

TWO RING DITCH EXCAVATIONS AT WILLINGTON, DERBYSHIRE, 2014

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SUMMARY

The upcoming construction of a housing estate on the northern edge of Willington led to a programme of trial trenching, followed by two small areas of archaeological excavation. One area contained the heavily truncated remains of a hengi-form ceremonial monument, defined by two concentric ring ditches with a grave at the centre. Little evidence was found to date the monument, but it remained a focus of activity until at least the Middle Bronze Age from its origin in the Late Neolithic or Early Bronze Age. The other area was focused on a single ring ditch: the ditch itself was essentially undated, but a nearby cluster of pits contained pottery and loom weights dating to the Late Bronze Age.

HISTORY OF THE SITE

An application by Peveril Homes Ltd to build a housing estate on farmland at the northern edge of Willington (Fig. 1) led to a programme of archaeological works, the results of which are described and interpreted below. Initial exploratory work was carried out in 2012–13 by Stratascan Ltd and Oxford Archaeology North, before the developer's archaeological consultant, CgMs Ltd, commissioned Albion Archaeology in 2014 to undertake the remainder.

The development area at Etwall Road, Willington is situated on gravel terraces of the River Trent. It lies on level ground at a height of c. 48m OD, with variation of less than 1m across the site. The surrounding landscape contains widespread evidence for activity from the Early Neolithic onwards; much of this is known through aerial photography, but it has been augmented by a number of archaeological excavations, primarily at Willington Quarry. The Trent Valley Archaeological Research Committee's work there in the early 1970s, in an area c. 1.5km south-west of the Etwall Road site, identified evidence for periodic settlement between the Late Neolithic and the Saxon period, albeit with an apparent hiatus in the Bronze Age (Wheeler 1979). More recent work by the University of Leicester Archaeological Services did uncover evidence of occupation there in the Bronze Age, however, along with further remains of Neolithic activity (Beamish 2009).

Excavations by Archaeological Research Services Ltd less than 1km north-east of the development area at Mercia Marina (Fig. 1) also revealed elements of a prehistoric landscape, including the remains of Early Neolithic settlement, Early Bronze Age settlement and funerary remains, and later prehistoric linear boundaries (Brightman and Waddington 2012). An evaluation by Oxford Archaeology at Willington Power Station examined part of the Neolithic Potlock cursus monument that lies c. 1km east of the Etwall Road site, as well as revealing some possible Bronze Age ditches and an Iron Age one, alongside others that could not be dated.

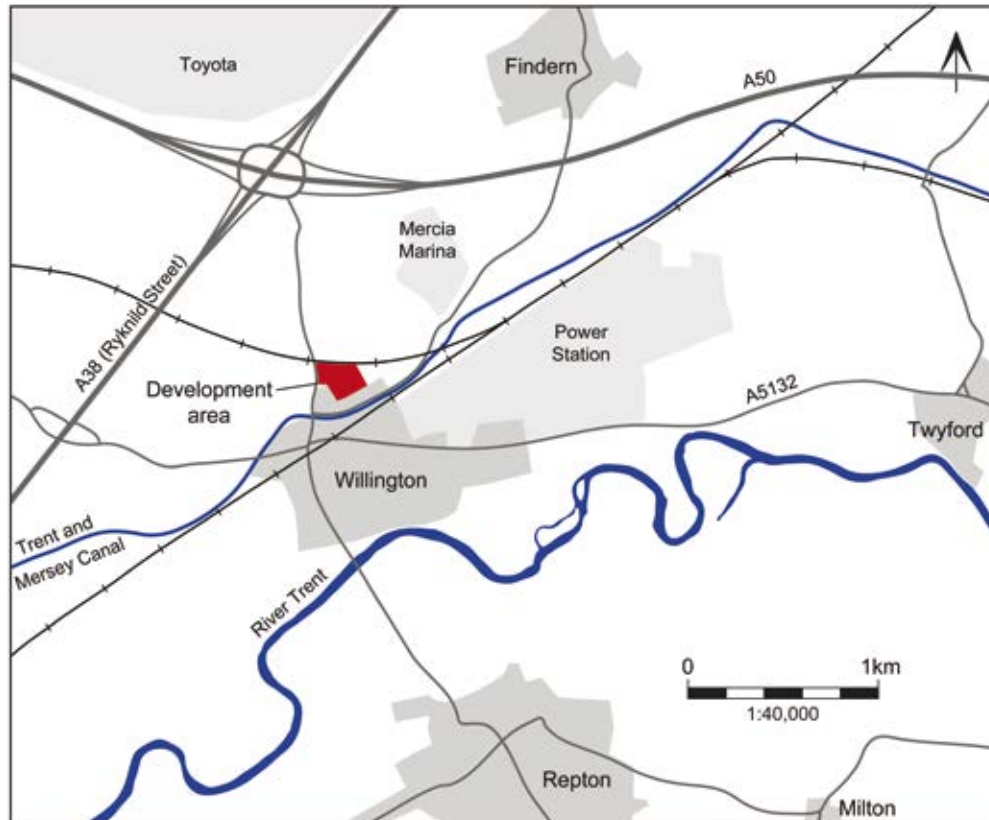


Fig. 1: Site location.

Archaeological background of the development area

The archaeological potential of the development area at Etwall Road, Willington was first realised through aerial photographs, the most recent assessment of which took place in connection with work at Willington Power Station (Air Photo Services 2004). A subsequent geophysical survey revealed an additional range of possible features (Stratascan 2012). The presence of two ring ditch monuments at the southern edge of the area was clearly visible, but numerous linear anomalies in the northern half of the area were more equivocal in nature, with some suspected to be periglacial in origin. At the request of the Development Control Archaeologist for South Derbyshire District Council, the area was subjected to an initial phase of trial trenching before planning consent was awarded, in order to characterise the two ring ditch monuments and assess whether the other potential features were archaeological or geological in origin.

The trial trenching confirmed the presence of two ring ditch monuments, albeit heavily truncated by ploughing (Oxford Archaeology North 2013). It also identified a few small ditches and pits in the northern part of the development area, but these were undated, formed no obviously coherent pattern, did not correspond with any of the crop-marks, and were

consequently assessed to have low archaeological potential. The crop-marks that had been suspected to be periglacial in origin were confirmed to be such.

Following the award of planning consent, an additional programme of trial trenching was undertaken by Albion Archaeology in order to further explore the east–west crop-mark that the initial phase of trial trenching had not managed to identify (Fig. 2). This second phase of trenches was also designed to check that no other features of significant archaeological potential were present which had not been detected by the aerial photographic or geophysical surveys. Once it had been confirmed that the two ring ditch monuments were indeed the only features present that required further mitigation, Albion Archaeology carried out an excavation in July 2014 of each of the ring ditches and their immediate surroundings, with the two areas covering 0.4ha in total. The results of these excavations are given below, along with a description of the most significant archaeological features identified by the second phase of trial trenching.

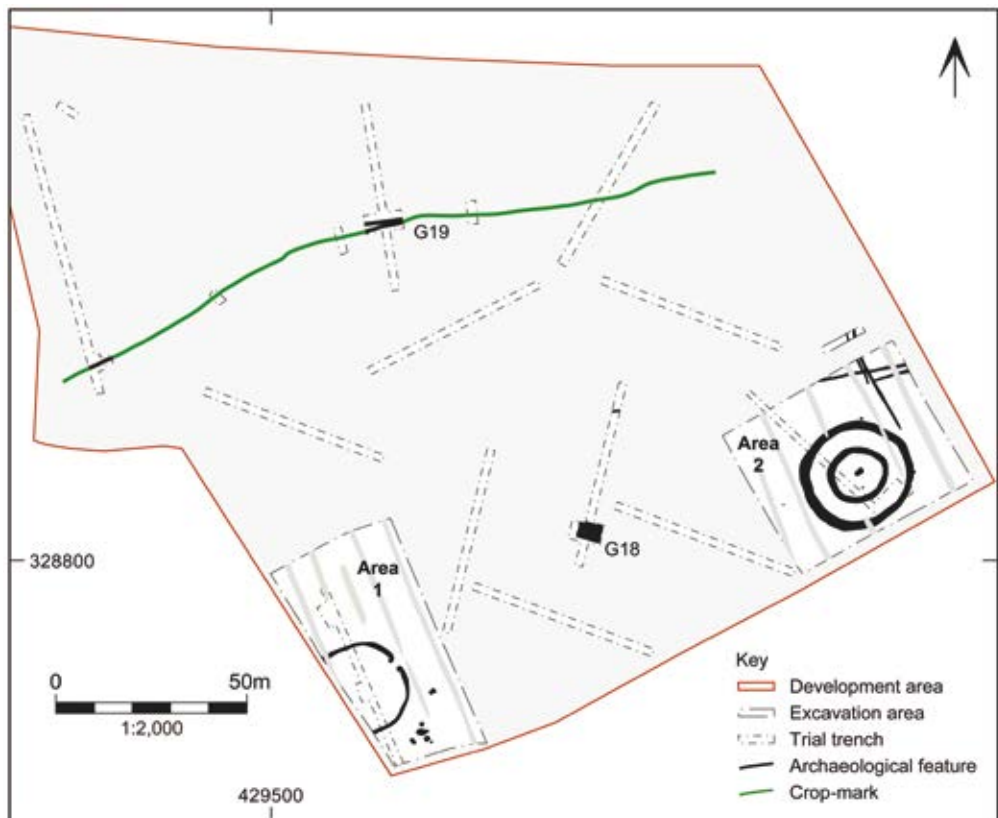


Fig. 2: Excavated archaeological features within the development area.

