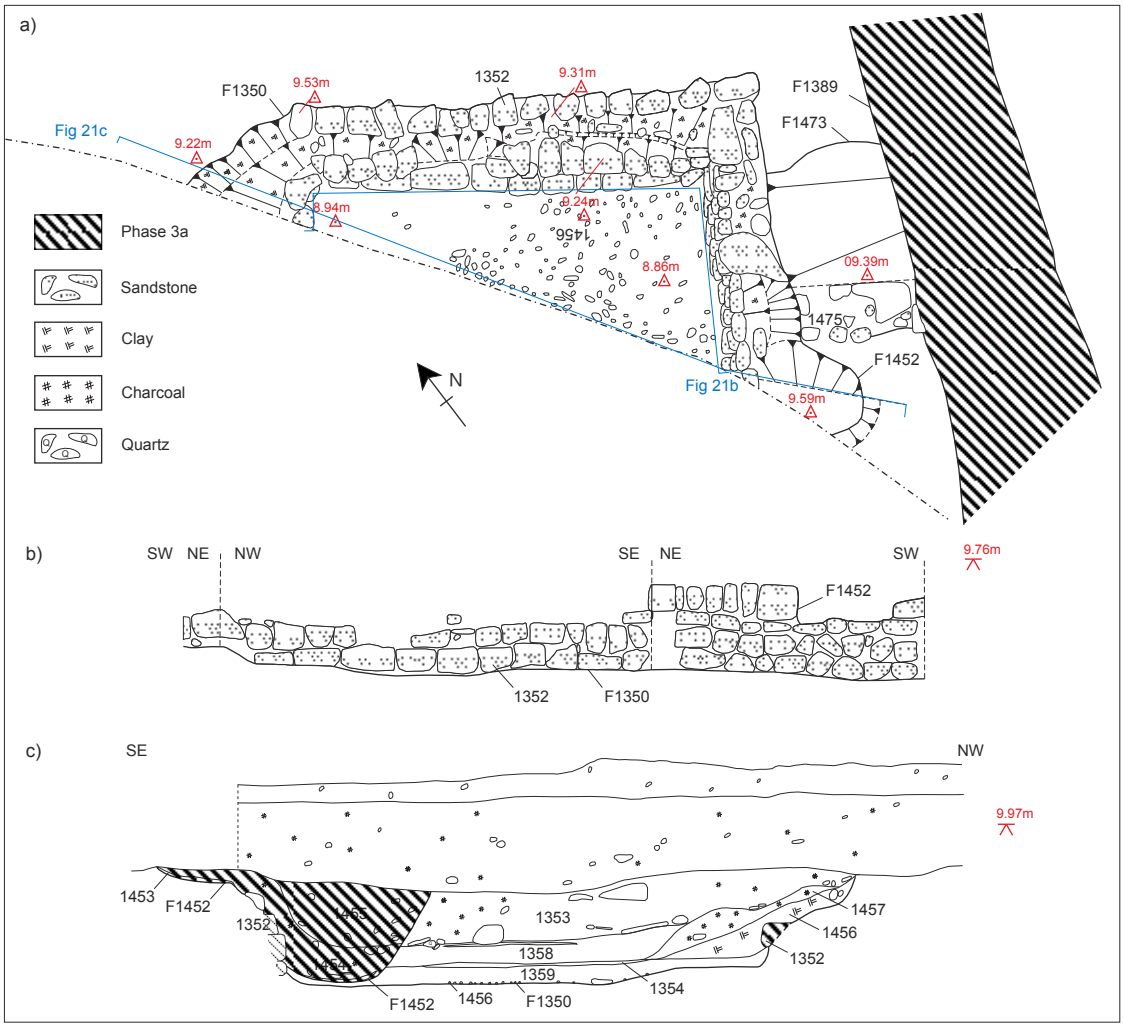

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Fig. 21: Romano-British building (Structure 4), plan, elevation and section

