

Land South of the A379 Newcourt, Exeter

Archaeological Excavation Publication Report



on behalf of
IKEA Ltd

CA Project: 889010

CA Report: 18207

April 2018



MESOLITHIC AND BRONZE AGE ACTIVITY AT A SITE TO THE SOUTH OF THE A379, NEWCOURT, EXETER

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Archaeological investigations on land south of the A379, Newcourt, Exeter, identified activity of Mesolithic, Bronze Age, and post-medieval to modern date. The majority of features contained no dating evidence, but it is likely that many result from prehistoric activity on the site. Three pits, with holes dug into their bases, were identified as Mesolithic in origin, on the basis of two radiocarbon determinations from one of the pits (7050-6769 cal BC and 7036-6700 cal BC). A group of Bronze Age pottery, of 1625-1465 cal BC date, had been placed in a pit in the north-west of the site. A vessel deposited in a ditch in the south-east of the site is broadly of Middle Bronze Age date. A second ditch ran perpendicular to this ditch and was probably contemporary with it. Three round pits showing signs of burning – possibly from a domestic use such as an oven – were also revealed. Although undated, a prehistoric use is likely. Scattered across the whole excavation area were numerous pits and possible postholes; no structure or date could be ascertained for these.

INTRODUCTION

Between February 2016 and January 2017, Cotswold Archaeology (CA) carried out two evaluations (CA 2016a, 2016c), comprising 22 trenches on the retail site (CA 2016a) and two of the adjacent residential site (CA 2016c), and an archaeological strip, map and sample (SMS) excavation, for IKEA Ltd on land south of the A379, Newcourt, Exeter (centred on NGR: 295650 090738; Fig. 1).

The underlying bedrock geology of the site is mapped as Dawlish Sandstone Formation, formed 251 to 299 million years ago in the Permian Period (BGS 2016). A small area of Permian Heavitree Breccia Formation, formed in the same period, is also located in the north-western corner of the site. No superficial deposits were recorded within the site boundary, however, the natural substrate uncovered during the excavation was a red brown silty sand.

ARCHAEOLOGICAL BACKGROUND

The development site has been subject to a series of archaeological investigations, comprising a desk-based heritage assessment (JMHS 2006a), a geophysical survey (Stratascan 2006a) and a heritage statement (CA 2013). Moreover, a number of archaeological investigations have been undertaken in the area immediately surrounding the site (Figs. 1 and 5) including a geophysical survey and excavations covering the areas to the south and west (Stratascan 2006b; Gilbert 2012; Pears and Rainbird forthcoming).

Mesolithic and Neolithic

Previous archaeological investigations of the development site and the surrounding area have found limited evidence for Mesolithic activity. This includes a small assemblage of lithics of Mesolithic date, found during excavations in the area immediately to the west of the site (Gilbert 2012, 80); flint bladelets and a microburin from Hill Barton, 2.5km to the north of the site, and two microliths from a site along the route of the M5, located approximately 1.5km to the south (Jarvis 1976, 53).

Evidence for Early Neolithic, and Early to Middle Neolithic, activity has been identified at Old Rydon Lane (Pears and Rainbird, forthcoming). Investigations at the Former Royal Navy Stores Depot (RNSD) at Old Rydon Lane found an east to west aligned line of pits, of probable Neolithic origin (Pearce *et al.* 2011). This may have been associated with an arc of pits, broadly north to south-aligned and possibly part of a circular post-built monument, located to the west at Newcourt Drive (Farnell and Fairclough forthcoming). Radiocarbon dating of these features has proved problematic, but is thought to represent activity during the Middle Neolithic (WA 2014, 7). Residual Early to Middle Neolithic pottery has also been found at Hill Barton (CA 2017), and Middle Neolithic activity was identified at Digby Drive (Quinnell and Farnell 2016). Evidence for later Neolithic activity has been recorded at the RNSD site (Pearce *et al.* 2011) and the Rydon Lane Retail Park (Quinnell and Farnell 2016), and further to the south at Topsham (Jarvis and Maxfield 1975).

Bronze Age

A number of investigations in the area surrounding the site have provided evidence for Bronze Age occupation, revealing a landscape characterised by field systems and scattered farmsteads. Early Bronze Age pits, containing pottery and flint, have been found at the Digby Tesco site (Quinnell and Farnell 2016) and Newcourt Drive (Farnell and Fairclough, forthcoming). Domestic Beaker and Collared Urn pottery was recovered at Rydon Lane Retail Park, as was an undated oval enclosure (Quinnell and Farnell 2016). Part of another

possible oval enclosure, of Middle Bronze Age date, was found at St. Peter's High School, Heavitree (Quinnell and Farnell 2016), and a substantial trapezoidal enclosure, with a post-built structure within, at Newcourt Way (Gilbert 2012). Ring ditches of Early to Middle Bronze Age date have been recorded at a number of sites in the area, although only one, at Digby Drive, was positively identified as a funerary monument. A ring ditch, thought to represent a barrow, was located to the immediate south-east of the present site (Pears and Rainbird forthcoming). Field systems of Bronze Age date have been identified at most of the sites in this area, including Newcourt Drive (Pearce *et al* 2011), Old Rydon Lane, the RSND site and the Digby sites.

Iron Age

There is limited evidence for Iron Age activity in the area, and none for the earlier part of the period. A Middle Iron Age settlement, represented by the ring gullies of four structures, and a number of pits, was found at Clyst Heath School (Quinnell and Farnell 2016). Three ovens of Middle Iron Age date were recorded at Digby Site 5 (Quinnell and Farnell 2016, 95). A roundhouse of Middle to Late Iron Age date has also been identified at the Newcourt Drive site (Farnell and Fairclough forthcoming). Two pits, found at the Old Rydon Lane site, are of possible Late Iron Age/Roman date (Pears and Rainbird forthcoming).

Roman and post-Roman

Known Roman activity in the area is mainly focused around the road leading from Exeter to the port at Topsham (c. 1.5km south of the present site). This includes recently identified evidence for a stone footed building and timber storehouses (Farnell and Payne 2016; Garland and Orellana forthcoming). A roundhouse, posthole structures and two sub-rectangular ditched enclosures have been found at Hill Barton, (CA 2017). Limited evidence for activity in this period was also found at the Digby sites, with a single ditch of 2nd century date (Quinnell and Farnell 2016, 164).

The area of the site appears to have remained in agricultural use throughout the medieval and post-medieval periods.

RESULTS

Archaeological features were identified across the site, but predominantly in the western and southern area, and included ditches, pits and postholes (Fig. 2). The features recorded were assigned to periods based on dates of recovered artefacts, radiocarbon dating and on the spatial relationships of undated features to those containing dated artefacts. Analysis has

indicated three distinguishable phases of activity: Mesolithic (7050-6750 BC), later Early Bronze Age to early Middle Bronze Age (1600-1450 BC) and post-medieval/modern (c. 1539- present). Some features remained unphased, but are likely to be of prehistoric date.

Geology

The natural geology comprised a brown orange silty sand, with frequent bands/patches of stone and gravel. In the southern extension of the site, the natural substrate (3004) was generally exposed 0.6m below ground level (bgl). It was sealed by 0.3m of sandy silt subsoil (3003), which was overlain by 0.3m of plough soil (3002). In the western field, the natural substrate was generally exposed 0.5–1.5m bpgl. The natural substrate in the western field was sealed by 0.1m–0.3m of sandy silt subsoil, which was in turn covered by a layer of compact sandy silt topsoil (3000), generally 0.2-0.3m thick.

Tree-throw holes

Sixteen features were found scattered across the western part of the site and were identified as tree-throw holes on the basis of their irregular form. They were concentrated in the northwest and southern part of the site. No dating evidence was found within these features except for a single tree-throw hole, which contained a struck flint that was probably residual. There were no stratigraphic relationships between these or any other features to demonstrate their date.

Mesolithic

Three substantial, roughly circular pits were found (Figs 3 and 4). Pit 3205 lay in the southeast of the site, 3327 about 70m to the west and 3252 around 20m northwest of that. All were similar in form being round with moderate to steep sloping sides and a slightly concave base. All three also had a round hole (possibly a post hole) cut into their base – 3416, 3421 and 3451 respectively. None contained artefactual material but radiocarbon dating of one, 3327, indicated a Mesolithic date for the features.