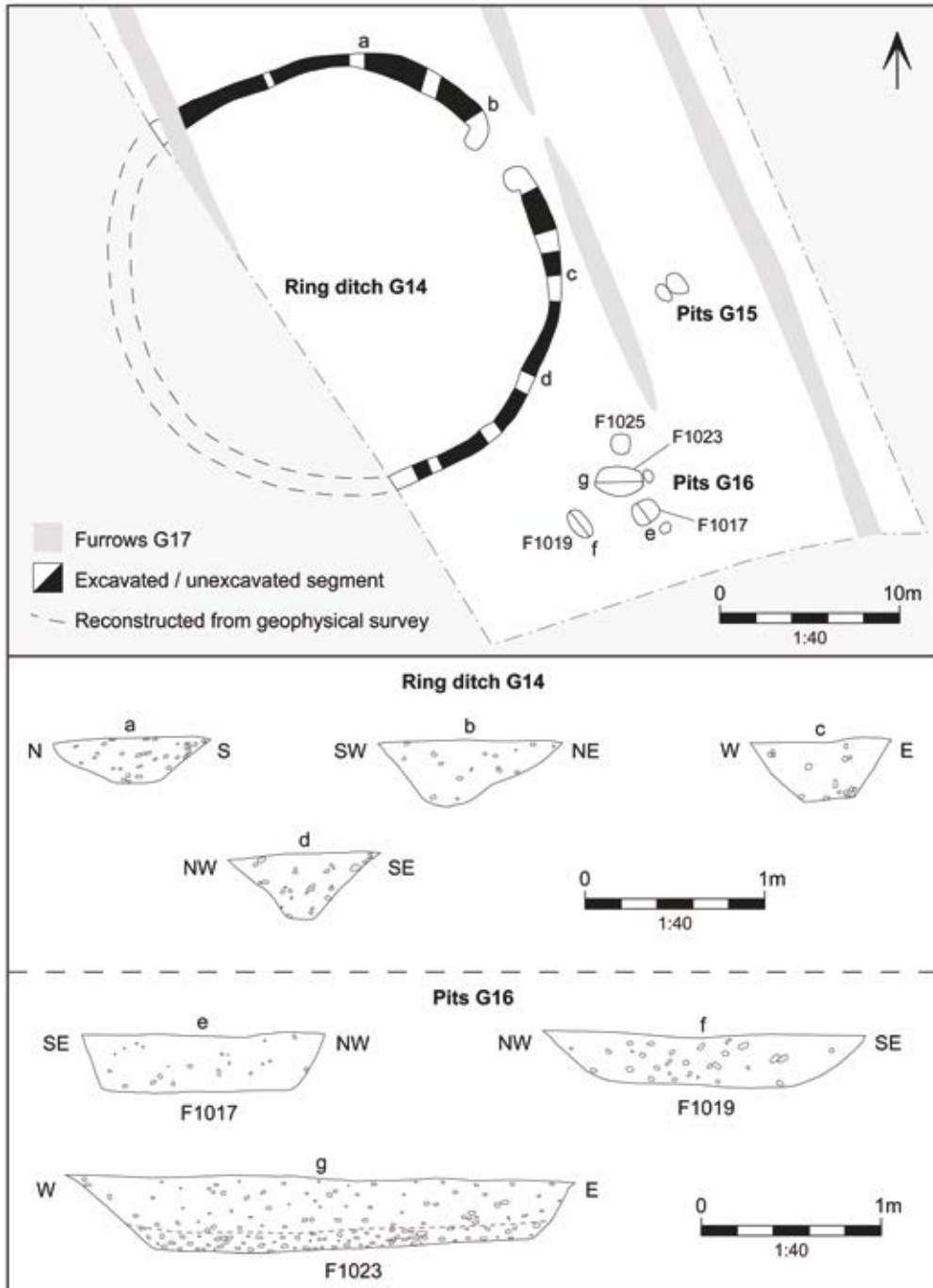


Fig. 3: Plan of Area 1 and selected section drawings.

THE EXCAVATION

The text below provides an account of what was found within the excavation areas and trial trenches (Fig. 2), with summary information about the artefacts and ecofacts recovered. More detailed information about these can be found in subsequent sections of this article. For ease of reference, some features have been combined into groups (indicated by a 'G' prefix); individual features within these groups are prefixed with an 'F'.

Area 1

The focus of Area 1 was ring ditch G14, approximately two thirds of which lay within the excavated area (Fig. 3). This had originally been identified as a crop-mark and subsequently confirmed by trial trenching (Oxford Archaeology North 2013); there was a suggestion of a central feature that was provisionally labelled as a grave, but it was clear once the whole area had been exposed that it amounted to no more than a variation in the underlying geological deposits. No features at all were revealed within the area encircled by the ring ditch, but two small clusters of pits lay just outside: a pair of pits, G15; and a group of six pits, G16.

Dating evidence from pits G16 was plentiful: in addition to pottery and loom weights that point towards a date in the Late Bronze Age, radiocarbon dating of material from two of the pits has given dates of 908–808 cal. BC and 922–829 cal. BC (Table 1). However, no dating evidence was forthcoming from pits G15 and the ring ditch. The two clusters of pits are assumed to have been contemporaneous, but it is uncertain whether the ring ditch belongs to the same period, or was an earlier feature that acted as a focus for the later pit clusters. No features postdating the Late Bronze Age were discovered other than the remains of medieval / post-medieval ridge and furrow cultivation.

Ring ditch G14

A roughly circular area was defined by ditch G14, measuring c. 22m in diameter. The ditch itself survived to a depth of no more than 0.4m, varying in width from 0.65m to 1.3m (Fig. 3: a–d). The enclosure's entrance was on the north-east side, where the ditch terminals turned inwards slightly, leaving an opening just 1.9m wide. Of the length of ditch that was exposed, its narrowest points were c. 8m from the terminals on either side, while the ditch was at its widest between these points and the terminals. There was no indication from the ditch fill as to whether an internal or external bank was present; the fill was a largely homogenous, light-coloured deposit of sandy silt that appeared to have accumulated naturally over a long period. No finds were recovered from the ditch fill.

Pits G15 and G16

G15 represents two small, shallow pits to the east of the ring ditch, both of which had light, naturally derived fills that contained no finds. In contrast, cluster G16 to the south-east of the ring ditch produced an assemblage of pottery, loom weights, wood charcoal and charred plant remains, although this material came from only three of the six pits.

The northernmost pit in G16, F1025, was sub-square in plan with nearly vertical sides, measuring 1.1m wide and 0.65m deep. Four loom weights and a quantity of pottery were recovered from the very base of the pit, suggesting that they had been placed there before the pit was deliberately backfilled: most of the pit's fill was very similar in character to the underlying natural, with just a small depression in the top which had filled up with darker soil. Similar finds were recovered from pits excavated at Willington in the 1970s, which had



Plate 1: Section of pit F1023 (G16), looking north. Scale 30cm

been converted into hearths (Wheeler 1979, 83–84), but no *in situ* burning was present here to suggest a similar interpretation. The pattern of backfill was similar in pit F1017 (Fig. 3: e) and the two smallest pits, F1015 and F1036, albeit without any artefacts present.

Pits F1019 and F1023 (Fig. 3: f and g) had very different fills to the rest of those in G16. Both displayed extensive signs of burning: the lower fill of F1023 in particular (Pl. 1) contained a high density of heat-affected pebbles (estimated at more than 150kg in total for the two pits), while both pits contained fairly large quantities of charcoal and a few charred plant remains. The burning may well have taken place within these pits, or in F1023 at least — its base was covered with a combination of blackening and reddening that points towards the presence of intense heat.

Area 2

Area 2 was targeted on a circular monument defined by two concentric ring ditches, which was first identified through aerial photography. The monument had been heavily truncated by ploughing, with just the ditches surviving. The presence of at least one causeway through the ring ditches suggests that the monument was hengi-form in character, although subsequent blocking of the causeway(s) and the addition of a central grave (G7) and possibly a mound imply that it was converted to a funerary monument. The date at which the monument was created is unknown, but radiocarbon dating demonstrates that it was a focus for activity in the Early and Middle Bronze Age (Table 1). Several small pits, post-holes and stake-holes were found in possible association with it, while a field system (G13) was also revealed in the northern corner of Area 2, as well as the remains of medieval / post-medieval ridge and furrow cultivation.

Field system G13

The northern part of Area 2 contained several small ditches, none of which was more than 0.8m wide or 0.25m deep (Fig. 4: a–c). No finds were recovered from them, and although it is unlikely that they were all contemporaneous, it was not possible to determine their stratigraphic sequence. An exploratory trench to the north of Area 2 confirmed that the ditches

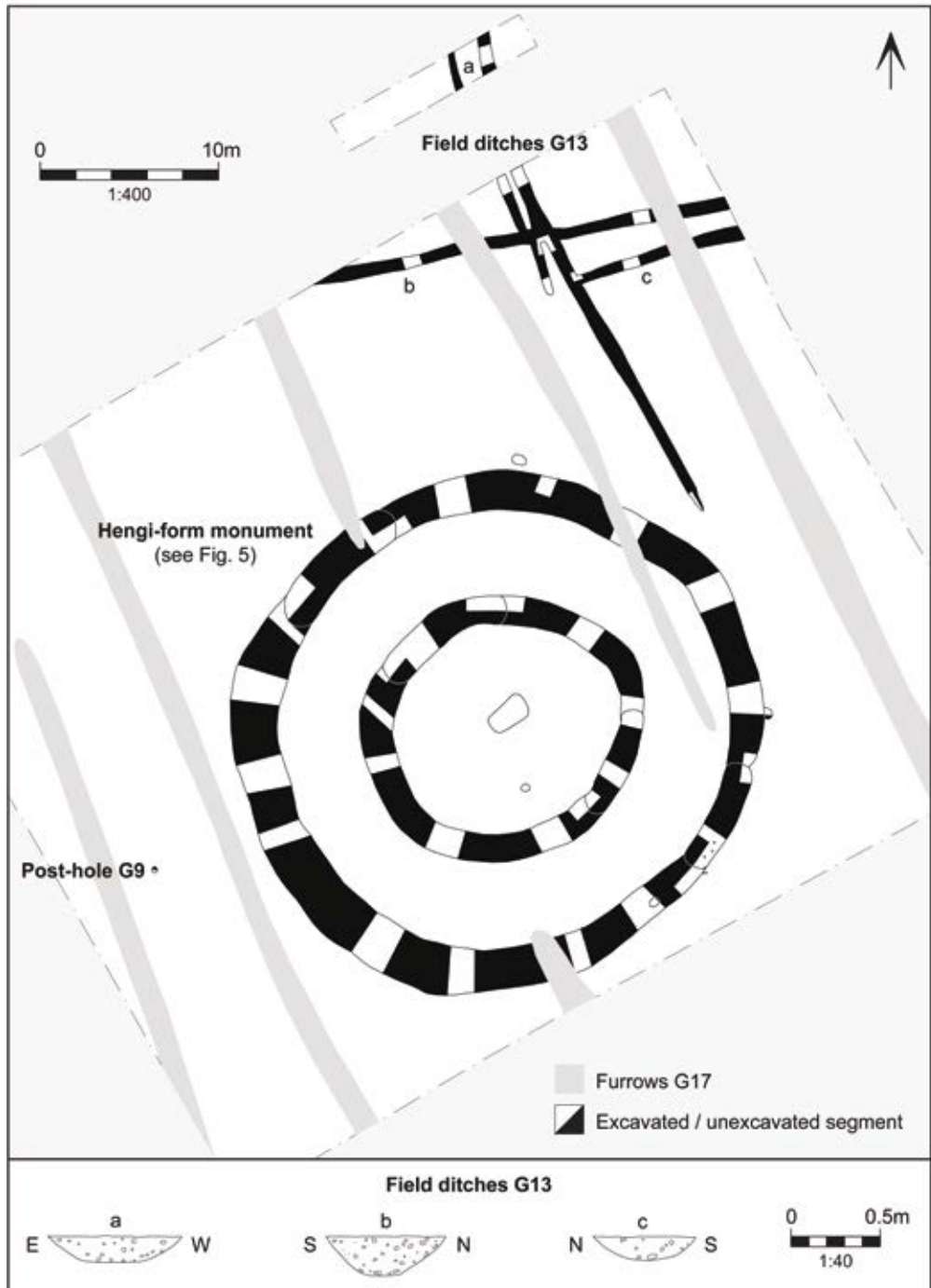


Fig. 4: Plan of Area 2 and section drawings of field system.