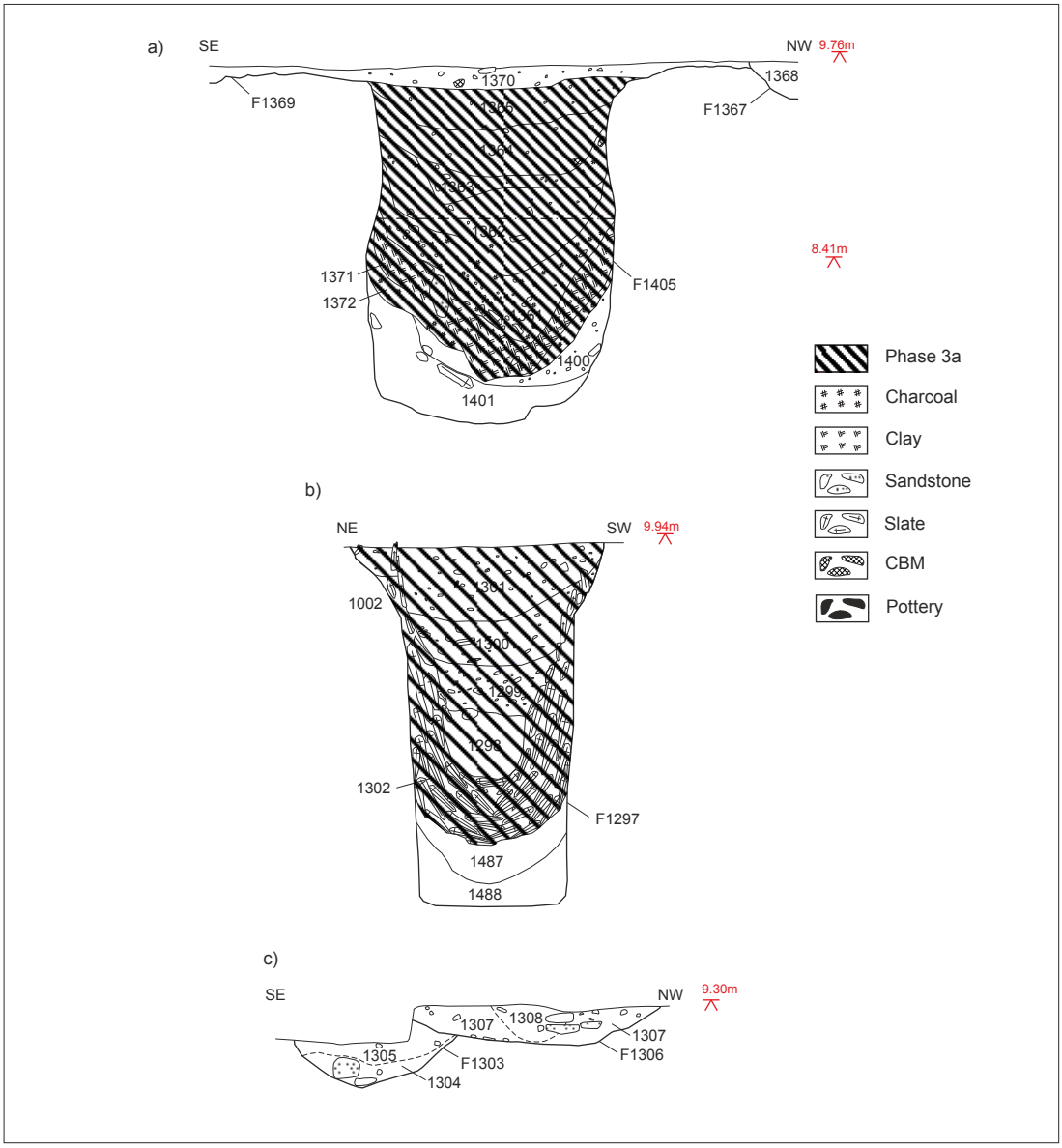

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Fig. 22: Romano-British cess pits F1405 and F1297 and pits F1303 and F1306, sections

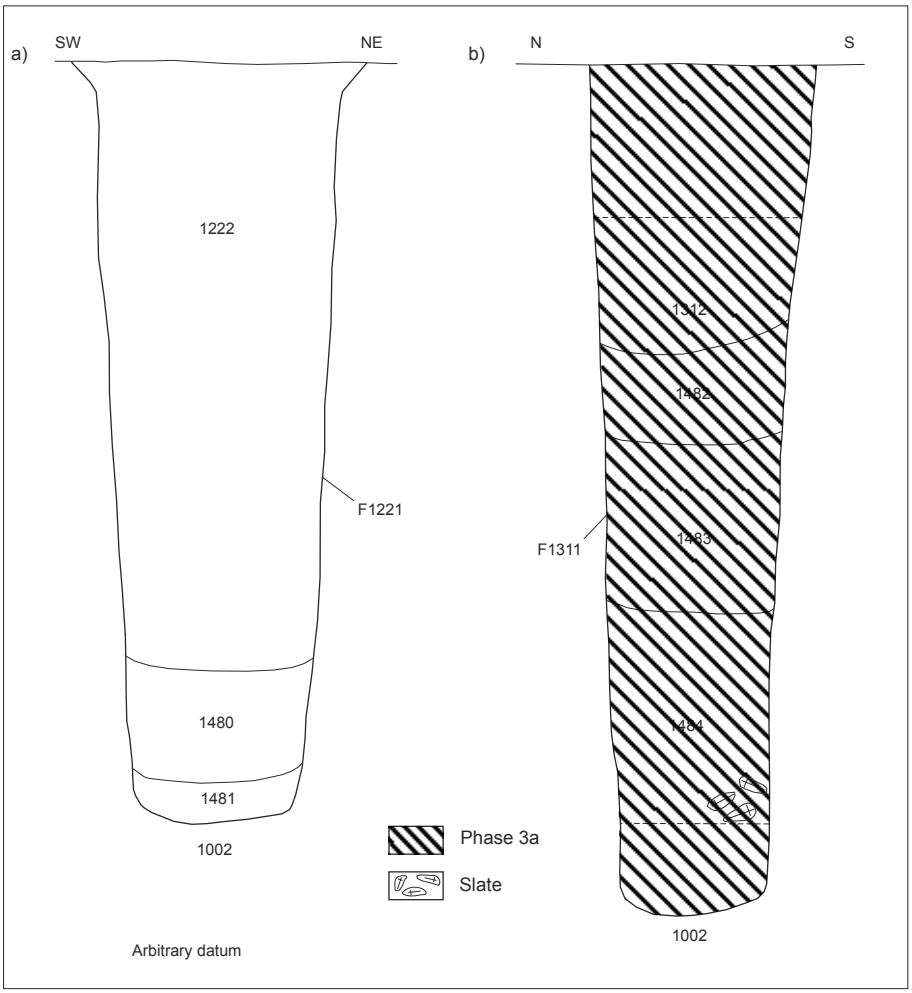

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Fig. 23: Romano-British wells F1221 and F1311, sections