Pit 3205 was substantially larger than the other pits being 2.97m wide and 1.3m deep, compared to 3252: 2.0m wide, 0.95m deep, and 3327: 1.9m wide, 0.93m deep. The holes in the base of 3205 and 3421 were both 0.3m in diameter, 3205 was 0.45m deep and 3421 was 0.35m deep; 3451 was 0.18m in diameter and 0.36m deep. These holes had near vertical sides and slightly concave to flat bases. The fills of all three pits largely took the form of tipping deposits. Some may have been the product of erosion but others are more substantial and likely to have been the result of deliberate in-filling – especially given the presence of fairly substantial quantities of charcoal in the layers.

The holes in the base of the pits had single, light grey sandy fills. These were sealed by the earliest layers within the pits themselves. The exception to this occurred within pit 3205 where the inner hole 3416 cut 3206, the lowest fill of the pit. This layer was a thin deposit of natural, likely to have been eroded from the edge of the pit. Such a layer could have formed almost immediately after the pit was dug into the fairly soft silt-sand substrate. If these central holes did hold posts it seems likely that they were installed soon after the pits were dug but removed before they were filled as little trace of them can be seen in the layers within the pits.

In pit 3205, fills 3206, 3418 and 3419 all appeared to be areas of redeposited natural against the eastern edge of the pit. Secondary fills 3207, 3208, 3209, 3210, 3420 and 3211/3212 were a yellowish brown to grey sandy silt with occasional charcoal flecks. A recut was made in the centre of this pit (3213), after these deposits had accumulated. The three layers within the recut were darker in colour than the earlier fills: the lowest, 3215, was a dark brown sandy clay, this was overlain by two fills (3215, 3216) of yellowish brown to dark brown sandy silt.

Pit 3327 contained four fills. The primary deposit (3326) was a fairly clean light brown grey sandy silt with few stones and very little charcoal. The excavator noted a possible shadow from a post but this was not clear. The overlying fill (3325) was a light grey brown sandy silt with common inclusions of charcoal. Radiocarbon dating of samples of alder/hazel charcoal, and oak charcoal, have provided dates of 7050-6769 cal BC (SUERC-74051) and 7036-6700 cal BC (SUERC-74972) respectively (Cobain, below). Overlying fill 3324 was similar in colour and texture but with less charcoal. The uppermost fill, 3323, was more mixed in colour, with buff-coloured patches noted. The circular feature cut into the base of the pit, 3421, was filled with a mid grey sandy silt with sparse to moderate charcoal in the upper part of the fill (3422).

The lowest fill of pit 3525 extended up against the northern side of the pit and comprised a grey to yellowish brown sandy silt. Overlying fill 3250 was similar but also contained charcoal fragments; this was in turn covered by fill 3249. The pit may then have been recut, and filled by a further four deposits (3248, 3247, 3246 and 3245), all a light yellowish brown to grey brown sandy silt. Feature 3415, dug into the base of the pit appeared to have been contemporary with the pit. It contained a single fill (3414) of pale grey sandy clay.

Later Early Bronze Age to early Middle Bronze Age (1600-1450 BC)

Two features were positively identified as Bronze Age in date - pit 3011 (Fig. 1, inset) and ditch 1. A third feature, ditch 2, did not produce any dating evidence but is likely to have been contemporary with ditch 1 (Fig. 2).

Pit 3011 was isolated from any other significant features or structures. It was rectangular in plan, with rounded corners, 1.35m long and 0.65m wide. It was very shallow, just 0.08mm, indicating that this feature had probably been truncated by ploughing. Its fill contained 400 sherds (9345g) of Trevisker-style pottery, from two vessels, together making up approximately 20% of the pit's fill (Jones, below). A carbonised bean (*Vicia faba*), found in the fabric of the rim of one of the vessels, provided a radiocarbon date of 1625-1465 cal BC (SUERC-74052) for the manufacture of the pottery (Cobain, below).

Ditch 1 ran southwest to northeast across the south-eastern part of the excavation area. It was initially encountered during CA's earlier evaluation of the site (CA 2016a), with dating evidence provided by a group of pottery (183 sherds, 1,790g from intervention 1105), comprising large sherds from a single vessel, decorated with a band of fingernail impressions. The form is indicative of a Middle Bronze Age date (Quinnell 2016b, 16). Geophysical survey had shown that the ditch continued beyond the limit of excavation to the northeast so three further trenches were dug, demonstrating that it extended beyond the limit identified as a geophysical anomaly. The entirety of ditch 1 within the SMS area was excavated but produced only a single flint flake. The ditch varied from 0.54-1.6m in width and was 0.17-0.9m deep. It was notably narrower and more shallow toward its southern end, probably as a consequence of truncation from ploughing. The ditch had moderately sloping sides and a flat or gently concave base; it was filled by a grey- or red-brown silt sand. It is best interpreted as the boundary of a field or some other extensive land division rather than an enclosure. Ditch 1 cut through a single, undated, pit (1103).

A ditch of similar proportions, shape and fill (ditch 2) ran across the southernmost area of the site nearly perpendicular to ditch 1. It was undated but its spatial relationship to ditch 1 suggests that the features were contemporary. Ditch 2 ran northwest to southeast, a length of c.20m was exposed between the limits of excavation. Toward its northwest end it was 0.54m wide and 0.17m deep, becoming wider (0.98m) and deeper (0.35m) toward the southeast. The difference is probably the result of truncation by ploughing to the northwest. Ditch 2 was similar in shape and proportions to ditch 1 and had a comparable, brown silt sand fill. Unfortunately the point where these features would have converged (assuming they continued to run straight) lies under the end of a modern roadway. It would also probably

have been truncated by the post-medieval boundary ditch running across the site. Therefore it is not possible to ascertain the relationship between ditches 1 and 2 although their similarity in form and fill suggests they are part of the same system.

Undated, but likely to have been prehistoric (10,000 BC – AD 43)

In the southeast of the site three pits were revealed (3187, 3192 and 3348) lying roughly 10m apart in a north-south line (Fig. 3). All were round, had sides that were near vertical (in the case of 3192 slightly undercut) and near flat, slightly irregular bases. The bases of all of them showed signs of being heat affected – the natural substrate being a dark red, orange or purple colour and somewhat hardened. The lower fills of these pits were also similar – a dark, charcoal-rich layer over a thin, light-grey deposit. Only one, 3192, contained any finds – a single flint flake and a small fragment (8g) of iron slag. The pits are therefore undated, but probably result from prehistoric activity at the site. The iron slag suggests an Iron Age, or later date, but no firm conclusions may be drawn from such a small piece.

Pit 3192 was the largest, measuring 1.3m in diameter and 0.52m deep. Pits 3187 and 3348 were similar in size, being 1.1m and 1.0m across and 0.35m and 0.28m deep respectively. As well as being larger 3192 also showed more complexity. In the northeast part of its base lay a layer of light grey sandy ashy material overlain by deposits of hardened, heat-affected redeposited natural, covered by an ashy deposit. In the northwest of the pit, an arc of four stakeholes ran across the base of the feature. These were small features, 0.06-0.11m across at their top, tapering down to bases 0.04-0.13m deep. They had dark, brown-grey fills that were sealed by the lowest fill of the pit in this area and of very similar colour and texture to the fills of the stakeholes (a dark brownish grey silty sand, becoming a little more sandy in the stakeholes), suggesting that the pit fill was laid down after the removal of the stakes. This was overlain by a mid brownish grey silty sand with occasional flat stones, 0.1-0.15m in size, some of which appeared to have been placed at the sides of the pit. Two large stones were also found in the overlying fill. The feature bears some similarity to a Middle Iron Age oven from Digby Drive (Digby Site 5) but the Digby feature contained large quantities of burnt clay, including a clay lining (Quinnell and Farnell 2016, 95).

The base of pit 3348 also appeared to have been heat-affected. The lowest fill was an ashy deposit, overlain by a layer with frequent charcoal inclusions. The quantity of charcoal decreased in the upper fills. Pit 3187 contained a series of four sandy fills, with occasional charcoal fragments in one.