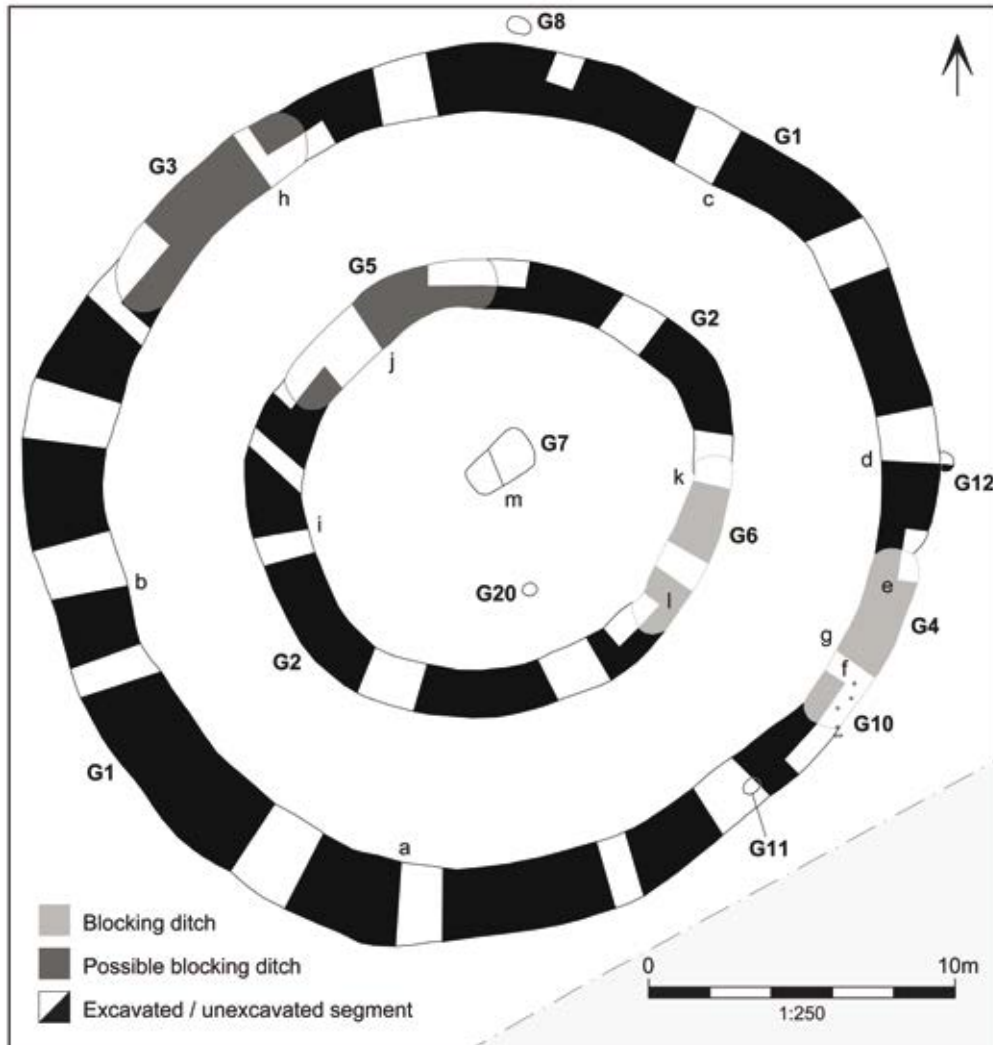


Fig. 5: Plan of hengi-form monument in Area 2.

continued, appearing to start curving eastwards, while a continuation of the northern east-west ditch was also recorded to the west of Area 2 in a trial trench (Fig. 2).

Hengi-form monument

Ploughing had destroyed any traces of raised structures such as earthen banks associated with the hengi-form monument, meaning that only those features dug into the underlying gravel survived. These primarily comprised two concentric ditches with a gap of *c.* 4.5m inbetween them, the inner ditch (G2) enclosed a roughly circular area that measured *c.* 12m in diameter, while the outer ditch (G1) had an external circumference of *c.* 29m (Fig. 5). The interior was entered initially through a causeway to the south-east, subsequently blocked by ditches G4 and G6; there may have been an opposing causeway to the north-west, blocked by ditches G3

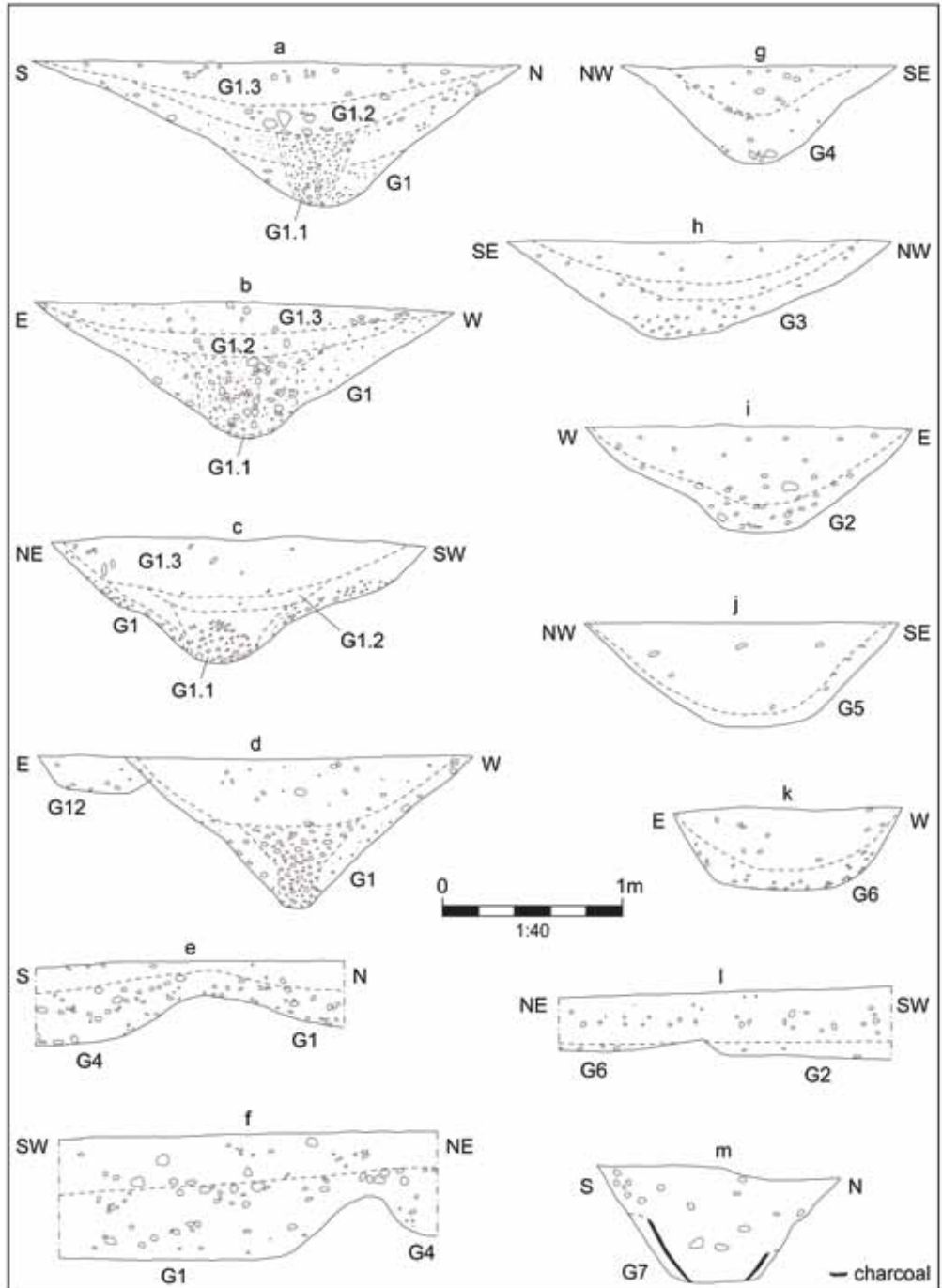


Fig. 6: Selected section drawings from hengiform monument.

and G5, but the evidence for this is much more equivocal. Few finds were recovered from the hengi-form monument, most of which came from central pit G7; dating evidence is therefore largely confined to a handful of radiocarbon dates from deposits of charcoal.

Outer ditch G1

Outer ditch G1 was 1.7–2.9m wide and 0.65–0.85m deep, with a roughly symmetrical sequence of fills which gave no clue as to the position of any associated bank (Fig. 6: a–d). A prominent feature in this sequence was a very stony central deposit (G1.1) that was most pronounced in the south-west quarter of the ditch and on its eastern side, where rounded pebbles were the dominant element in the soil matrix. The deposit became more diffuse elsewhere, with particularly little evidence of it in the northern and south-east segments. This deposit appears to be the backfill of a steep-sided trench dug along the middle of the ditch after the lower half of the ditch had already silted up. A possible interpretation is that the trench was dug to hold upright timber panels, perhaps designed to act as a screen: a similar explanation has been suggested elsewhere (Luke 2016, 39), and the easternmost segment of the ditch did contain a partially burnt or mineralised length of oak plank *c.* 0.3m wide and at least 1m long.

A light grey deposit (G1.2) in the upper half of ditch G1, over the top of G1.1, is interpreted as a relict layer of turf that formed in the ditch once it ceased to be maintained. Charcoal from this deposit, which was present throughout the length of the ditch except for the south-east quarter, was radiocarbon dated to 1431–1286 cal. BC (Table 1). The reason for its absence in the south-east quarter is unclear: the easternmost segment (Fig. 6: d) had a soil profile otherwise similar to that recorded elsewhere, although a generally different pattern of infilling was apparent south-west of the causeway through the outer hengi-form ditch. Pit (or possibly just discrete, charcoal-rich deposit) G11 (Fig. 5) was radiocarbon dated to 1638–1504 cal. BC, implying that it predated the turf layer formation in the rest of the ditch. As this was the uppermost surviving deposit within this ditch segment, it is possible that any trace of a turf layer here had been lost through plough truncation. The upper fill of the remainder of the ditch mostly comprised sterile, light-coloured silt that may have accumulated naturally over a considerable period of time, although a shallow spread of charcoal-rich material on the ditch's western side points towards continued human activity centred on the monument.

Inner ditch G2

The inner ditch of the hengi-form monument was less substantial than the outer one, measuring 1.25–1.8m wide and 0.4–0.6m deep (Fig. 6: i). Its infill was also roughly symmetrical, with no positive evidence either way for the presence of an adjacent bank. The infilling sequence was different to that observed in the outer ditch, comprising a thin, gravelly lower fill overlain by a homogenous, light-coloured silty deposit which filled the majority of the ditch. This was mostly sterile of anthropogenic material; the only exception was the easternmost excavated segment, which contained a few scraps of unidentifiable prehistoric pottery and charred remains of a fragment of oak plank.