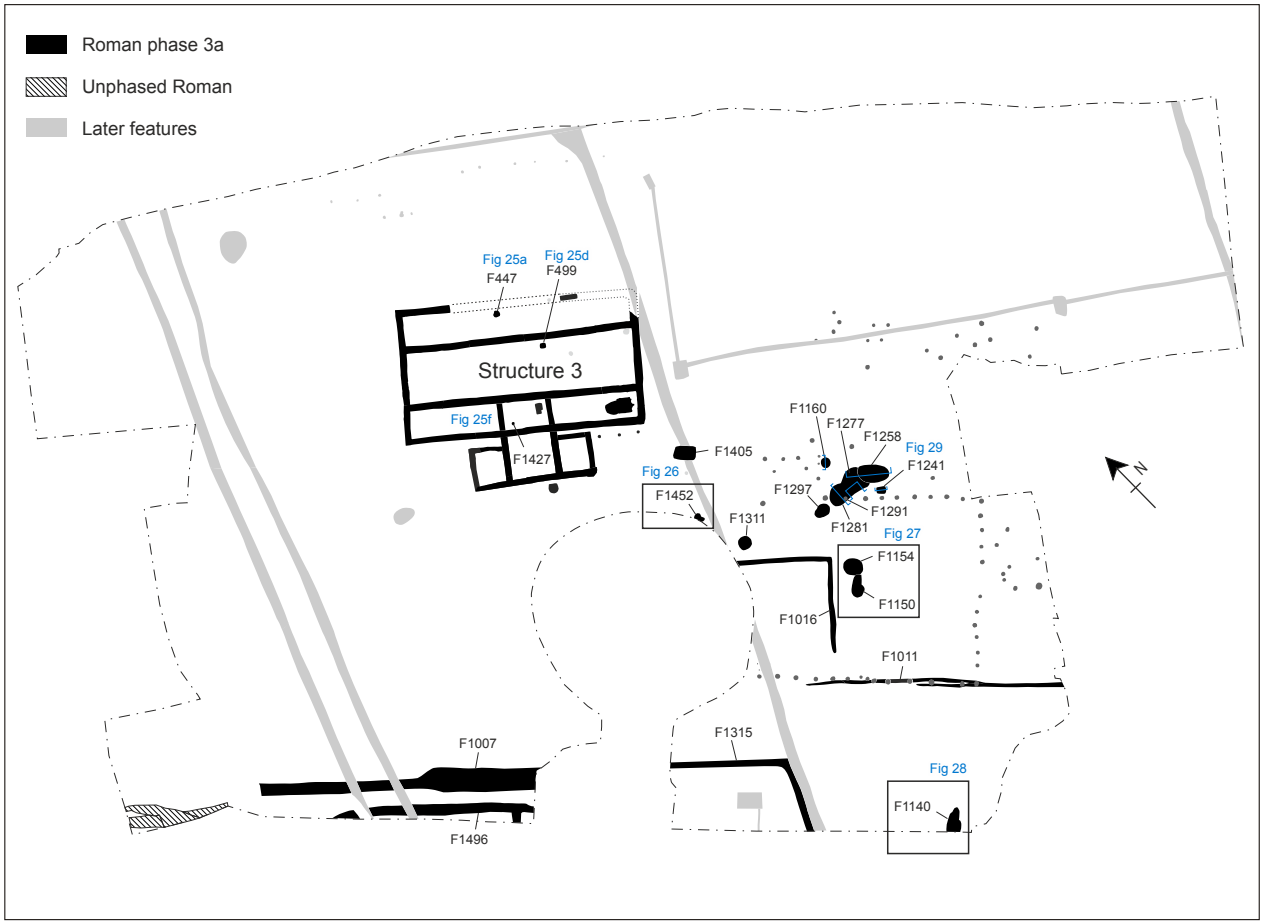

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Fig. 24: Romano-British phase 3a plan

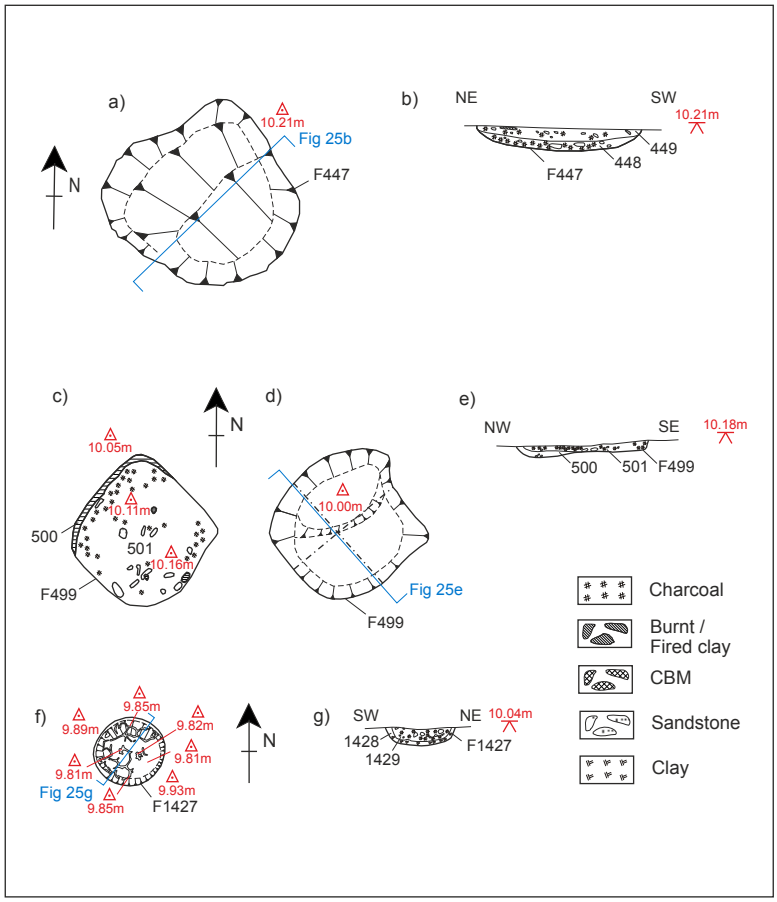

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Fig. 25: Romano-British metalworking hearths F447, F499, and F1427, plans and sections