Each pit was also accompanied by a post hole (or in the case of 3187 a pair of post holes directly next to each other). These all lay 2-3m away from the pit and may have been related to the pits. These varied between 0.20- 0.33m in diameter and 0.1-0.33m deep.

The vast majority of other features across the site were small pits (under 1.0m across and 0.4m deep) or possible post holes with concave bases and slightly irregular forms. Many showed signs of bioturbation from roots and burrowing animals. Almost all had single fills of grey brown sand silt and produced no finds. There were a few larger pits but their form and fill was similar. These features were more common across the west and south of the site but no particular pattern could be discerned. Although some small clusters of these features were present none formed coherent shapes that might be interpreted as structures.

Post-medieval and Modern (1540-Present)

Running northwest to southeast across the southern part of the site were a pair of ditches clearly related to boundaries that have only recently been removed as part of development in the area. The fills contained modern finds and the ditches are part of relatively modern field systems. Occasional postholes adjacent to these were also shown to be modern. Scattered across the site were several pits that, judging by their shape and/or fills, were evidently the product of modern waste burial or geotechnical investigations.

THE FINDS

Pottery

Grace Perpetua Jones with Henrietta Quinnell

Pottery amounting to 600 sherds (11,449g) was recovered, including 128 sherds (333g) from bulk soil samples. The assemblage is of earlier Bronze Age (583 sherds, 11,135g) and post-medieval to modern (17 sherds, 314g) date. It has been fully recorded according to the Guidelines of the Prehistoric Ceramics Research Group (2010). The Bronze Age pottery derived from just two features – ditch 1 (evaluation trench 11) and pit 3011. The more recent pottery was all from the topsoil.



Bronze Age pottery

Ditch 1105 – Henrietta Quinnell

A total of 183 sherds (1,790 g) of pottery was recovered from deposit 1106 (ditch 1105, trench 11). This pottery includes large joining sherds and represents the larger part of a single vessel (0.52 EVEs). Portions of the rim/shoulder and base of the vessel are present and it seems likely that the vessel was deposited substantially intact. The sherd surfaces are well preserved and some sherds feature internal carbonaceous residues and (external) sooting, consistent with use for cooking.

The vessel is of jar proportions, with narrowing neck, slightly everted rim (internal diameter 200mm) and well-made, flattened rim top. Decoration is limited to a row of fingernail impressions which, unusually, is discontinuous, being limited to one area of the vessel's neck (Fig. 6.1). The form of this vessel is typical of Middle Bronze Age (1500 BC – 1100 BC) Trevisker styles relatively well-known from Devon (Laidlaw and Mephram 1999, fig. 58; Quinnell 2014, fig. 2.40). The fabric utilised for this vessel is characterised by common, moderately coarse (1-3mm) rock inclusions and sparse quartz, fired to a patch red-brown/grey. Provisionally, it is identified as of Exeter Volcanic fabric, a type with known Middle Bronze Age associations in the area (*ibid.*).

Pit 3011 – Grace Perpetua Jones

A total of 272 sherds of pottery, weighing 9012g, were hand recovered from pit 3011. A further 128 sherds (333g) were removed from a bulk soil sample of the single fill of this pit. The material is in poor condition, despite a mean sherd weight of 19.1g, possibly a result of a relatively low firing temperature. All sherds are in a soft, silty-textured, rock-gritted fabric, described below (Quinn). The sherds are of a similar thickness (11-13mm) and include rim, body and base fragments. Unfortunately the upper part of the pit had been truncated, probably by ploughing, leaving only the lower 80mm of this feature intact. Attempts to reconstruct the remaining sherds suggest that two vessels are present.

One is a large jar of biconical profile, with internally and externally expanded rim; the rim top sits flat. It is 320mm in diameter and just over one third was recovered (37%). The upper part of the vessel is decorated with double cord impressions typical of the Trevisker Ware ceramic tradition, but its application to this pot was rather irregular. Two parallel lines of impressed cord are present immediately below the rim; beneath these are horizontal running

chevrons, again cord-impressed, bound by another horizontal line of cord. These motifs are paralleled at the type-site of Trevisker, Cornwall (ApSimon and Greenfield 1972, fig. 16, 30), however the potter at Exeter also appears to have applied a second zone of decoration below this, seemingly using a combination of impressed cord and incised lines to create a decorative panel, the incised lines possibly created with a small twig or similar; this was then defined by a horizontal cordon. It was not possible to join the two zones of decoration, despite considerable effort, and their relationship could not be confirmed. The rim exterior and core are unoxidised, the internal margin and internal surface are oxidised; around the shoulder area the external firing is more irregular, with oxidised areas also evident. In terms of its classification amongst the Trevisker series, it may be assigned to Parker Pearson (1990, 10) style 1: large, decorated jars probably used for storage.

A number of joining cordoned sherds appeared to belong to a different vessel, however no rim sherds were recovered. The sherds are all oxidised on the exterior, the core and interior are unoxidised. The presence of burnt residue on the interior of the vessel indicates its use for cooking. The curvature of the vessel walls suggests that some of the cordons were vertically applied, whilst two joining sherds show the T-shaped junction of a horizontal and vertical cordon (Fig. 6.2). This style of decoration is more commonly associated with the South Lodge type of barrel urns found on sites in Dorset, of Early to Middle Bronze Age date. Cordons are also a feature of some Middle Bronze Age vessels from the Exeter area, but these tend to be horizontally applied. The range of decorative techniques demonstrated on the two vessels from pit 3011 suggest the absorption of influences from the Cornish Trevisker tradition to the west, and the Deverel Rimbury tradition of Dorset to the east, a phenomenon noted by other researchers in this area (Raymond 2012; Quinnell 2016a). Furthermore, Raymond (2012, 79) suggests that 'assimilated ideas were also being used to produce a distinctive and individual repertoire of ceramic styles'. The crudeness of the execution of the decoration on the pots from the present site suggests the potter may not have been particularly experienced in the application of such motifs.

A single base was present, represented by 16 sherds (1189g). It is thick (20mm) with a 20-22mm wide footring around part of the underside, 10mm thick in parts but thinning to nothing, possibly through wear but there was little evidence of this (Fig. 6.3).

The presence of a charred bean within the fabric of one of the rim sherds provided a radiocarbon date of 1625-1465 cal BC (95.4% probability, with 94.8% with the period 1625-1497; Cobain, below). This places the vessel within the accepted range for the Early Bronze Age, at a time when the presence of Trevisker-styled vessels are more commonly

encountered in funerary, rather than domestic contexts (Quinnell 2012, 156). Pit 3012 sits amongst a number of other undated pits, postholes and tree throw holes, its interpretation as domestic or funerary is therefore problematic as it cannot be directly linked to a settlement, although it may be related to settlement features revealed during other investigations in this area. It did not contain evidence of use in a funerary rite. Yet the deposition of the vessels appears to have been carried out whilst they were largely complete, but much has been since lost through truncation. The deliberate deposition of such vessels, in an area where pottery does not appear to have been in common use, is significant and is much more likely to represent a symbolic act rather than the disposal of refuse. Furthermore, Quinnell (2016a, 159) notes that the presence of pits of this period is very rare in Devon, whatever their purpose. However, across the Exeter area, this pattern of the deposition of large portions of vessels, specifically those assigned a Middle Bronze Age date, is repeated. The Middle Bronze Age vessel from ditch 1 also appears to have been relatively complete at the time of deposition. A substantial part of a large vessel (115 sherds, 10,512g) had been deposited in the terminal of a ditch at the Old Rydon Lane site, immediately to the south of the present site. It was decorated with a fingertip-impressed horizontal cord around its girth and cross ribs in its base (Raymond 2012, 76). A group of 95 sherds, weighing 1805g, was recovered from a shallow ditch at the Royal Navy Stores Depot site, located approximately 500m to the south. Here, a large (c. 400mm high and 300mm wide across the body), single vessel with girth cord was found, in a rock-gritted fabric (Quinnell with Taylor 2011, 37).