Entrances and blocking ditches

Although the circuit of both the inner and outer ditches appeared unbroken at first, it was possible to determine that there had originally been a causeway through the south-east side of the monument, measuring *c.* 5m wide through the outer ditch and *c.* 4m wide through the inner (Fig. 5). Clearly defined terminals to the original outer ditch were visible in its longitudinal profile (Fig. 6: e and f), but those of the inner ditch were much less marked (Fig. 6: l).

The causeways through the outer and inner ditches were subsequently blocked off by ditches G4 and G6 respectively, both similar in width to the original ditches but slightly shallower. It would appear that the inner and outer ditches were still being kept clean when the blocking ditches were dug, as deposits within the original and the blocking ditches seem to have accumulated simultaneously.

Six stake-holes (G10) sited by the south-east causeway through the outer ditch suggest that a wattle fence or screen was erected there. Some lay outside the line of the blocking ditch and others within it, but all were similarly deep (c. 0.15m); this suggests that the structure was put in place when the blocking ditch was open, although what purpose it would have served is unclear.

Hengi-form monuments often have two or more entrances, and efforts were made to determine whether an opposing pair of causeways could be detected on the north-west side. The evidence was inconclusive, however: slight variations in the ditches' longitudinal profiles were observed in roughly the anticipated locations, but no definite terminals to the original inner and outer ditches could be discerned. Whereas the fills of the original ditches and the south-east blocking ditches appeared to have accumulated simultaneously, an apparent element of re-cutting or cleaning-out was evident in the location of the postulated north-west blocking ditches. The surviving evidence was only sufficient to indicate some sort of disturbance or remodelling in the location of ditch lengths G3 and G5 — whether this represents the blocking of a north-west entrance or something associated with the monument's use in the Middle Bronze Age must remain speculative.



Plate 2: Grave G7, looking south-west, with top of coffin exposed on the left and its backfill excavated on the right. Scale 0.3m

Pits G7, G8, G12 and G20 and post-hole G9

Few discrete features were identified in association with the hengi-form monument (Fig. 4) — indeed, it is uncertain whether post-hole G9, which measured 0.3m in diameter and 0.15m deep, had any connection. Pit G12 (Fig. 5) was cut by the outer hengi-form ditch (Fig. 6: d), but is likely to have been broadly contemporary with it, although its purpose is unclear: its light-coloured, sterile fill provided no clues.

G8 and G20 (Fig. 5) represent two small, very shallow pits that both showed signs of burning. The charcoal recovered from G20 within the central area of the hengi-form monument comprised a small assemblage of heavily fragmented oak charcoal, which did not merit detailed analysis, but G8 to the north of the monument produced a larger, more varied assemblage similar to those recovered from the upper levels of the outer hengi-form ditch (Table 3). This tentatively suggests that pit G20 relates to the earlier use of the hengi-form monument, whereas pit G8 was associated with Middle Bronze Age activities which took place there after the entrance into the central area had been blocked.

The most significant pit associated with the hengi-form monument, however, was G7 (Fig. 5). It was 2.4m long, c. 1.3m wide and 0.65m deep, and its lower extent at least appears to have been lined with wooden planks (Fig. 6: m; Pl. 2; *cf.* charcoal report, below). A layer of charcoal along the pit sides, which was no more than 15mm thick at any point, is all that survived to indicate the existence of planks.

The central position of pit G7 within the hengi-form monument, combined with its shape, suggests that it was a grave. This is supported by the artefacts recovered — an Early Bronze Age Food Vessel and an assemblage of flints that may represent a toolkit, both suggestive of grave goods — and the absence of any actual human remains within the pit is likely explained by the soil's acidity. The positioning of the Food Vessel (which had been squashed completely flat) and the flint assemblage in the centre of the pit suggests that they had been placed, at least partially, underneath rather than alongside the body.

Exactly why pit G7 was lined with planks is uncertain, but the most plausible explanation is that they formed a coffin. The area defined by the charcoal layer formed a discernible rectangular shape within the slightly larger overall extent of the grave (Pl. 2), suggesting that the planks represent a container within the pit rather than merely lining the pit itself. The soil between the planks and the overall outline of the pit was much finer and less stony than that within the rectangular area of the presumed coffin, and may have been deliberate packing to help support the coffin. No particular signs of *in situ* burning were evident in the soil behind and underneath the planks, suggesting that the planks/coffin had been charred before being placed in the pit, perhaps to help preserve the wood. Enough charcoal survived at the south-west end of the pit to indicate that this end of the presumed coffin was closed, but it is unclear whether the absence of charcoal at the opposite end is a sign that the north-east end was left open, or was constructed using uncharred wood.

Trial trenches

The sixteen trial trenches excavated across the development area generally revealed little of archaeological interest other than the two ring ditch monuments and field system G13. There were two exceptions: G18, a large pit located between Areas 1 and 2; and G19, a small ditch that corresponded with the sinuous east–west crop-mark in the northern half of the development area (Fig. 2).

Pit G18 was sub-rectangular in plan, measuring 6.1m long, 4.5m wide and 0.9m deep



Plate 3: Section of pit G18, looking north. Scale 1m

(Pl. 3). It had relatively shallow sides and an uneven base, perhaps indicating use as a watering hole for animals; a thin, dark, horizontal band of soil near the pit's base may well represent a deposit formed in standing water. No artefacts were found in the pit to help determine its date, but the charred remains of hulled wheat and barley recovered from the dark band of soil suggest a Roman or earlier date, making it plausible that the pit was contemporary with at least one phase of Bronze Age activity in Areas 1 and 2.

The existence of ditch G19 was suggested initially by aerial photography. Trial trenching by Albion Archaeology in 2014 confirmed its course and provided evidence that it was a re-cut of an earlier ditch along a similar line. The ditch varied greatly in size even within the short length exposed: its width ranged from 0.4m to 1.4m and its depth from 0.15m to 0.4m. A single flint flake was the only artefact recovered.

RADIOCARBON DATING

By Derek Hamilton

Five contexts were radiocarbon dated by pairs of charcoal samples (a 6th context had two samples submitted but one failed). A Chi-square test was run on the resulting measurements to determine whether the two samples could be the same radiocarbon age (Ward and Wilson 1978). Table 1 gives the dates, along with the results of the Chi-square tests. Only two of the

Lab ID	Group	Context	Material dated	Radiocarbon age (BP)	Calibrated date (95.4% probability)
SUERC-59094	16	1024a	Charcoal: <i>Alnus glutinosa</i>	2708 ±29	908–808 cal. BC
SUERC-59095		1024b	Charcoal: <i>Quercus sp.</i> T'=7.2; v=1; T'(5%)=3.8	2818 ±29	
SUERC-59096	16	1026a	Charcoal: <i>Prunus sp.</i>	2758 ±29	
SUERC-59097		1026b	Charcoal: <i>Corylus avellana</i> T'=0.9; v=1; T'(5%)=3.8	2720 ±29	
Mean 1026				2739 ±21	922–829 cal. BC
SUERC-59098	7	2015a	1	3582 ±29	
SUERC-59099		2015b	2	3591 ±29	
Mean 2015			T'=0.0; v=1; T'(5%)=3.8	3587 ±21	2018–1994 cal. BC (9.3%) or 1981–1886 cal. BC (86.1%)
SUERC-59103	11	2020b	Charcoal: cf. <i>Prunus sp.</i>	3298 ±29	1638–1504 cal. BC
SUERC-59104	6	2137a	Charcoal: <i>Prunus sp.</i>	3557 ±29	2012–2000 cal. BC (1.8%) or 1978–1870 cal. BC (76.0%) or 1846–1810 cal. BC (10.4%) or 1804–1776 cal. BC (7.2%)
SUERC-59105					
SUERC-59106	1.2	2126a	Charcoal: <i>Alnus glutinosa</i>	3102 ±29	1431–1286 cal. BC
SUERC-59107		2126b	Charcoal: <i>Prunus sp.</i> T'=4.8; v=1; T'(5%)=3.8	3192 ±29	

Table 1: Radiocarbon dates

five pairs passed this test, which suggests that the other three contexts contained material of a mixed date. The results for the two successful pairs (contexts 1026 (from pit F1025) and 2015) were combined using a weighted mean (Ward and Wilson 1978) prior to calibration, which was done using the R_Combine function in OxCal. v4.2 (Bronk Ramsey 2009).

For the paired results that did not pass the Chi-square test, the later date of the two is regarded as the best estimate for when the deposit formed — unless there is archaeological evidence to suggest that the more recent date is intrusive, a sample is always more likely to be residual within a context. This potential residuality accounts for both reworked material and the possibility of unaccounted-for offsets (e.g. old wood). The date in bold type in Table 1, be it a single measurement or the mean, indicates which one provides the best date estimate for each context.

THE FINDS

Flint Artefacts

By Holly Duncan

The assemblage of worked flint came exclusively from Early Bronze Age pit G7, near the centre of the double-ditched hengi-form monument (Fig. 5; Pl. 2). The pit is believed to have been a grave, even though it contained no skeletal remains. In addition to an Early Bronze Age Food Vessel, the pit contained three flint arrowheads, three scrapers, a utilised flake/knife, and a single chip. The flints were all found in close proximity to each other, near the centre of the pit.

The largest arrowhead (OA1) is triangular in plan and has two shallow flake scars at the proximal end of the ventral surface, and a single flake scar at the proximal end of the dorsal surface, suggesting thinning for the purpose of hafting. The dorsal surface has been invasively retouched, while the ventral surface is unworked. This would appear to be an example of a triangular arrowhead, coeval in date with the floruit of barbed and tanged 'fancy' arrowhead types, e.g. Green Low and Conygar (Green 1980, 143). Green (1980, 142–143) has suggested that triangular arrowheads may be blanks for barbed and tanged arrowheads, but the positioning of thinning flakes on OA1, where a tang might have been formed, appears to argue against this. Food Vessels are more commonly associated with plano-convex knives, and although OA1 does share commonalities with such knives — such as a plano-convex section, unifacial pressure flaking over the dorsal surface, and an unflaked ventral surface (Butler 2005, 172) — it differs in having a straight-sided triangular outline and sharp tip. The thinning flakes also support its identification as an arrowhead.

OA2 is an incomplete example of a barbed and tanged arrowhead with invasive retouch on the dorsal and ventral surfaces. Although certainty as to its type is hampered by its incomplete state, the single surviving barb is squared, suggesting that OA2 is a Conygar Hill type (Green 1980, 117 and fig. 123). Conygar type arrowheads are frequently associated with Food Vessels (Green 1980, 130 and 138). The final arrowhead recovered from the pit, OA3, is an example of a barbed and tanged arrowhead of Sutton type A, considered an 'everyday' form which is the predominant type in the English regions of the Upper Thames, Cotswolds and Midlands (Green 1980, 119 and 138).