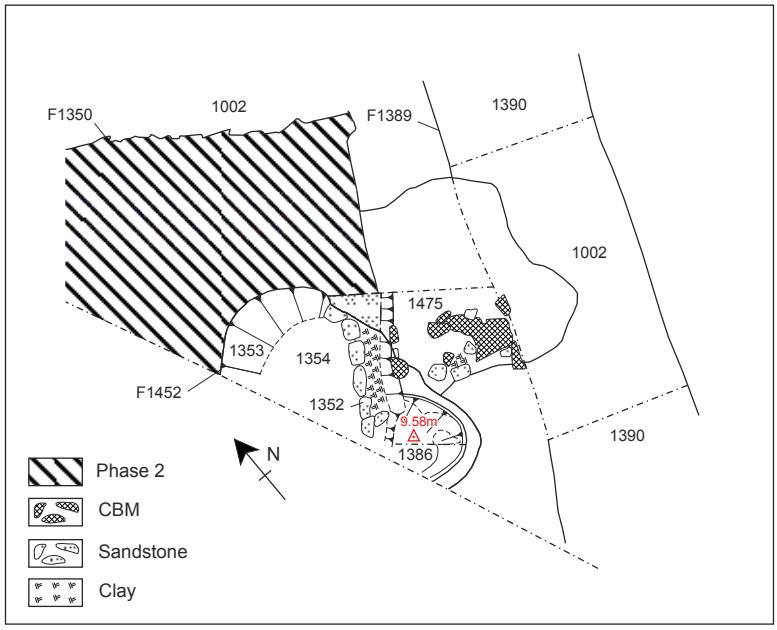

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Fig. 26: Romano-British oven or furnace F1452, detailed plan

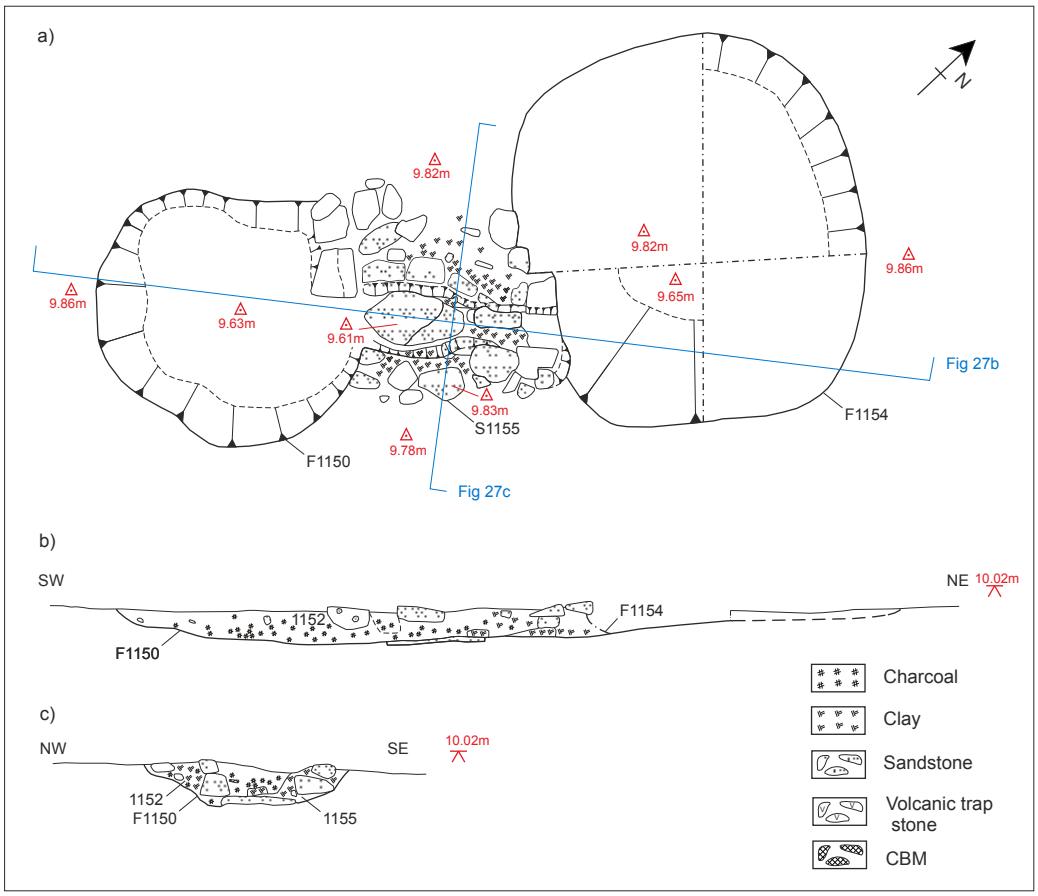

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Fig. 27: Romano-British oven F1150, detailed plan and sections

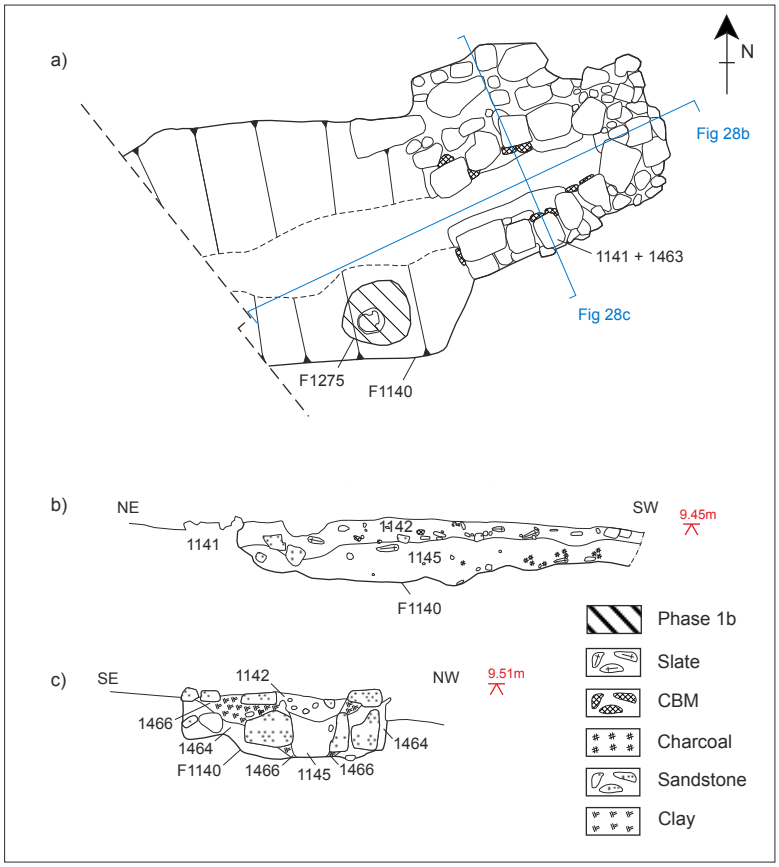

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Fig. 28: Romano-British oven F1140, detailed plan and sections