The vessels from this site, and those from the neighbouring sites, appear to represent special deposits. They may have been used to cook food during a communal feast at important times of year, or the opening/closing of a site. The general lack of everyday pottery in a range of features, and the deposition of large parts (or all) of single vessels in within a pit or part of a ditch, suggests a more ceremonial than mundane end to the life of these pots.

Petrology

Patrick Quinn

Introduction

Thin section petrographic analysis was undertaken on representative sherds from the vessels in pit 3011 (pottery record numbers – PRN – 2 and 5). The aims of this analysis were to characterise their inclusions, determine whether these were naturally occurring or added, and identify their possible sources. Details of the methodology are available in the archive.

Petrographic Characterisation

Both sherds are petrographically closely related in thin section and appear to have been made with similar raw materials and using similar paste preparation technology. They are characterised by the presence of very coarse inclusions of altered igneous rock in a red firing non-calcareous clay with medium-grained quartz and rare grog fragments. The large (max size = 5.0mm) elongate and equant, generally sub-rounded igneous inclusions appear to be some sort of altered fine-grained volcanic rock. They are iron-rich and characterised by abundant elongate laths of plagioclase feldspar and dark red and black altered phenocrysts of either pyroxene or olivine. The latter are highly altered, however, based on their euhedral shape, at least some of them may have been clinopyroxene crystals. The plagioclase feldspars are mostly altered and most show only feint signs of twinning, but are identifiable by their elongate shape. They have a random orientation within the inclusions. The inclusions are heavily altered to iron and chlorite, though some better preserved examples also exist. There is little difference in the nature of these igneous inclusions within and between the two samples analysed. The volcanic inclusions can be identified as basalt. One inclusion in sample PRN5 appears to contain a vesicle. The basalt inclusions appear to have been added as temper to the ceramics analysed, rather than being naturally occurring in the clay used to produce these samples. This can be argued on account of the moderately bimodal grain-size distribution of the samples in thin section, with the altered igneous inclusions forming a separate coarse mode from the finer quartz-dominated fraction. The source of this temper may have been a moderately well-sorted sandy deposit of altered basalt, perhaps occurring as talus below an outcrop or as a loose partially weathered residual deposit. The base clay to which the altered igneous temper was added appears to have been a red firing non-calcareous sandy clay, containing fine sand-sized, equant, well-rounded to subangular quartz grains. These latter inclusions are suspected to have been naturally occurring in the clay rather than being added as temper. In addition to these inclusions, the clay contains many small ferruginous inclusions, as well as rare polycrystalline quartz, altered feldspar and very rare, very fine muscovite mica. Both samples contain rare iron-rich textural features with fine quartz inclusions. These may likely to be natural phenomenon of the base clay. However, at least one fragment of grog temper occurs in each thin section. These contain sand-sized inclusions of basalt in a non-calcareous fabric. This suggests that crushed pottery of the same fabric as the parent vessel was most probably intentionally added to the paste. All samples contain prominent elongate voids and vughs. Some voids are associated with the basalt temper. Sample PRN2 contains an elongate void with charred organic matter. This may not signify the intentional addition of plant temper due to its rare occurrence. The moderate to low optical activity of the clay

matrix and its red colour in both samples suggests that the ceramics were moderately well-fired in an oxidising atmosphere.

Interpretation

The large inclusions that characterise the two Middle Bronze Age sherds submitted for analysis are fragments of an altered fine-grained basic igneous rock such as a basalt. These appear to have been intentionally added as particulate temper. Grog from pottery with a similar, basalt-tempered composition was added to the paste used to manufacture the sherds.

Compositionally very similar Early to Middle Bronze Age pottery sherds have been analysed by Quinn (2009) from two sites in nearby Topsham, Devon. These contain the same altered igneous temper and sandy non-calcareous base clay. The analysed Topsham sherds do not contain grog inclusions, though some have other argillaceous inclusions. The closeness of the match between the pottery of Topsham and the present site suggests that they were produced using the same raw materials and technology. Given that the sites are a little more than a mile away from each other in Exeter, it may also suggest that the pottery was produced in the same location and by the same people. Newport and Topsham are located in an area dominated by quaternary alluvial sediments and Permo-Triassic sedimentary rocks. However, several occurrences of basalt and trachyte can be found within a radius of 5 miles. Sources basalt occur to the southwest near Newton Abbot. Intrusions of dolerite (a medium grained basic igneous rock) occur on the western edge of Dartmoor associated with the granite batholith of this area. Taylor (2011) described the fabric of Grooved Ware discovered in a pit alignment at Old Rydon Lane, Exeter as containing igneous temper derived from nearby Permian lavas and reworked quartz from Permian sandstone. This seems to broadly match the fabric of the present site and Topsham sherds, characterised in thin section in this report and Quinn (2009). The composition of earlier prehistoric ceramics from southwest England is fairly well known (see Morris and Woodward, 2003 for a summary). Parker-Pearson (1990) noted that Trevisker pottery in Devon had a different composition from the gabbroic fabric found within Cornwall. He found two main fabrics in Devon, one with abundant 'greenstone' inclusions added as temper to a granite-derived clay with quartz and feldspar and the other with rounded quartz grains and inclusions of dolerite and spillite. From his description, these two fabrics are not dissimilar from the composition of the ceramics analysed here. Greenstone is a loose term for any slightly altered basic igneous rock and thus could be equivalent to the basalt in the present samples. Spillite is another form of altered basaltic rock which contains chlorite and could therefore also match the temper encountered in this report. The exact difference between the igneous inclusions

in the two fabrics proposed by Parker-Pearson are not clear and in fact he refers to them both as 'greenstone fabrics' at one point in his description of the Trevisker pottery of Devon (Parker Pearson 1990, 10). He found greenstone tempered Trevisker pottery at several sites in Devon both on the coast and inland, including Ash Hole, Kent's Cavern, Dean Moor, Berry Field, Yes Tor Bottom and Raddick Hill and greenstone and rounded quartz pottery at numerous additional sites within Dartmoor (see Parker-Pearson 1990, fig. 9, p. 17). Another relevant account of earlier prehistoric ceramics containing altered igneous material is the study of Tomalin (1982) at Shaugh Moor on southwest Dartmoor. Here a biconical urn assemblage was characterised by spillite and quartz sandstone, which "would have been obtained very near at hand" (Morris and Woodward, 2003, 285). Neither Parker-Pearson (1990) nor Tomalin (1982) identified the exact sources of greenstone and/or spillite in the pottery that they analysed. However, Parker-Pearson (1990, fig. 9, p. 17 and fig. 11, p. 19) indicates several possible sources (presumably outcrops of basic igneous rock) within Dartmoor and to the south, including some of the occurrences noted in this study, and Tomalin (1982, fig. 15, p. 236) notes the occurrence of spillitic lava further to the west. The occurrence of basalt close very close to Exeter suggests that the ceramics from the present site and nearby Topsham may have been locally produced. In this case the source of the base clay to which basalt temper was added could be the alluvium of the river Exe or a clay-rich deposit deriving from the sedimentary geology of the Exeter area. However, the ceramics could also have come from another more distant source in Devon. It is not possible from the brief written descriptions of Parker-Pearson (1990) and Tomalin (1982) to say whether the ceramics originate from the same source. Indeed, basic igneous rocks occur in many parts of Devon and, as Parker-Pearson (1990, 18) writes, "we do not know whether they [the two 'greenstone' fabrics he found] were both produced from a single clay source or from many different clay outcrops". Igneous rock was used as a source of temper by prehistoric potters in many parts of Britain (e.g. Freestone and Middleton 1991; Freestone 1992; Wardle 1991; Cootes and Quinn 2017). It has a similar thermal expansion coefficient to fired ceramic when heated due to the presence of abundant feldspars (Rye 1976), making it an ideal filler for coarseware cooking vessels (Freestone 1992; Sheridan 1997). However, its presence within Urns and Beakers seem to suggest that the use of this temper type may also have served non-utilitarian functions (Cootes and Quinn 2017). It could have been imbued with symbolic meaning that cannot be understood in terms of its physical or behavioural characteristics (Woodward 2008). Such an idea has been proposed for the production of Bronze Age pottery from Wales by Williams and Jenkins (1999) and the Peak District by Cootes and Quinn (2017), both of which are overwhelmingly tempered with basalt and dolerite.