Two definite side scrapers (OA5 and OA6) and a possible third one (OA7) were also recovered. Each scraper was formed on different flint: OA5 of mottled light and dark grey flint; OA6 of dark brown-grey opaque flint with occasional lighter patches; and OA7 of dark brown-grey translucent flint. OA7, due to its thin, abraded and smoothed cortex, probably derived from a river gravel source, while OA6 may have had a nodular source.

A secondary flake (OA8) from the pit appears to have been utilised as a cutting flake. This is of good quality nodular flint, not local to the area, and may represent contact with eastern Yorkshire or possibly East Anglia (Brightman and Waddington 2012, 38–39). The remaining flint artefact from pit G7 is a small piece of debitage in the form of a chip (OA4).

The combination of arrowheads, scrapers and a cutting flake/knife could indicate that this assemblage represents the toolkit of a hunter, with the scrapers and cutting flake / knife used for processing hides.

Catalogue (* = illustrated: Fig. 7)

***OA1 Arrowhead.** Brown and pale grey mottled flint. Triangular arrowhead, invasive retouch over dorsal surface, ventral unworked except for thinning flakes at proximal end, also thinned on dorsal proximal end. Plano-convex in

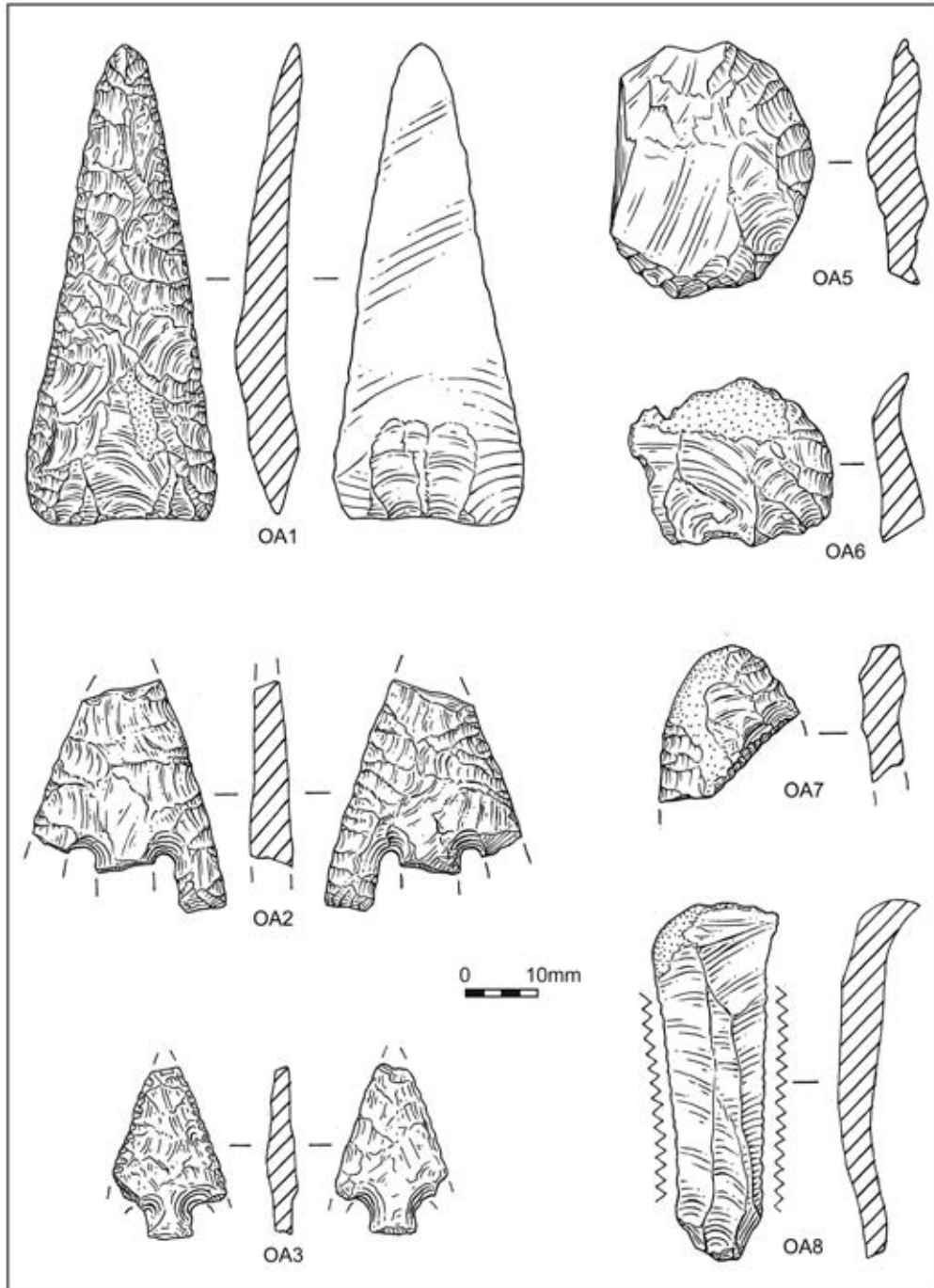


Fig. 7: Selected flint artefacts.

section. Proximal would appear to be thinned for hafting. Length 66mm; width 26mm; thickness 8mm.

***OA2 Arrowhead.** Translucent brown-grey flint. Barbed and tanged arrowhead, tip, one barb and tang broken off. Invasive retouch on ventral and dorsal surfaces. Square barbs. Conygar type? Length 32.5mm; width 26mm (estimated 30mm prior to breakage); thickness 4.5mm.

***OA3 Arrowhead.** Pale grey cloudy flint. Barbed and tanged, vestigial barbs, square based tang, serrated edges. Bifacial invasive retouch. One barb and tip broken off. Sutton A type. Length 22.8mm (estimated complete length c. 28mm).

OA4 Chip. Pale tan translucent flint. Debitage chip. Length 6mm; width 8mm; thickness 1.5mm.

***OA5 Scraper.** Opaque mottled light and dark grey flint. Side scraper formed on tertiary flake, semi-abrupt retouch along one lateral edge, opposing edge broken off. Hard hammer-struck, bulb missing. Length 33.4mm; width 26mm; thickness 5.5mm.

***OA6 Scraper.** Side scraper? Dark brown-grey opaque flint. Side scraper, semi-abrupt retouch along one lateral edge. Short, squat secondary flake, cortex at distal end, short squat flake removal scars on dorsal surface, ventral surface heat pocked. Hard hammer-struck. Length 23.7mm; width 25mm; thickness 5.6mm.

***OA7 Scraper?** Perhaps scraper in the making? Dark brown-grey translucent flint. Edge of rounded nodule, thin cortex, abrupt retouch along two edges, proximal end broken off. Length 24mm; width 18mm; thickness 6.3mm.

***OA8 Utilised flake.** Translucent brown-grey flint. Secondary flake, cortex at distal end. Fine nicking along one lateral edge. Length 49mm; width 17mm; thickness (distal end) 7mm

Fired Clay Objects

By Holly Duncan

A cluster of six Late Bronze Age pits (G16) was located south-east of ring ditch G14 (Fig. 3). Alongside sizeable quantities of fire-cracked stone, charcoal, and sherds from five pottery vessels, they contained five objects made from fired clay, plus a very small quantity of fuel ash slag (0.01g) from the lower fill of pit F1023. Four of the fired clay objects were loom weights, while the fifth was an upturned, rounded lip of an object (OA9) that was perhaps a tray or part of an oven.

The loom weights all came from the base of pit F1025. Only two were complete enough to determine the form (OA10 and OA11), which comprised a rounded pyramid/cone-shape with flat, circular base, and a domed top with transverse perforation. In form, they most closely resemble Elsdon's type II loom weights recovered during excavations at Willington Quarry (Elsdon 1979, 197 and fig. 80), although the Etwall Road examples lack the vertical indentation/dimple on the domed top of Elsdon's type II. Only one loom weight (OA10) was complete (Pl. 4); its height (157mm) and weight (2.2kg) compare well with loom weights from the earlier excavations, which were 120–180mm high and weighed 1.81–2.72kg (Elsdon 1979, 197). The exterior surfaces of the Etwall Road loom weights are generally orange to reddish brown in colour, while the interior is generally dark grey to grey-brown. The sandy fabric has rare large stone inclusions and occasional medium-sized angular stones, with a variable quality of firing.

These pyramidal/rounded cone-shaped loom weights are a Late Bronze Age type with a fairly wide geographical distribution (see Elsdon 1979, 208–210). As was the case in the Iron Age, textile production would have been a household-based craft.

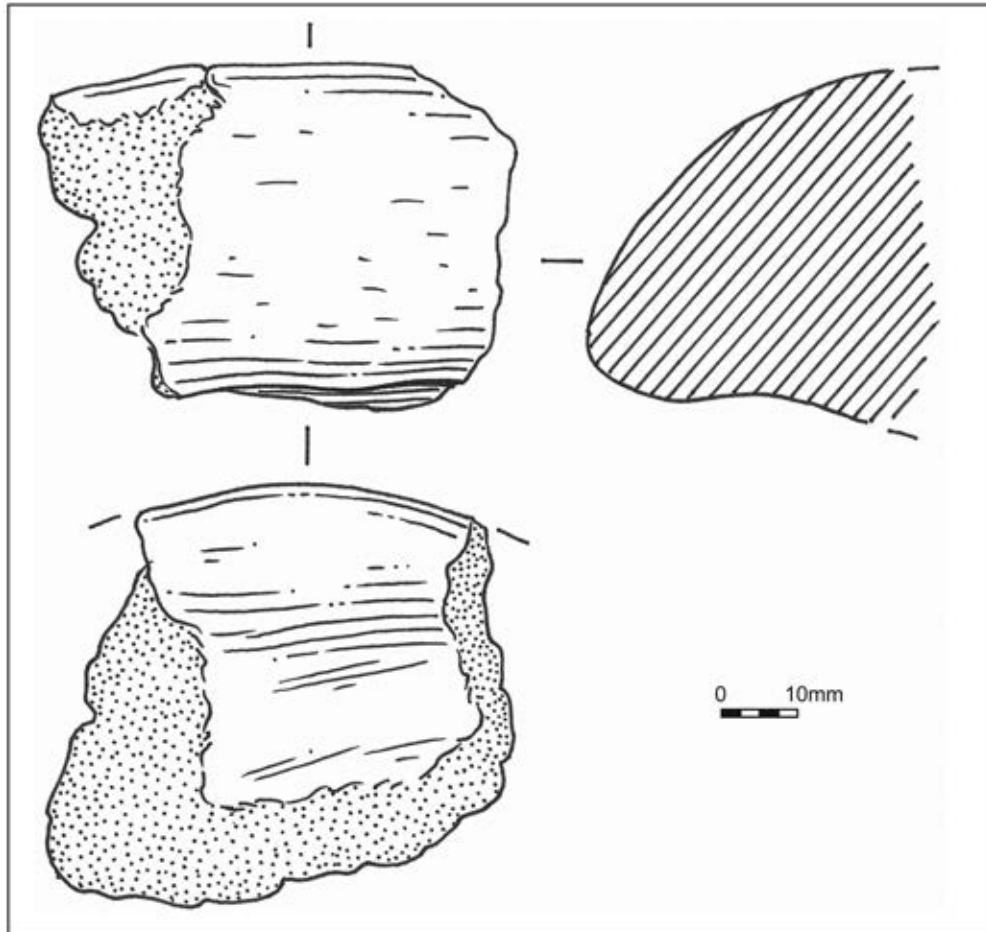


Fig. 8: Fired clay object OA9.