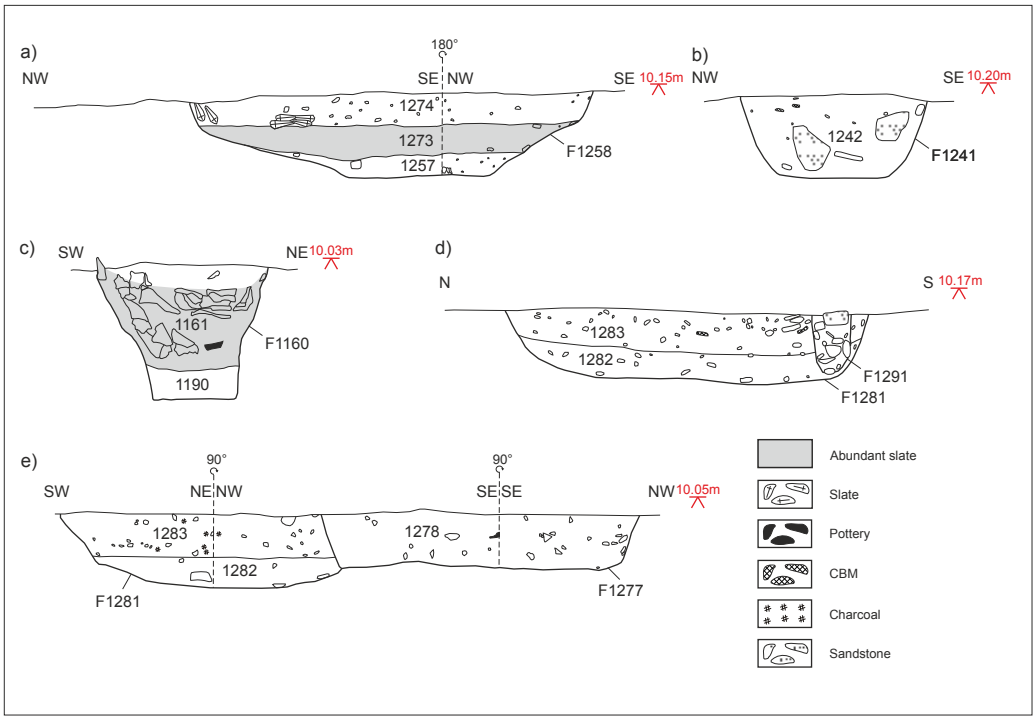

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Fig. 29: Romano-British pits F1258, F1281, F1277 and F1160, sections