Worked stone

Ruth Shaffrey

A micaceous sandstone cobble, weighing 308g, was recovered from the topsoil. It has been used as a hone on several faces so that its sub-oval cross-section is bevelled in parts. There are also a number of fine scratches; some of these may be recent damage but it is likely some represent use of the stone as a point-sharpener. Two pieces of stone (558g) from ditch 2 do not adjoin but are of the same stone type – a pink vesicular lava with quartz inclusions, which may be from the local trap, although it does not match samples in the author's reference collection very closely. It has smoothed faces and may have been used as a rubber, although the wear is not certainly man-made.

Worked flint

Katie Marsden

Eight flint flakes were recovered from the site, including one with retouch on the dorsal face from a buried topsoil layer, and another with micro-denticulation on both long edges from a tree-throw hole.

Environmental Evidence

Animal Bone

Andy Clarke

Two fragments of animal bone (39g) were recovered from post-medieval/modern ditch 3178. The animal bone was only moderately well preserved but each fragment was identifiable as a partial limb bone, a femur and a tibia, both of which were cattle (*Bos taurus*).

The plant macrofossils

Sarah F. Wyles

A total of twelve bulk soil samples were analysed from a range of pits, postholes and a ditch across the site (Table 1). Five of the samples were from Mesolithic pits and postholes, two

samples were from a later Early Bronze Age-early Middle Bronze Age ditch and pit and five samples were from pits which are undated but possibly prehistoric.

These samples were processed following standard flotation methods and a. all identifiable charred plant remains were identified following nomenclature of Stace (1997) for wild plants, and traditional nomenclature, as provided by Zohary *et al* (2012) for cereals.

Mesolithic

A fragment of *Alnus glutinosa/Corylus avellana* (alder/hazel) charcoal from fill 3325 of pit 3327 produced a radiocarbon date of 7050-6769 cal BC (7983±32 BP, SUERC-74051) and a fragment of *Quercus* (oak) charcoal from the same context was radiocarbon dated to 7036-6745 cal BC (7954±33 BP, SUERC-74972).

Fills 3250 and fill 3325 of pits 3252 and 3327 respectively produced low numbers of charred plant remains. These included a few small fragments of hazelnut shell and seeds of vetch/wild pea (*Vicia/Lathyrus* sp.) and knotgrass (*Polygonaceae*). The weed seeds are of typical grassland species and the hazelnut shell may be reflective of the exploitation of the wild food resource. No charred plant remains were recovered from pit 3205 or postholes 3241 and 3416.

Later Early Bronze Age to early Middle Bronze Age

A later Early Bronze Age to earlier Middle Bronze Age date of 1625-1465 cal BC (3275±29 BP, SUERC-74052) was obtained by radiocarbon dating a charred seed of probable celtic bean (cf. *Vicia faba*) from within the fabric of some Trevisker-style pottery from fill 3012 of pit 3011.

The small assemblages from pit 3011 and from ditch 1 included remains of hulled wheat, emmer or spelt (*Triticum dicoccum/spelta*), grain, celtic bean, vetch/wild pea, buds and monocot stem/rootlet fragments.

Celtic beans have been recorded from deposits of Neolithic and earlier Bronze Age date rarely but are observed more frequently within later Bronze Age assemblages, in particular those from coastal site (Treasure and Church 2016). Charred plant remains were also recovered in small quantities or were absent in some assemblages from Neolithic and Bronze Age contexts from previous work on sites in the Old Rydon Lane area (Pearce *et al* 2011; Wessex Archaeology 2014; Gilbert 2012; Quinnell and Farnell 2016).

Undated

Small quantities of charred plant remains were recorded from pits 3187, 3192, 3213 and 3348, while no charred plant remains were observed from pit 1103. The assemblages include seeds of vetch/wild pea, knotweeds, brambles (*Rubus* sp.) and docks (*Rumex* sp.), buds, tuber fragments and monocot stem/rootlet fragments. There is no indication of date of these features from these samples although they may be prehistoric.



Table 1. Plant macrofossils

Phase		Mesolithic					later Bronze Age - early Middle Bronze Age		Undated ?Prehistoric				
Feature type		Pits			Postholes		Ditch	Pit	Pits				
Cut		3205	3252	3327	3241	3416	1105	3011	1103	3187	3192	3213	3348
Context		3209	3250	3325	3422	3417	1106	3012	1104	3184	3193	3214	3350
Sample		12	3	5	6	11	1	1	2	7	4	13	9
Vol (L)		20	14	20	14	7	20	34	5	19	20	16	20
Flot size		60	75	150	10		15	40	50	150	40	150	200
%Roots		5	10	1	5		25	5	5	5	20	2	2
Cereals	Common Name												
<i>Triticum dicoccum/spelta</i> (grain)	emmer/spelt wheat	-	-	-	-	-	-	1	-	-	-	-	-
Other Species													
<i>Corylus avellana</i> L. (fragments)	hazelnut	-	2	2	-	-	-	-	-	-	-	-	-
Polygonaceae indet.	knotweeds	-	1	-	-	-	-	-	-	1	-	2	-
<i>Rumex sp.</i> L.	docks	-	-	-	-	-	-	-	-	1	-	-	-
<i>Rubus sp.</i>	brambles	-	-	-	-	-	-	-	-	-	1	-	-
<i>Vicia</i> L./ <i>Lathyrus</i> sp. L.	vetch/wild pea	-	5	5	-	-	-	1	-	6	-	3	-
<i>Vicia faba</i>	celtic bean	-	-	-	-	-	1	-	-	-	-	-	-
Monocot. Stem/rootlet frag		-	-	1	-	-	-	1	-	1	1	1	-
Bud		-	-	-	-	-	2	-	-	-	1	2	-
Tuber		-	-	-	-	-	-	-	-	-	1	-	1

Charcoal

Dana Challinor

Introduction

The charcoal from a series of prehistoric pits and postholes was examined; including pit 3011 which was radiocarbon dated to the later Early Bronze Age-early Middle Bronze Age and pit 3327 which was radiocarbon dated to the Mesolithic period. Several of the other features examined (pits 3205 and 3252) are likely to also be Mesolithic in date, while pits 1103, 3187, 3192, 3213 and 3348 may be associated with prehistoric activities at the site, though there was no direct dating evidence.

Methodology

Thirty charcoal fragments from each sample were identified following standard procedures, using identification keys (Hather 2000, Schweingruber 1990) and modern reference material. Observations on maturity and other features were made where possible and classification and nomenclature follow Stace 1997.

Results

The preservation of the material was variable and high levels of vitrification were recorded. Vivianite staining was noted in the sample from pit 3252, suggesting waterlain conditions. A limited range of five taxa were positively identified (Table 2): *Quercus* sp. (oak), *Betula* sp. (birch), *Corylus avellana* (hazel), *Populus/Salix* (poplar/willow) and *Cytisus/Ulex* (broom/gorse). Poor condition and small fragment size inhibited determination of maturity, but it was clear that mature oak was present in most samples, with some evidence for branch and sapwood. Sample 5 from pit 3327 contained a single fragment of *Alnus/Corylus* (identified by Sarah Cobain) dated by C14 to the Mesolithic period. The remaining charcoal in this sample appeared to be all oak or bark fragments, although there was no evidence for any Roundwood, and a piece of oak from this assemblage was also radiocarbon dated to the Mesolithic period.

Two postholes (cuts 3241 and 3416 in the base of Mesolithic pits) produced only a small amount of charcoal, which included traces of *Quercus* and *Alnus/Corylus*.