Catalogue G16 (* = illustrated)

***OA9 Uncertain (Fig. 8).** Friable oxidised sandy clay. Rounded upturned lip, edge gently curving down towards base, base does not survive. Thickness 44.2mm; height including lip 52.2mm. G16; F1023.

***OA10 Loom weight (Pl. 4).** Ceramic, brown to red-brown exterior. Pyramidal loom weight, circular base, domed top, transverse perforation (21.5 x 16mm) 1/3 of length from apex. One side of loom weight blackened from firing. Height 157mm; base diameter c. 130mm; weight 2,200g. G16; F1025.

OA11 RA101 Loom weight. Ceramic. About 2/3 of a pyramidal weight, circular base, domed top, transverse hole (22.5 by 12.5mm) 1/3 from apex. Height c. 150mm; base diameter c. 120mm; weight 1,312g. G16; F1025.

RA102 Loom weight. Ceramic. Less than 1/3 weight, part flat, rounded(?) base and curved wall (pyramidal?). Top does not survive. Height 120mm; weight 818g. G16; F1025.

RA103 Loom weight. Ceramic. Less than 1/3 weight, base round and flat. Exterior surfaces do not survive. Light orangey brown on sides, dark grey interior. Height c. 65mm; base diameter >115mm; weight 644g. G16; F1025.



Plate 4: Late Bronze Age loom weight OA10. Scale 10cm

Pottery

By Pauline Beswick

Pottery was recovered from two separate areas: the hengi-form monument in Area 2; and the cluster of Late Bronze Age pits in Area 1. The assemblages from each area are from different periods, with no overlap in fabric or form, and are therefore dealt with separately below.

Hengi-form monument

The central pit G7 contained an Early Bronze Age Food Vessel, which was found 'squashed flat' (Pl. 2), and two Neolithic sherds are identifiable amongst a few sherds found in ditch-related contexts. The remaining six small sherds, fragments and crumbs from the monument's ditches appear to be prehistoric in character but are too abraded and small for closer identification.

Neolithic (Fig. 9: P1 and P2)

P1: Rim sherd; upright and rounded. Decorated on top with short, angled incisions. Fabric (Qu): hard, smooth and black throughout with c. 20% fine quartz sand and voids, some of which on outer surface probably represent burnt out vegetable matter and not decoration. Probably from an Earlier Neolithic small, open and round bottomed bowl, c. 100mm diameter. Abraded, weight 23g and retrieved from soil sample. From G1.2: turf stabilisation event in outer hengi-form ditch.

P2: Body sherd; decorated with a line of deep fingertip/nail impressions and two lines of twisted cord impressions. Fabric (Gr1): soft, with brown external and internal surfaces with a black core; and grog tempered. Probably from a Later Neolithic Grooved Ware vessel. Average condition, three pieces join along recent fresh breaks and weight 34g. From G1.2: turf stabilisation event in outer hengi-form ditch.

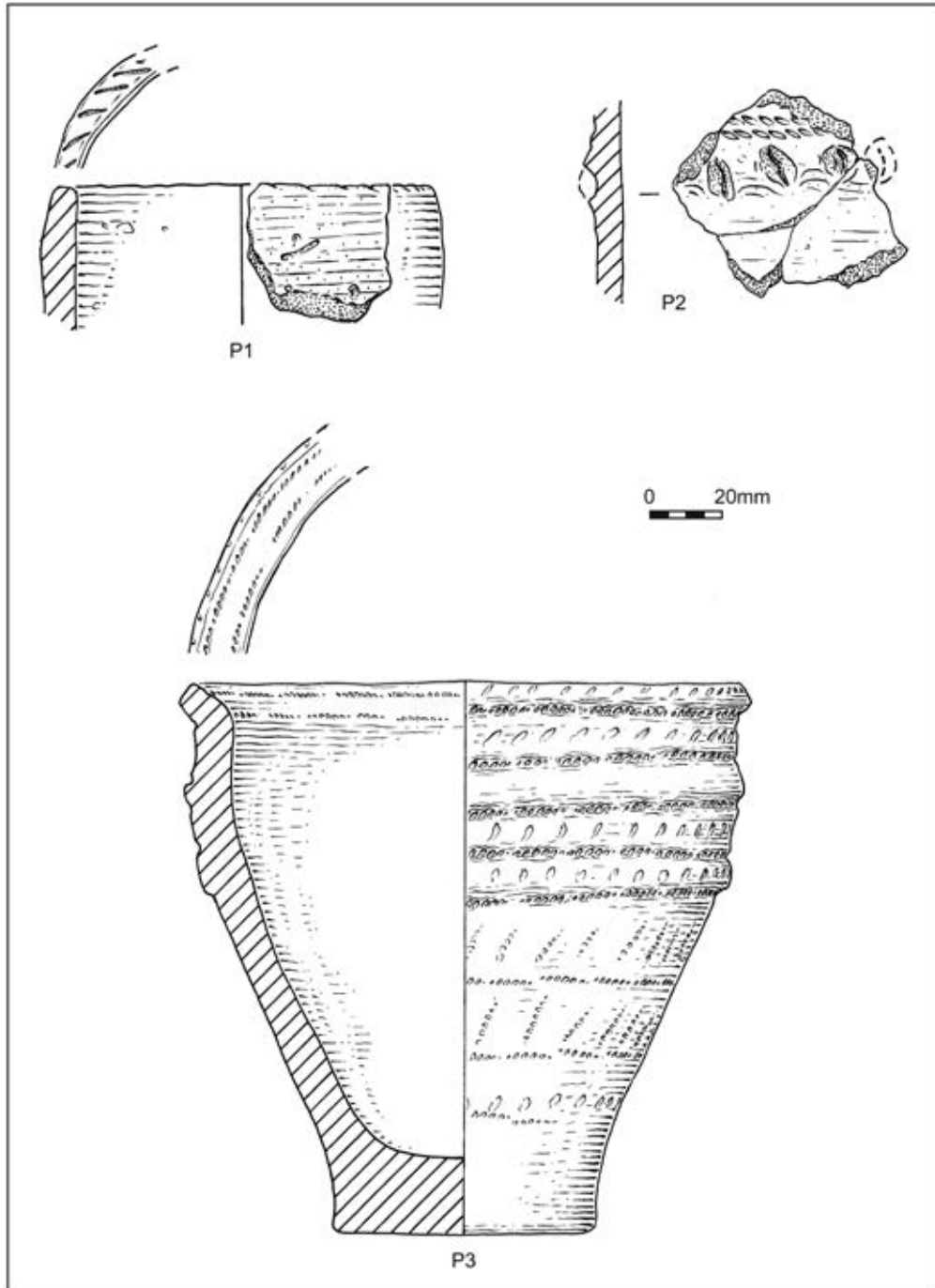


Fig. 9: Selected Neolithic and Early Bronze Age pottery.

Both of these sherds, although from later, disturbed contexts, are suggested to be Neolithic in date on the basis of their fabric and form.

The rim sherd, with its simple shape and hard, smooth, well made fabric plus its restrained decoration, is typical of small bowls associated with the Carinated Bowl tradition of the early to mid-4th millennium BC. Local examples include vessels found at Willington in 1998–99 (Beamish 2009, 88, fig. 45.1–3) and in 1970–72 (Manby in Wheeler 1979, 146, fig. 58.2–3). Petrological work carried out on the 1998–99 material assigned the illustrated sherds in figure 45.1–3 to a fabric similar to that of the rim described here (Johnson and Whitbread 2008; fabric 2).

The body sherd, with its straight profile and relatively thin body wall (average thickness 7mm), in combination with a soft fabric and strong decoration, is most likely to belong to the Grooved Ware tradition, which in England is dated to the 3rd millennium BC. The pots were tub, bucket or barrel shaped with flat bases, and are often found associated with ritual sites such as henge enclosures (e.g. Durrington Walls: Wainwright and Longworth 1971). Locally found examples of Grooved Ware include significant pit groups excavated at Willington Quarry in 1970–72 (Manby in Wheeler 1979, 146–148, figs 59–63) and finds from flint and sherd scatters excavated at Mount Pleasant, Kenslow, in the Peak District (Garton and Beswick 1983, 20, fig. 6). Fabric analysis of the Mount Pleasant finds, using macroscopic techniques, suggested that the Grooved Ware fabric contained possible decayed igneous rock as well as grog as tempering materials (Garton and Beswick 1983, table 3). It is possible that the body sherd described here also has decayed rock temper as well as grog, but petrography would be needed to ascertain this with certainty. The Durrington Walls style of Grooved Ware was dominant at the Willington Quarry site excavated in 1970–72 and this sherd could relate to the same style. Twisted cord horizontal lines are a recognised feature and fingertip decoration occurs, although only rarely (Wainwright and Longworth 1971, 67–70). The fact that the Etwall Road sherd came from a hengi-form monument could also be a contributory factor in the identification of this sherd as Grooved Ware. However, there is a possible alternative identification. The decorative motifs ultimately derive from earlier Peterborough Wares and also occur on rusticated Beaker coarse wares of the late 3rd and early 2nd millennia BC in Britain (Gibson 1982). Beaker and Grooved Ware pottery are often found together on domestic sites, and their forms and decoration demonstrate cross influences (Gibson 1982, 80). Both can also contain grog, although Beakers tend to show more variety in their use of tempering materials (Wardle 1992, 80–82). On balance, however, rusticated Beaker decoration is usually prolific, covering all of the pot's exterior, and often less carefully executed than is evident on this sherd.

Early Bronze Age (Fig. 9: P3)

P3: Food Vessel; nearly complete but found to have been 'squashed flat' in antiquity, and, with the friable, crumbly nature of the fabric, there are few joining sherds, and parts of the vessel have not survived. The reconstructed shape shown in Fig. 9: P3 is the most likely. Rim diameter c. 160mm, base diameter c. 70mm and height c. 155mm. Average body thickness 10mm, and the surviving c. 53 pieces weigh 860g. Additional crumbs from soil samples bring the total weight to 868g.