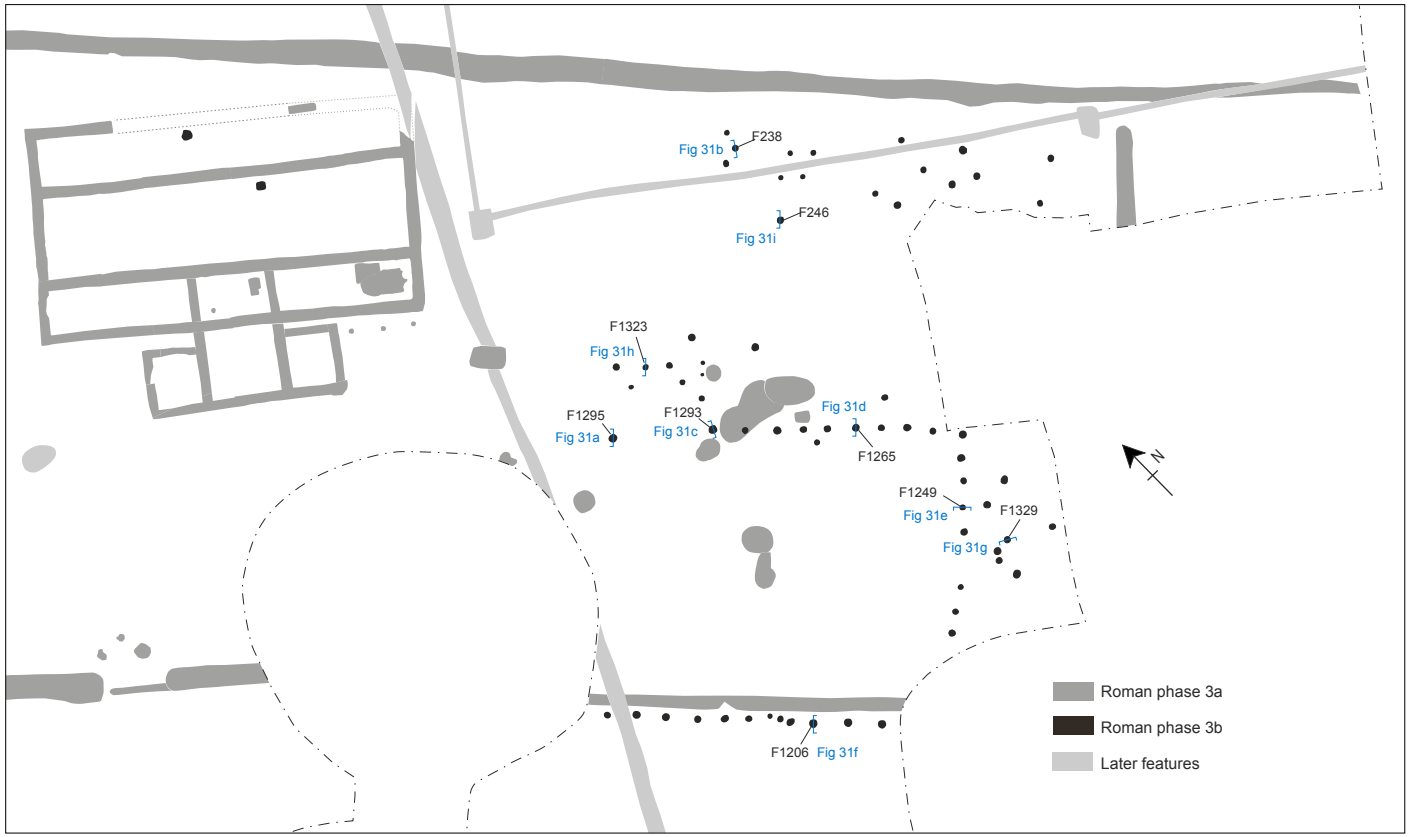

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Fig. 30: Romano-British phase 3b, plan

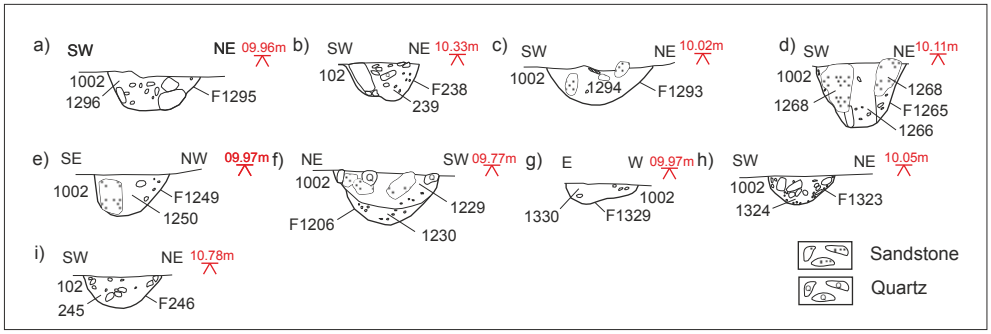

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Fig. 31: Selected Romano-British phase 3b postholes, sections

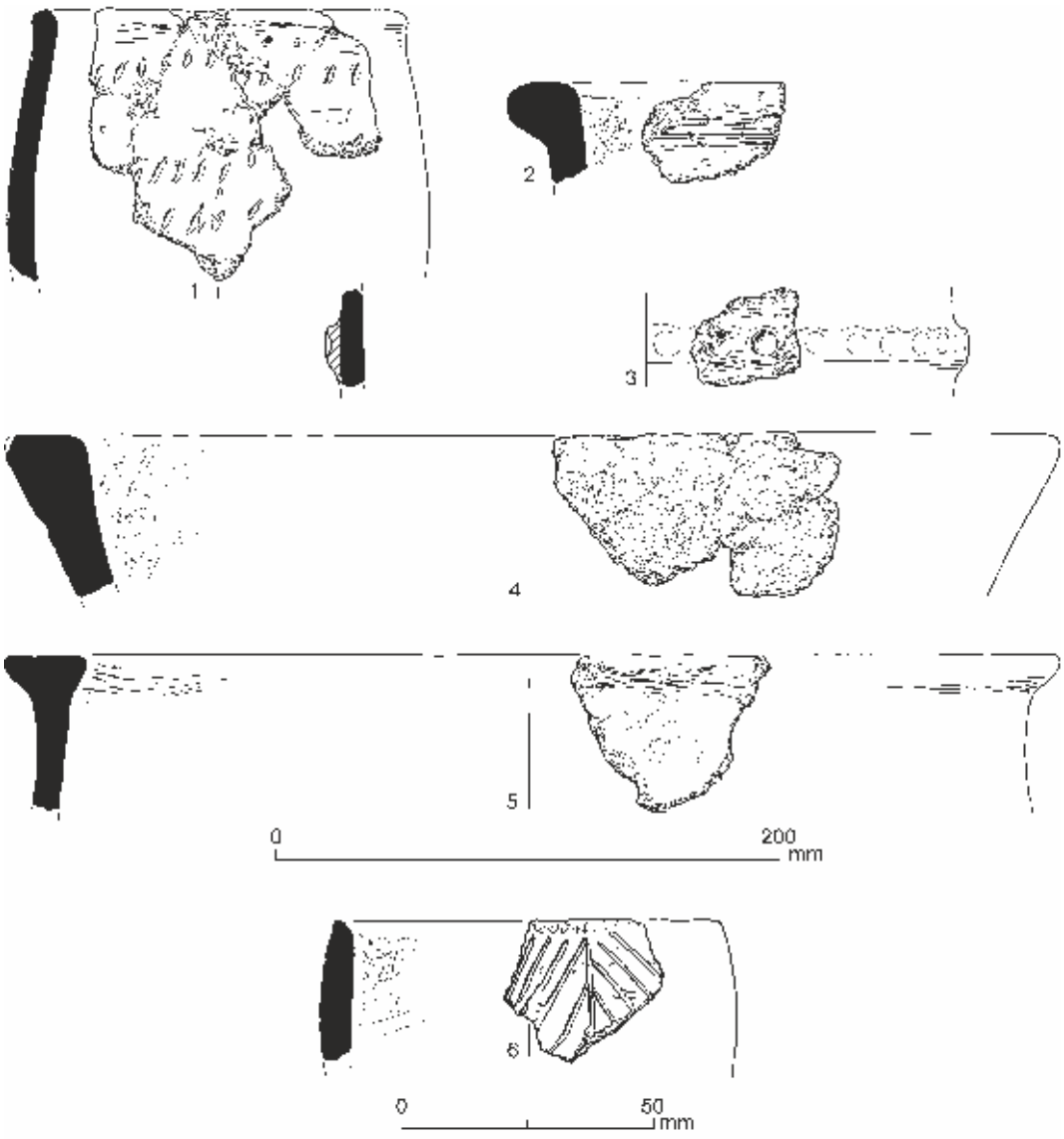

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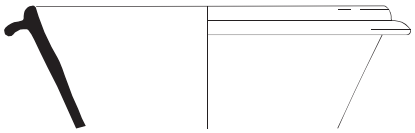
Fig. 32: P1-5 Trevisker-related Middle Bronze Age; P6 probable Grooved Ware (*Drawn by Jane Read*)