Table 2: Charcoal from pits

	Phase	Mesolithic			EBA-MBA	Undated ?prehistoric				
	Cut	3205	3327	3252	3011	1103	3192	3187	3348	3213
	Context	3209	3325	3250	3012	1104	3193	3184	3350	3214
	Sample	12	5	3	1	2	4	7	9	13
<i>Quercus</i> sp.	oak	16 (hr)	22 (h)	18 (hr)	25 (hsr)	26 (h)	10 (r)	30 (h)	30 (hs)	30 (hr)
<i>Betula</i> sp.	birch						12 (r)			
<i>Corylus avellana</i>	hazel				2					
<i>Alnus/Corylus</i>	alder/hazel	1r					1			
<i>Populus/Salix</i>	poplar/willow	5		(1)						
<i>Cytisus/Ulex</i>	broom/gorse				3r					
Indeterminate		8		11		4	7			
Bark			8							
Total		30	30	30	30	30	30	30	30	30

h=heartwood; s=sapwood; r=roundwood

Discussion

The majority of the charcoal from the pits derived from oak, including mature heartwood. The preferential use of oak is indicative of the availability of native oak-hazel woodland. Traces of other sources, including wetground (poplar/willow) and heathland (broom/gorse) are indicated. Birch is a coloniser tree, which indicates open conditions. The results from this site are similar to the charcoal assemblages assessed from Middle Bronze Age contexts at the nearby sites of Old Rydon Lane (Barnett 2014) and Former Navy Depot (Challinor 2011), although the latter included a component of hedgerow/scrub type taxa.

Radiocarbon dating

Sarah Cobain

Radiocarbon dating was undertaken in order to confirm the date of pits 3325 and pit 3011 (Table 3). The samples were analysed during July and September 2017 at Scottish Universities Environmental Research Centre (SUERC), Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow, G75 0QF, Scotland.

The uncalibrated dates are conventional radiocarbon ages. The radiocarbon ages were calibrated using the University of Oxford Radiocarbon Accelerator Unit calibration programme OxCal v4.3.2 (2017) (Bronk Ramsey 2009) using the IntCal13 curve (Reimer *et al.* 2013). The methodology employed by SUERC Radiocarbon Laboratory is outlined in Dunbar *et al.* (2016).

Table 3 Radiocarbon dating results

Feature	Lab No.	Material	$\delta^{13}\text{C}$	Radiocarbon age	Calibrated radiocarbon age 95.4% probability	Calibrated radiocarbon age 68.2% probability
Context 3325 Pit 3327	SUERC-	Charcoal <i>Alnus glutinosa/Corylus avellana</i> (alder/hazel)	-26.1‰	7983 ± 32 yr BP	7050–6769 cal BC (95.4%)	7035–6983 cal BC (20.2%) 6974–6911 cal BC (25.5%) 6885–6829 cal BC (22.5%)
Context 3325 Pit 3327	SUERC-	Charcoal Quercus (oak)	-26.2‰	7954 ± 33 yr BP	7036–6745 cal BC (89.4%) 6738–6735 cal BC (0.5%) 6728–6700 cal BC (5.4%)	7027–6932 cal BC (30.2%) 6919–6878 cal BC (14.3%) 6846–6773 cal BC (23.7%)
Context 3012 Pit 3011	SUERC-	Charred seed cf <i>Vicia faba</i> (?celtic bean)	-24.6‰	3275 ± 29 yr BP	1625–1497 cal BC (94.8%) 1470–1465 cal BC (0.6%)	1608–1582 cal BC (24.3%) 1561–1511 cal BC (43.9%)

DISCUSSION

The investigation has recorded the presence and survival of archaeological remains across the site and allowed the investigation of the evidence for past occupation. The survival and intelligibility of the site stratigraphy was good with archaeological remains having survived as negative features despite later post-medieval agricultural activities. The site stratigraphy has been analysed as far as the evidence allows and features have been dated by associated finds, radiocarbon dating, stratigraphic relationships and spatial logic where possible. Although the recovered finds assemblage recovered was limited in quantity, the excavation has identified three definite phases of activity and although the majority of the features were undated, a general 'prehistoric' date is inferred.

The discovery of three features of Mesolithic date is highly significant for this area. Previously, the only evidence for activity during this period was the presence of occasional worked flints, but none were stratified. Dating was confirmed during the current works by two radiocarbon dates of 7050–6769 cal BC and 7036–6700 cal BC) from pit 3327. The similarity between the form of pits 3327, 3205 and 3252 suggests these features were contemporary. All three had a central hole dug into their bases, one of which appeared to have been dug through the lowest layer of silting. If these holes were used to hold a post, the posts were removed prior to the infilling of the pits. The features are not spatially related, beyond being located in the southern area of the site, and their function is unknown. Small pits of possible Mesolithic date have been found at Midsomer Norton, Somerset (UCL 2005) with some evidence for Mesolithic features at Exmoor and Mendip, but such structural or occupational evidence for the period is very limited (Bell *et al.* 2015, 24). More massive postholes (1.5-2m diameter 1.3m deep) of this period were discovered at Stonehenge, and assigned a possible ceremonial function (Allen 1995).

Evidence of activity at the end of the Early Bronze Age was found in pit 3011. This pit lay somewhat isolated in the northwest of the excavation area, but around 60m to the south lies a Bronze Age enclosure and roundhouse identified by the earlier work of JMHS (Gilbert 2012, 69-72). It seems probable that the pit represents an outlier of the activity associated with this enclosure. Two vessels had been deposited in the pit, which had suffered considerable truncation, probably by ploughing, with only 0.08m vertical survival. At least one vessel was probably complete at the time of deposition, with parts of the rim, body and base surviving. The second vessel was represented only by body sherds, and it was not possible to ascertain if this was the result of selective deposition of certain parts of the pot, or removal during truncation of the feature. The vessel with surviving rim displays traits of

the Trevisker pottery tradition, including the impressed cord decorative motif, yet the second vessel, with its horizontal and vertical cordons, or ribs, is more typical of the South Lodge barrel urns of Dorset. This assimilation of styles from other regions is not uncommon in Devon (Quinnell 1988) and in this particular area has been recognised in a vessel found at the nearby Old Rydon Lane site (Raymond 2012, 78-79).

Radiocarbon dating of a charred bean from within the fabric of the vessel rim from pit 3011 indicates it was made at the end of the Early Bronze Age, at a time when Trevisker-styled vessels are more commonly encountered in funerary, rather than domestic contexts (Quinnell 2012, 156). A large part of a single vessel was also found in ditch 1. The style of this vessel is in keeping with Middle Bronze Age pottery from this area; it may originate from the earlier part of the period and be broadly contemporary with the vessels in the pit. The deliberate deposition of such vessels, in an area where pottery does not appear to have been in common use, is significant and may represent a symbolic act rather than the disposal of refuse. Across the Exeter area this pattern of the deposition of large portions of vessels, specifically those assigned a Middle Bronze Age date, is repeated at Old Rydon Lane (Gilbert 2012) and the RNSD site (Pearce *et al.* 2011). The presence of burnt residue on the interior of the vessels from the pit and ditch at the present site indicate they were used as cooking vessels, perhaps as part of a communal feast at important times of year, or the opening/closing of a site. The general lack of everyday pottery in a range of features, and the deposition of large parts (or all) of single vessels in just two features, suggests a more ceremonial than mundane end to the life of these pots.

As noted above, ditch 1, orientated southwest to northeast across the eastern part of the excavation area, traversed the landscape without a nearby return or junction suggesting that it was a field boundary. Previous work to the south also shows similar ditches that have been dated to the Bronze Age (Gilbert 2012; Pears and Rainbird forthcoming; see Fig. 2 above). Therefore it seems reasonable to assume that ditch 1 was part of an extensive field system laid out around the enclosure and roundhouse lying to the west of the excavation area. Ditch 2 is possibly also part of this although its direct relationship to ditch 1 cannot be proved.

Three pits (3187, 3192 and 3348) in the southeast of the excavation area all displayed evidence of heating on their bases. Pits containing burnt deposits, some with evidence of *in situ* burning, have been found on other sites in this area, including three ovens of Middle Iron Age date from Digby Drive (Quinnell and Farnell 2016; Gilbert 2012). The larger and more complex of the three pits, 3192, had stakeholes in its base, perhaps the remains of part of a structure or windbreak. Stone slabs found placed at the sides of the pits are also likely to

derive from a structural use. The features may result from craft or industrial activity or perhaps from a domestic use as ovens. Certainly the limited evidence for the use of pottery vessels during the prehistoric period in this area is suggestive of methods of food preparation that did not involve boiling, and perhaps a greater emphasis on the use of ovens for baking. The date of these examples has not been ascertained, but a later prehistoric, perhaps Iron Age, use seems likely.