Vase-shaped, with a slightly convex lower body and a bevelled rim of R2 form (Wilkin 2013), the pot is tripartite in structure with two shallow cavetto zones divided by two cordons, each defined by upper and lower encircling bands of individual whipped cord impressions, also known as cord 'maggot' impressions. A line of whipped cord impressions also encircles the pot below the external rim bevel, along the top of the upper cavetto zone. This zone bears faint traces of angled whipped cord impressions, possibly applied by the potter at a late stage when the clay

was almost dry. Occasional similar impressions also appear in the second cavetto zone below. Random horizontal and angled, lightly applied, whipped cord impressions have also been used to decorate the lower body. Two parallel lines, created with whipped cord, encircle the internal rim bevel, and indeterminate vertical (probably fingernail) impressions are evident around the rim edge. In addition, small, vertical fingernail impressions have been added around the lower cordon. (Note: This pot's poor condition has made the decorative scheme particularly difficult to resolve and I am grateful to the illustrator, Mike Trevarthen, for his input and help.)

Fabric (Gr2); soft and slightly soapy with an irregularly fired brown/red exterior, and black core and internal surface. Tempers used appear to be mainly grog with some decayed rock, probably igneous, but petrography would be required for certain identification. Surfaces abraded but breaks relatively fresh, suggesting that the pot could have been used prior to deposition. From G7: pit at centre of hengi-form monument.

Food Vessel pottery is an insular type found more commonly in upland areas of the north and west of the British Isles than in the south and east, and usually found with burials. There are examples of non-funerary contexts, and some vessels also show evidence for wear such as that described above, but wear could occur in ritual or domestic contexts and is not conclusive evidence of non-funerary activity (Wilkin 2013, 9–12). In this instance the size and shape of the pit in which the pot was found, and the absence of cremated bone, strongly suggest original deposition with an inhumation burial. Wilkin states that only a small number of Neolithic monuments, particularly of henge and hengi-form type, were re-used for late Beaker and Food Vessel deposition after a hiatus in activity (Wilkin 2013, 9), which would indicate that this is a find of some significance.

Radiocarbon dates suggest a date range of around 2200 to 1800 cal. BC for Food Vessels generally (Wilkin 2013) and dates for this vessel fall within that range (Table 1, Group 7 dates). Wilkin argues that Food Vessels represent a clear break with Beaker ceramic technology and with connections between Britain and Ireland at a time when Irish copper sources were important (Wilkin 2013, 18). Major English areas of Food Vessel concentration include Yorkshire and the Peak District. Whilst Wilkin advocates a regional approach and an improved method for classifying Food Vessels, judging all earlier classifications to be unreliable (Wilkin 2013, 87), unfortunately, lack of time and space precluded him from including a detailed regional study of Peak District Food Vessels. He does, however, describe them as relatively uniform 'Yorkshire Vases' (Wilkin 2013, 13), a type defined by Manby in his classic study (1957) which also recognised regional connections as well as differences between Yorkshire and Peak District Food Vessels and their associations.

This Willington vessel is a Type 2 (ii) form in Manby's typology (1957, 4), a form relatively common in the Peak District. One example with all-over horizontal cord 'maggot' decoration similar to that on the upper part of the Willington vessel is illustrated by Manby (1957, 15: A14): a vessel from Blake Low, Great Longstone. The majority of single cord 'maggots' on Food Vessels, however, were used in geometric patterns such as herring-bone designs or as vertical impressions perpendicular to the horizontal ridges separating the cavetto zones. Peak District examples include a vessel from far Low, Caudon, in Staffordshire (Vine 1982, no. 555); and examples from north-east Yorkshire are published in the catalogue of the Greenwell Collection (Kinnes and Longworth 1985, e.g. 13 Sherburn, Burial 2; 238 Folkton, Burial 1).

The visual effect of the linear cord 'maggot' impressions on this Willington vessel, on both sides of the cordon-like ridges and under the rim, resembles leather stitching such as might have been used around inserts to stiffen a leather-made container. Even the lightly applied decoration elsewhere on the pot could perhaps be seen as an attempt to replicate the effect of decoration on leather. Manby (1995) has drawn attention to the possibilities of skeuomorphism

representing leather, wood and basketry in Early Bronze Age pottery, particularly in the Food Vessel tradition, so such speculation may not be entirely fanciful.

In the south generally, Food Vessels occur more rarely and are often less elaborately and more crudely decorated, or even plain. A variety of examples, however, have been found in Leicestershire (e.g. Vine 1982, nos 571, 575 and 602–3), with four more discovered recently. At Cossington, 11km north of Leicester at the confluence of the rivers Soar and Wreake, excavation of Barrow 2, in a group of three, revealed a complex history of several burials along with Beaker sherds, two Food Vessels, an Accessory Cup and three Collared Urns (Allen in Thomas 2008, 27–30, fig. 32). Allen describes one of the Food Vessels — a large Food Vessel Urn associated with a child inhumation — as an unusual find in the East Midlands, suggesting connections further north (Allen in Thomas 2008, 34). The other is a small tripartite vase found in a shallow pit with no bone or other finds. Although similar in size to the Willington vessel it appears squatter, with different proportions to the cavetto zones, the lower being twice as broad as the upper. The decoration of whipped cord ‘maggots’ in multiple horizontal bands consists of three lines of individual ‘maggots’, each separated by a space of equal size. The overall effect is different but the horizontal cord maggot element is comparable to the decoration on the Willington Food Vessel and again suggests northern connections, perhaps via the River Soar, a major tributary of the River Trent. At Eye Kettleby to the east, on a tributary of the River Wreake, two bipartite Food Vessels were found, one decorated and with a burial, the other plain and in a pit. Both differ from the Willington vessel in shape and approach to decoration. Modelling of radiocarbon dates suggested that the decorated Food Vessel was interred 2140–1940 cal. BC (95% probability) (Woodward in Finn 2011, 38–40, fig. 32).

The Willington vessel relates chiefly in form and decoration to the mainstream Food Vessels of northern England, particularly the Peak District. In this respect it is interesting that the decayed rock temper in macroscopic appearance looks like the basic igneous material recently identified as having been in widespread use in Peak District ceramics from the Early Bronze Age (Cootes 2012). However, thin-sectioning would be required for certain identification.

Pit group G16

Three of the six pits in cluster G16, adjacent to the ring ditch in Area 1 (Fig. 3), contained pottery dating from the Late Bronze Age, around 1000 to 700 BC. There are 82 sherds weighing 3,161g, excluding all pieces from soil samples. They represent a minimum of nine vessels unequally distributed between the three pits (Table 2). No example of a cross-join between sherds from different pits was identified

Fabrics

Three fabrics were recognised, all containing materials locally obtainable:

Qt1. A hard, brown, sandy fabric with 5% angular quartzite inclusions c. 3–8mm and above in size. Represented only by one sherd from pit F1019 decorated with fingertip impressions (Fig. 10: P4).

Qt2. A hard, irregularly fired, fine clay, with iron-rich argillaceous inclusions derived from Mercia Mudstone, and with c. 5–10% angular quartzite inclusions c. 2–7mm and above in size. Represented by 42 sherds from two pits: 33 from pit F1023 and nine from F1025. A minimum of three vessels, on the evidence of bases, was present in pit F1023 (e.g. Fig. 10: P5, P9/10 and P11) and two in F1025 (Fig. 10: P12).

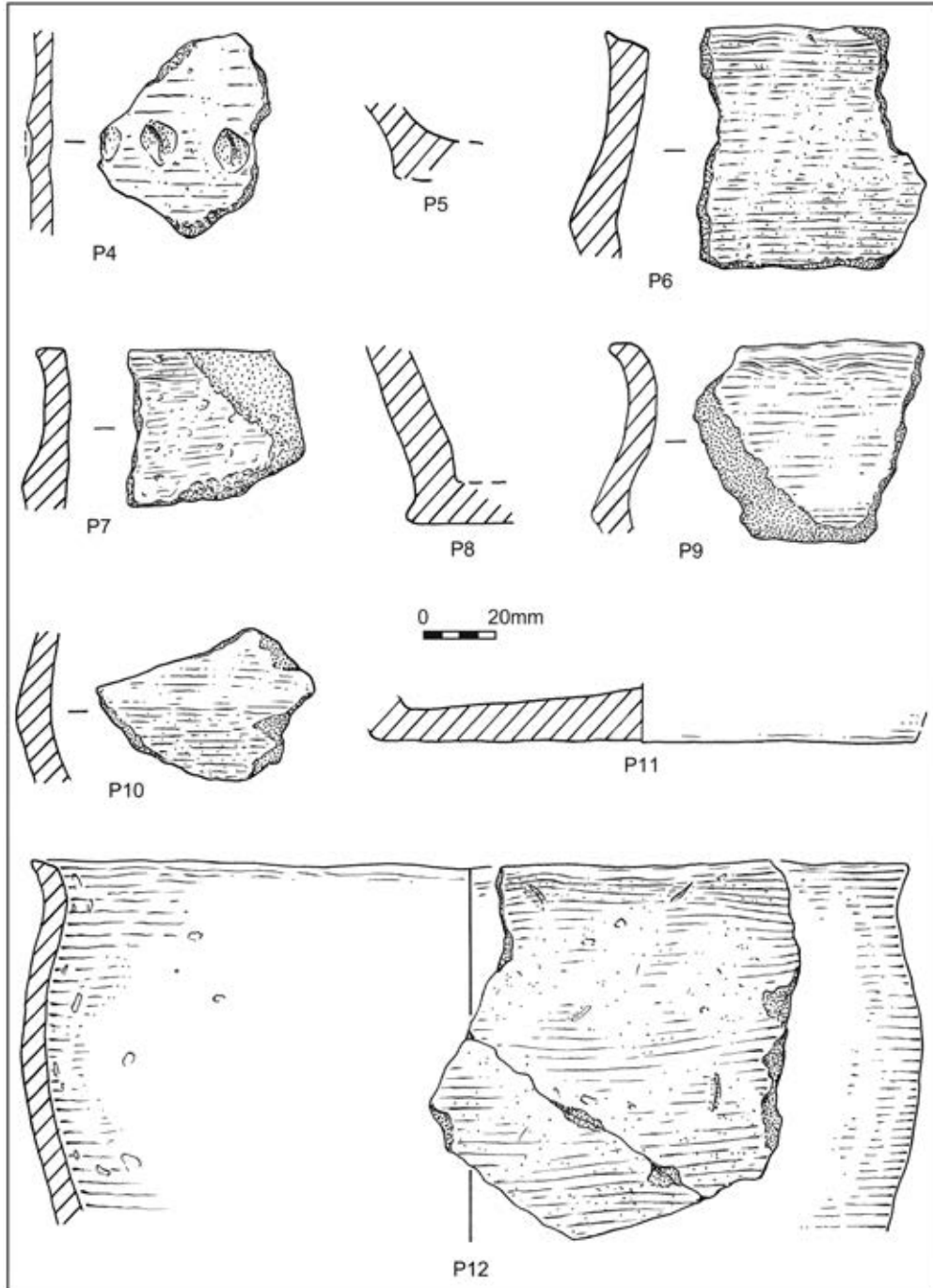


Fig. 10: Selected Late Bronze Age pottery.