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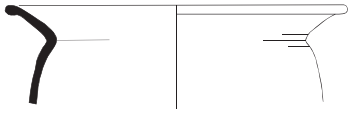

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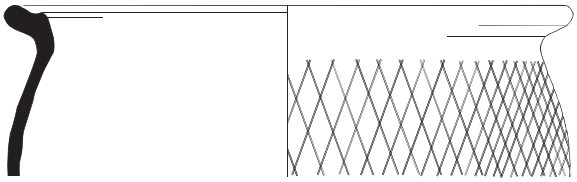

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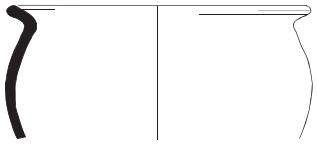

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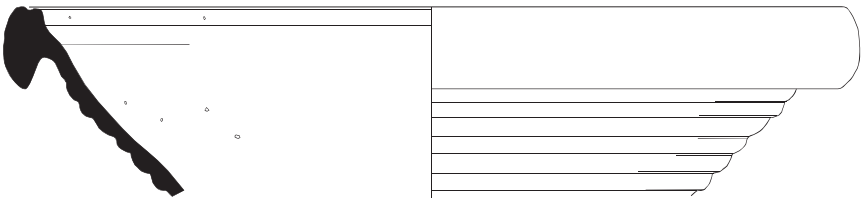

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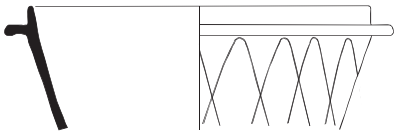

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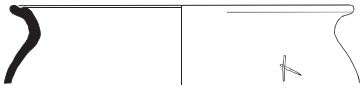

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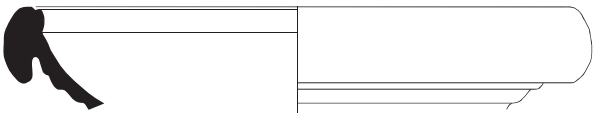

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Fig. 33: Romano-British pottery
(*Drawn by Mark Corney*)

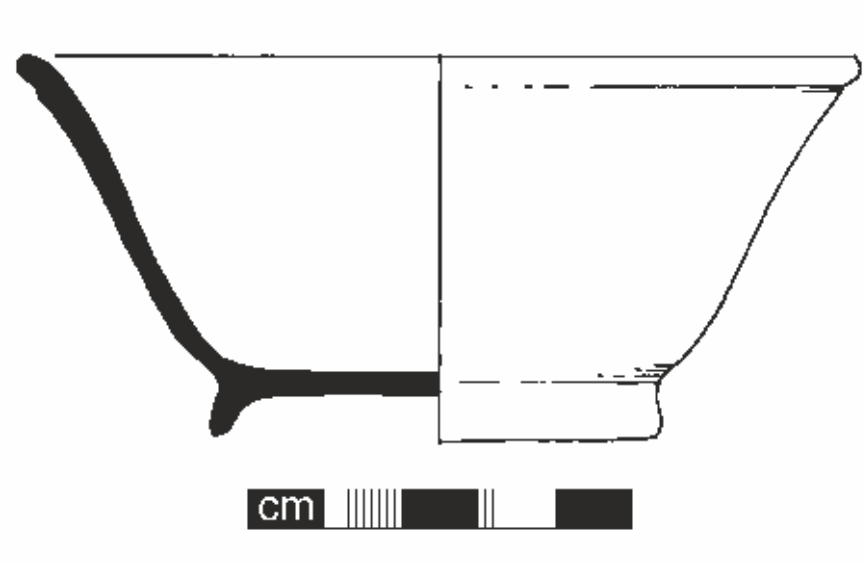

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Fig. 34: Romano-British glass vessel (*Drawn by Liz Govier*)

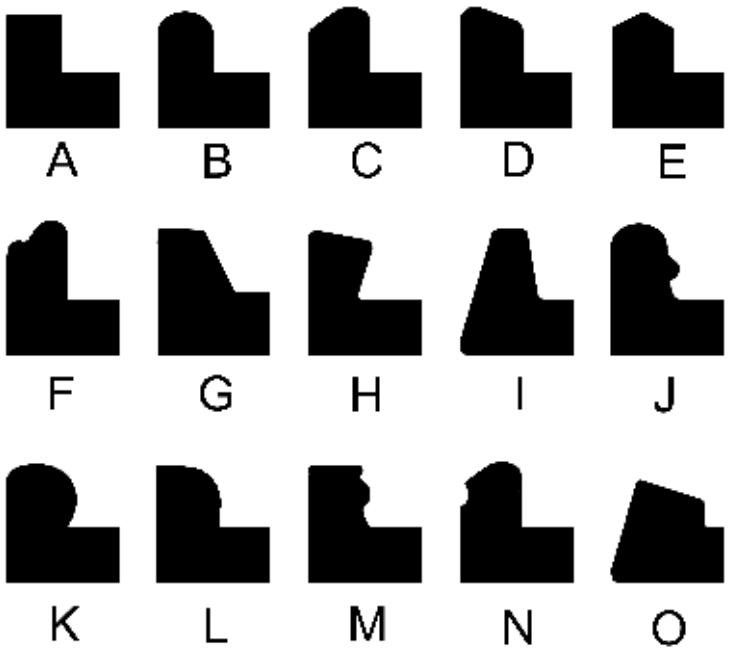

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Fig. 35: Romano-British *tegulae* flange profile categories (*Drawn by Naomi Payne*)