The majority of features scattered across the site are not amenable to detailed discussion since they are undated; their form, location and fills give no indication of their purpose. Some of them may be related to the Bronze Age enclosure and field system lying to the west and south of the excavation area, an impression borne out by the greater concentration of features toward those parts of the site.

The Bronze Age inhabitants seem to have carefully and purposefully deposited their ceramic vessels within boundary ditches or pits; this material may have been rare and/or carefully curated at the end of its use – hence the dearth of pottery found. Features with *in situ* burnt remains may have had a domestic use associated with food preparation. Perhaps the most significant findings of the current archaeological investigations is the identification of features of Mesolithic date, hitherto unknown in this area, and the evidence for the deposition of the Trevisker-style pottery, made at the end of the Early Bronze Age, and perhaps providing indication of a communal gathering or feast.

ACKNOWLEDGEMENTS

The excavation and post-excavation reporting was commissioned by Ikea Ltd, and the assistance of Insiyah Khushnood and her colleagues in this regard is much appreciated. Fieldwork was undertaken by Martin Gillard, assisted by Jerry Austin, George Gandham, Victoria Parsons, Parris Stubbings, Tina Tapply and Edoardo Vigo. The report illustrations were prepared by Sam O'Leary and Aleksandra Osinska. The fieldwork was managed for CA by Derek Evans and the post-excavation was managed by Nicky Garland and Grace Jones. The works were monitored by Andrew Pye, Principal Project Manager (Heritage), Exeter County Council. His advice is gratefully acknowledged. We are also grateful to AC Archaeology for sharing their forthcoming results.

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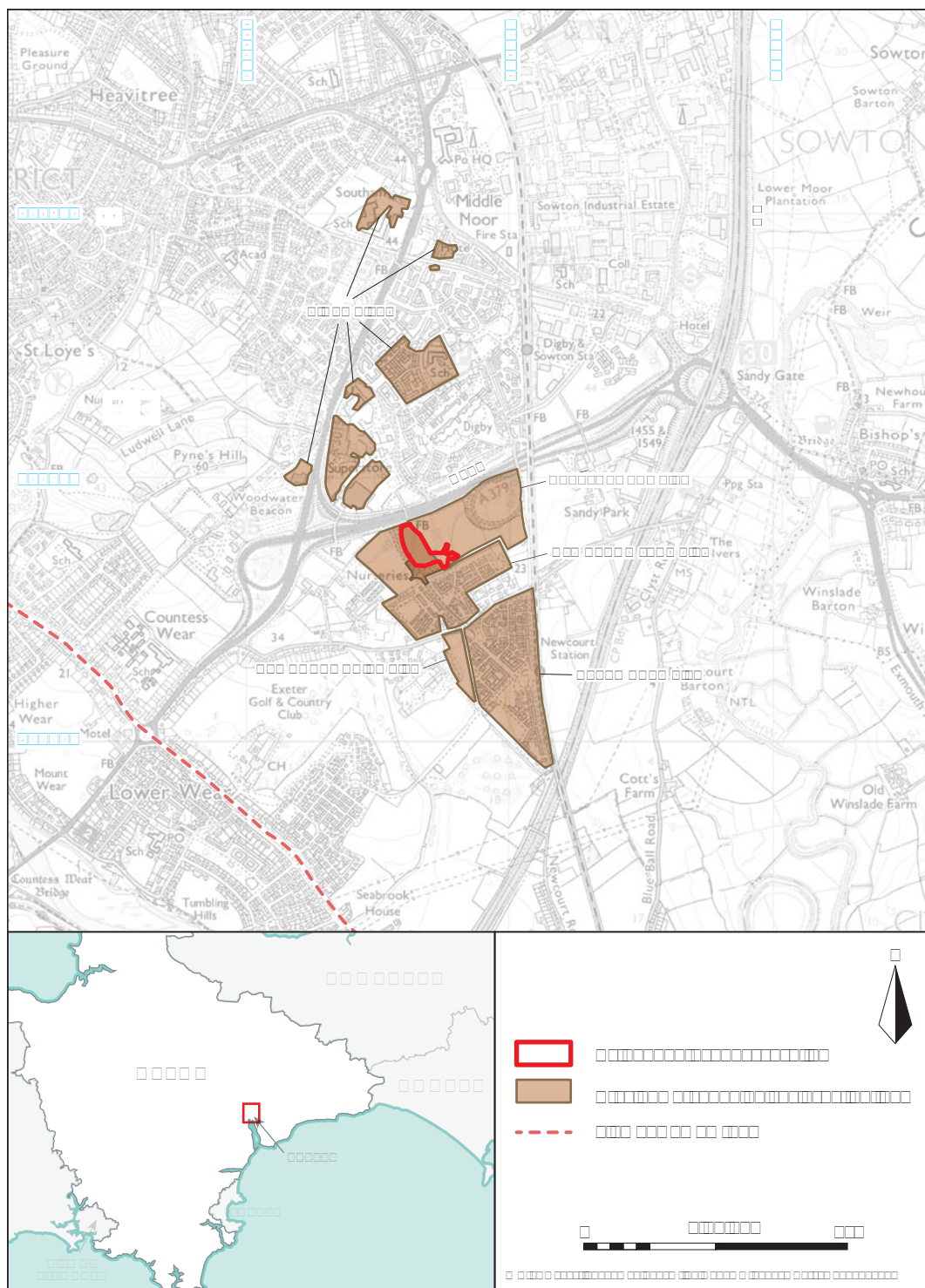
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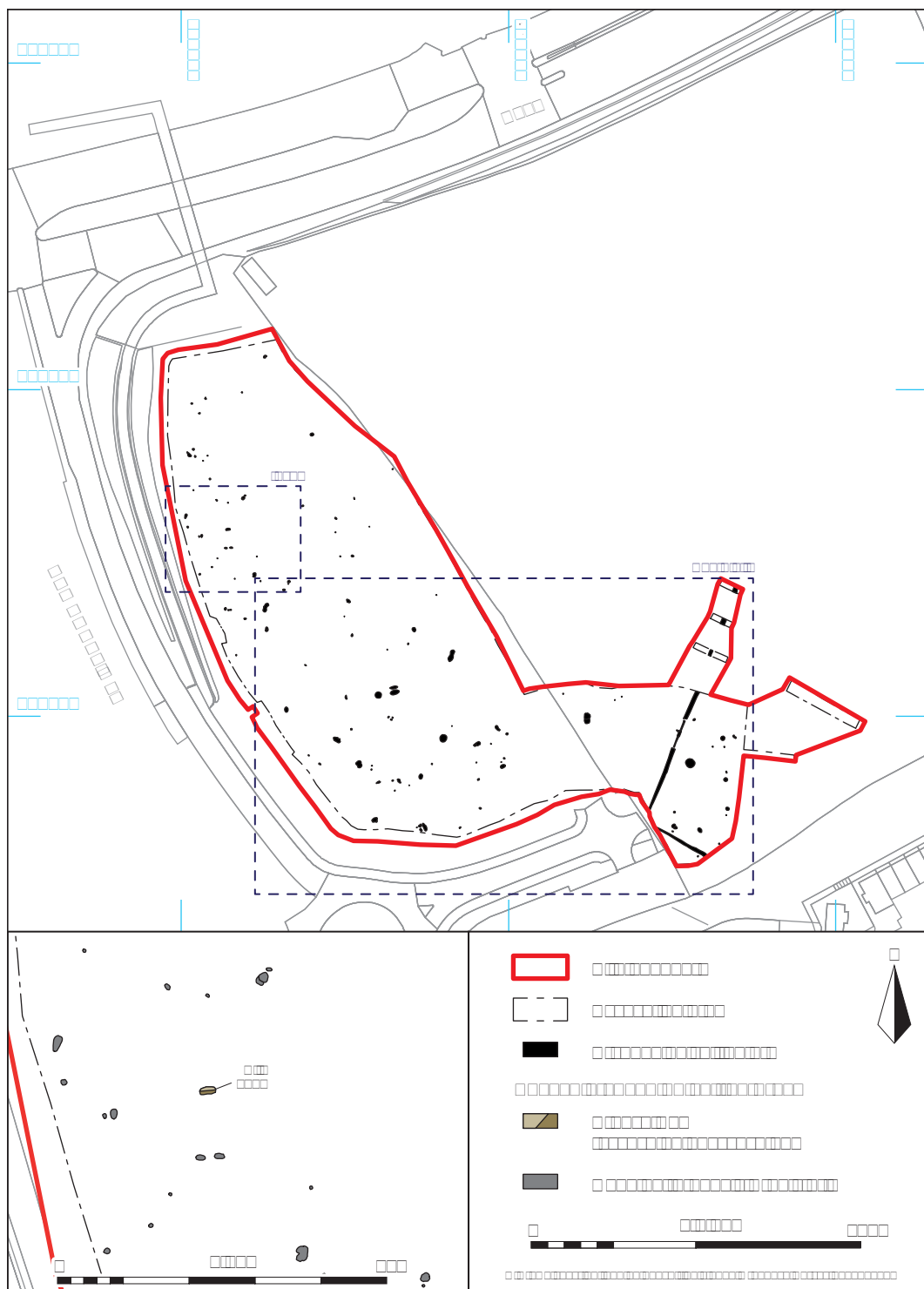
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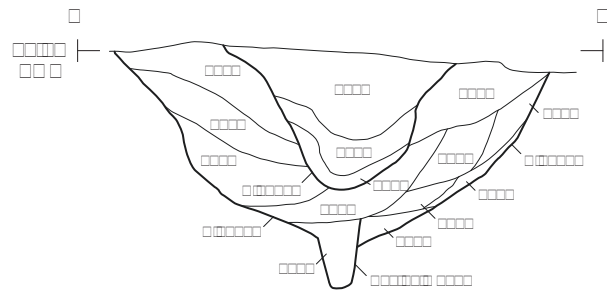
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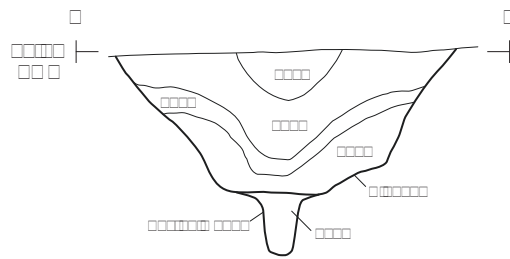


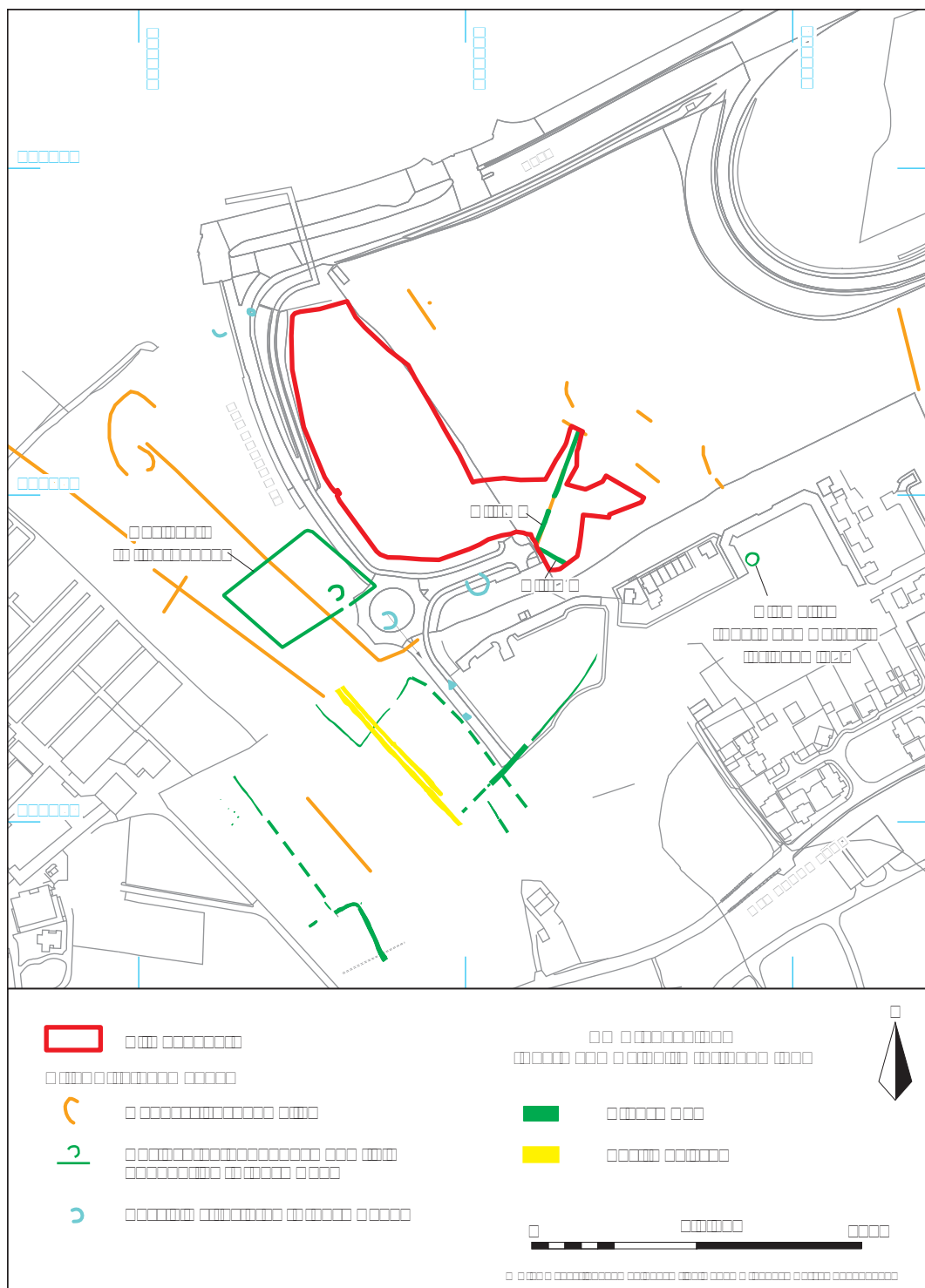


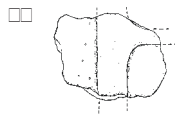
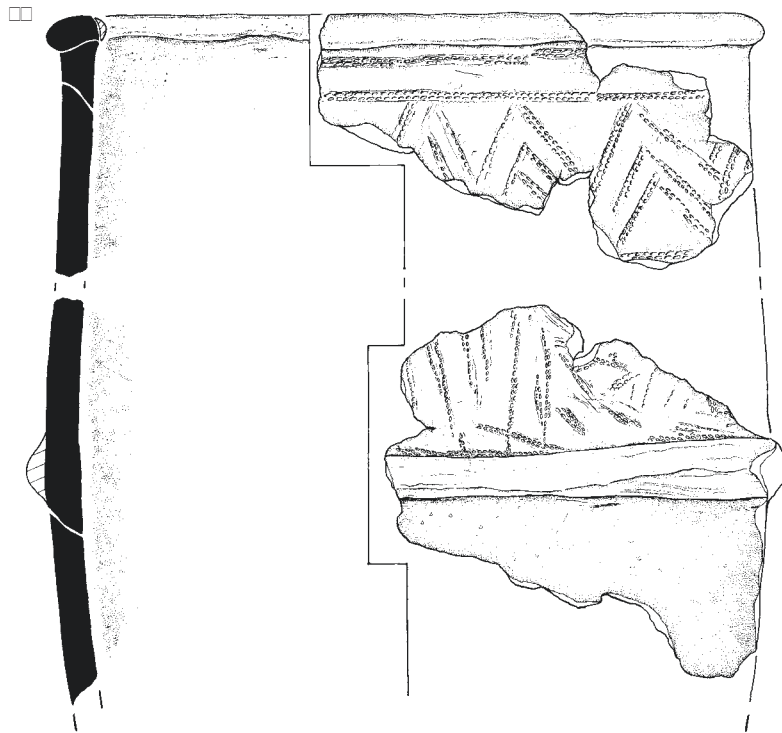
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