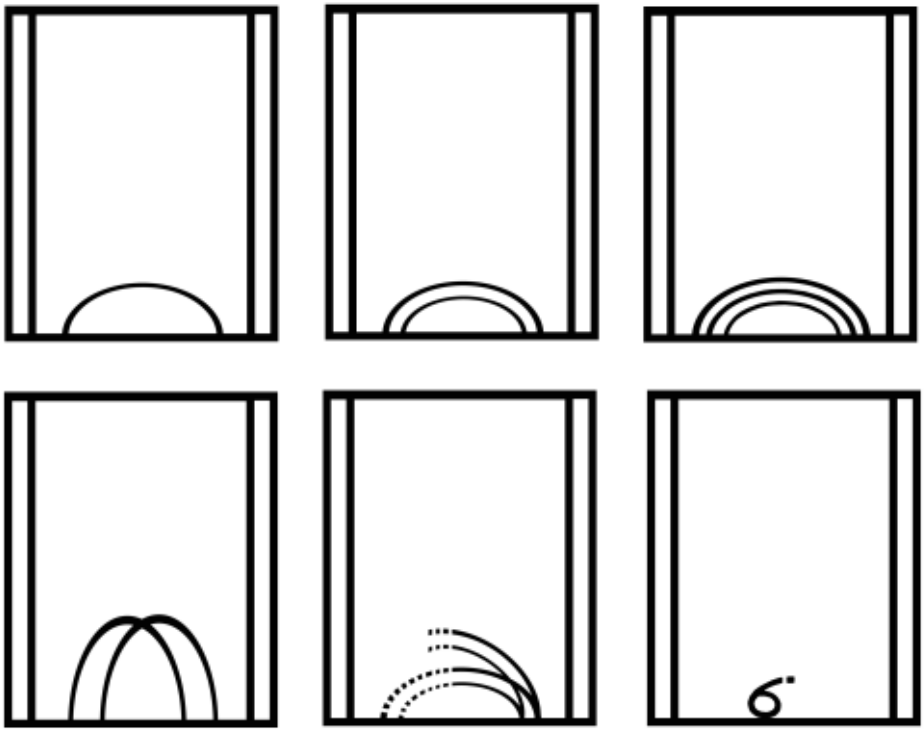

Fig. 36: Romano-British *tegulae* fingertip signature marks (*Drawn by Naomi Payne*)

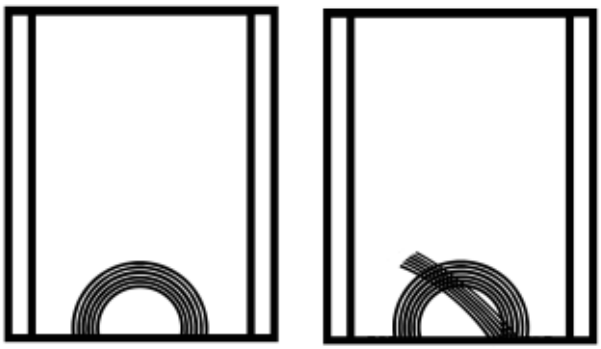

Fig. 37: Romano-British *tegulae* combed signature marks (*Drawn by Naomi Payne*)

Plate 1: General view of excavation area 1, work in progress, looking southwest

Plate 2: General view of excavation area 3, work in progress, looking south, with area 1 in the foreground

Plate 3: Iron Age ring gully F307 (Structure 1), looking northeast (2 x 2m scales)

Plate 4: General view of ditches F107 and F108, looking northwest (2 x 2m scales)

Plate 5: Southeast-facing section of ditch F108 (2m, 1 x 1m scales)

Plate 6: Romano-British possible post trench foundations (F1015 and F1018), looking south (2 x 2m scales)

Plate 7: Romano-British possible post trench foundations (Structure 2), looking north (1m scale)

Plate 8: Romano-British building (Structure 3), work in progress, looking northwest

Plate 9: Romano-British building (Structure 3), looking south (2 x 2m scales)

Plate 10: Romano-British building (Structure 3), phase I foundation, looking south (0.4m scale)

Plate 11: Romano-British stone ovens F546 and F553, during excavation, looking east

Plate 12: Romano-British stone ovens F546 and F553, fully excavated, looking southeast (1m scale)

Plate 13: Romano-British furnace room (Structure 4), work in progress

Plate 14: Romano-British cess pit F1297 (2m scale)

Plate 15: Romano-British lead working pit F1427 (0.2m scale)

Plate 16: Romano-British oven F1140 (1m scale)

Plate 17: Romano-British building (Structure 3) demolition deposits, looking southeast (2 x 2m scales)

Plate 18: Romano-British phase 3b, part of enclosure formed by posthole group 1, looking southwest (2 x 2m scales)

Plate 19: Roman finger ring, Object 30

Plate 20: Fragment of Roman finger ring, Object 5

Plate 21: Roman strip bracelet fragment, Object 16

Plate 22: Roman copper alloy T-shaped brooch, Object 23

Plate 23: Roman copper alloy box or drawer fitting, Object 10

Plate 24: Roman iron gridiron, Object 21

Plate 25a: Roman polychrome bowl from fill 1401 of cess pit F1405

Plate 25b: Roman polychrome bowl from fill 1401 of cess pit F1405

Plate 26: Roman flat tile with lines scored in a grid pattern, possible gaming board

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