Mm. A softer, slightly soapy-feeling, but granular, fabric of a fine clay with rounded argillaceous inclusions derived from Mercia Mudstone at around 15–20% frequency and averaging 2mm in size. Represented by 39 sherds from two pits: fifteen from pit F1019 and 24 from F1023. Only one vessel is represented in pit F1019 but two are present in F1023 (Fig. 10: P6–P8).

Fabrics close to all three were found at nearby Swarkestone Lowes, in the Trent Valley, in Late Bronze Age/Early Iron Age (LBA/EIA) pottery (Elliott and Knight 1999, 128–129). Descriptions of pottery fabrics in the report on the 1970–72 excavations at Willington Quarry suggest that a similar range of fabrics was also found in pottery then termed Iron Age in date, but which now would be termed LBA/EIA (Elsdon in Wheeler 1979, 162). For instance, Elsdon's A Ware might be compared with Qt1, B Ware with Qt2, and C Ware with Mm. Argillaceous fabrics were also present in pottery of the 1st millennium BC from a triple ring ditch at Aston-on-Trent (David Knight *pers. comm.*).

Interestingly, the clay in a sample loom weight piece from pit F1023 is sandier and has a sparser distribution of argillaceous inclusions (up to *c.* 5%) than occurs in fabric Mm, suggesting that local argillaceous-rich Mercia Mudstone deposits were specially sought out for potting clay; and that, for fabric Qt2, quartzite pebbles probably from the Trent gravels were coarsely crushed and added to a similar clay.

Forms

No complete vessel profile has survived, but there is evidence of an everted rim with a carinated form (Fig. 10: P9); of a flattened rim with a shouldered form (Fig. 10: P7); and of everted, pointed rims with carinated and ovoid forms (Fig. 10: P6 and P12), in both Mm and Qt2 fabrics. Comparable local examples of similar classic LBA/EIA vessels of round shouldered or carinated form with high upright, or everted concave necks include jars from Willington Quarry (Elsdon in Wheeler 1979, 173, figures 69.13, 69.21 and 69.23), Swarkestone Lowes (Elliott and Knight 1999, 135, fig. 17.7) and Mam Tor (Coombs and Thompson 1979, figs 20.1, 22.1, 22.3 and 25.1).

All bases are flat (Fig. 10: P11) and some are pinched out at the circumference (Fig. 10: P8 and probably P5). Two base sherds (not illustrated) from pit F1023 appear to bear impressions of textiles and/or fibre on their external surfaces, which is of interest in view of the loom weights also found in the adjacent pit (F1025). A number of large body sherds in both Mm and Qt2 fabrics suggest tall vessels with walls of up to and over 120mm high, and external diameters of *c.* 160–240mm. Marks from finger-shaping and smoothing, and of grass-wiping, are present on a number of these large sherds.

Decoration

Evidence for decoration with a row of fingertip impressions (Fig. 10: P4) is confined to one sherd from pit F1019, the only sherd of fabric Qt1 found in the pits. It is also thinner-walled (*c.* 6mm) than most of the other pit vessels, and its profile suggests a cylindrical shape perhaps more akin to late 2nd millennium BC Deverel-Rimbury type urns (e.g. Allen *et al.* 1987, 211–212), on which fingertip decoration around the upper circumference is common. Fingertip work is less common in the Late Bronze Age and is usually positioned on a carination or shoulder, or adjacent to a rim (Knight 2002, 124; e.g. Mam Tor, Coombs and Thompson 1979, fig. 18.1). Abraded edges to this sherd may indicate re-deposition from an earlier context.

Evidence for use

A number of vessels from the pits appear to show external evidence of sooting, and internal residue staining lines imply that they were probably used as cooking pots.

All of the pottery from the pits could have been used near-contemporaneously in domestic activities in the Late Bronze Age, apart from the one decorated sherd which may be slightly earlier in date.

Catalogue of illustrated Late Bronze Age sherds from pits G16 (Fig. 10)

P4: Body sherd decorated with line of three fingertip impressions. Fabric Qt1. Abraded edges, weight 21g. Pit F1019.

P5: Base/body sherd, with probable pinched out base. Fabric Qt2. Damaged but average condition, weight 12g. Pit F1023.

P6: Everted, pointed rim sherd with carinated body. Fabric Mm. Average condition, weight 60g. Pit F1023.

P7: Upright, flattened rim sherd with shouldered body. Fabric Mm. Abraded, weight 25g. Pit F1023.

P8: Base and body sherd, with pinched out base. Fabric Mm. Abraded, weight 54g. Pit F1023.

P9: Everted, rounded rim sherd with carinated body. Fabric Qt2. Abraded, weight 39g. Pit F1023.

P10: Carinated sherd, possibly from same pot as rim sherd P9. Fabric Qt2. Abraded, weight 27g. Pit F1023.

P11: Base, two joining sherds, external diameter 150mm. Fabric Qt2. Average condition, weight 300g. Pit F1023.

P12: Everted, pointed rim and body sherd which, together with a joining body sherd, forms an ovoid shaped pot, with a 200mm external rim diameter. Fabric Qt2. Condition average, weight 118g. Pit F1025.

Comments

This assemblage compares most closely with the Post Deverel-Rimbury (PDR) plain wares current in the East Midlands during the early 1st millennium BC (Knight 2002, 124–126, fig. 12.3). As described above, forms and fabrics find parallels in local pottery from the Willington Quarry 1970–72 excavations, from Swarkestone Lowes and, in different fabrics, from Mam Tor hillfort. Similar pottery has also been found at Eye Kettleby, Leicestershire (Marsden in Finn 2011, 96–99, 122, fig. 75) where charcoal from a Late Bronze Age cremation with a single Late Bronze Age sherd gave an estimated date of 980–810 cal. BC (95% probability) (Marsden in Finn 2011, 95). More satisfactory direct dating evidence, however has long been needed for these East Midlands plain wares (Knight 2002, 125), and the new dates from Etwall Road, which start earlier and overlap with those from Eye Kettleby, are welcome additions.

Charcoal

By Dana Challinor

Introduction

Of the twenty bulk soil samples that were processed, twelve contained charcoal that was deemed to merit detailed analysis (Table 3). Fragments of charcoal were randomly selected for identification from a range of sieve sizes (8mm, 4mm and 2mm) although, since preservation was poor, preference was given to larger fractions to avoid high numbers of indeterminate fragments. For the majority of the samples, 30 fragments were identified; this was adequate for assemblages of low diversity and necessary for those samples with scant identifiable material. For the larger assemblages and those of higher diversity, 50 fragments were identified.

Results

A total of 450 fragments were examined, resulting in the positive identification of seven taxa: *Quercus sp.* (oak), *Alnus glutinosa* (alder), *Corylus avellana* (hazel), *Populus/Salix* (poplar/willow), *Prunus sp.* (cherry/blackthorn), *Maloideae* (hawthorn, apple, pear, service, rowan etc.) and *Fraxinus excelsior* (ash). The charcoal was generally in poor condition, with small

Pottery	Pit F1019	Pit F1023	Pit F1025
<i>Sherd numbers</i>			
Fabrics Qt1	1	-	-
Qt2	-	33	9
Mm	15	24	-
Totals	16	57	9
<i>Sherd weights</i>			
Fabrics Qt1	21g	-	712g
Qt2	-	991g	-
Mm	281g	1,156g	-
Totals	302g	2,147g	712g
<i>Minimum vessel nos</i>			
Fabrics Qt1	1	-	-
Qt2	-	3	2
Mm	1	2	-
Totals	2	5	2
Illustrated sherds	Fig. 10: P4	Fig. 10: P5–P11	Fig. 12

Table 2: Analysis of Late Bronze Age sherds by feature and fabric (excluding all pieces from soil samples)

fragment sizes and heavy sediment staining. This particularly inhibited the determination of maturity and the differentiation of *Alnus* and *Corylus*. The samples from pits G16 in Area 1 were notably better preserved (large, abundant fragments, with a clearer anatomical structure) than those from the hengi-form monument and its associated features. The *Prunus* was not identified to species level as the ray widths (a distinguishing feature between the native species) were unclear or too variable to be confidently ascribed. It is likely that at least some *P. spinosa* (blackthorn) was present, and possibly *P. padus* (bird cherry). Tyloses were observed in some oak fragments, indicating the presence of heartwood, and the absence of tyloses was used to denote sapwood, although frequent crud accumulation in the pores inhibited confident determination in many instances. Moderate or strong ring curvature was recorded as roundwood, though complete stems were rare. Insect tunnels were noted in some *Alnus* fragments in sample 211.

Discussion

Central hengi-form pit

Both samples from central pit G7 were exclusively composed of oak, including heartwood and some burrwood. The larger of the two assemblages came from sample 200, and some of the fragments were large enough to be confident that the material derived from trunkwood or

large branchwood, with no evidence for ring curvature indicating the use of wood of smaller diameter. Moreover, the presence of burrwood is interesting as burrs are usually produced in mature oak, either naturally, if the tree is very old, or as a result of pollarding (Mark Robinson, *pers. comm.*). The material sampled is believed to represent the charred lining of the pit or perhaps more likely the remnants of a coffin (Fig. 6: m; Pl. 2), in which case it is most likely to have taken the form of wooden planks, not dissimilar to some of the ditch samples. It is clear from the burr and tyloses that wood of some age was utilised, and the felling of an ancient tree for use in feasting activities may have formed part of the ritual practices.

	Period	Early Bronze Age				E-MBA	Middle Bronze Age				Late Bronze Age					
		Group	7		2		1.1	11		1.3		16				
			Feature		6			8		1023			1019		1025	
			Samples		2136			2120		2141		100		101		102
<i>Quercus sp.</i>	oak	30	20	30	25	30		11	3	16	45	33	40			
<i>Alnus glutinosa Gaertn.</i>	alder								7		2	2				
<i>Corylus avellana L.</i>	hazel							1		9			7			
<i>Alnus/Corylus</i>	alder/hazel						2	11	8	11		1				
<i>Populus/Salix</i>	poplar/ willow								8			1				
<i>Prunus sp.</i>	blackthorn group				5		20	5	10			10	1			
<i>cf. Prunus sp.</i>	cf. blackthorn/ cherry								4							
Maloideae	hawthorn group								1	10	1	3				
<i>Fraxinus excelsior L.</i>	ash								3							
Indeterminate	diffuse						8	2	6	4						
Indeterminate	bark										2		2			
Totals		30	20	30	30	30	30	30	50	50	50	50	50			

Table 3: Charcoal present in sub-samples, showing fragment count

Inner hengi-form ditch

Samples from the inner hengi-form ditch G2 and blocking ditch G6 were also dominated by oak, with a few small roundwood fragments of blackthorn/cherry type. The sample from G2 appeared during excavation to represent the remains of a burnt plank, and the charcoal is consistent with this interpretation. It is likely that the assemblage from this ditch represents a different collecting strategy or activity from the other Early Bronze Age samples.

Outer hengi-form ditch and associated features

Charcoal from the suspected timber revetment slot G1.1, believed to be Early–Middle Bronze Age in date, was entirely composed of oak charcoal. A single fragment exhibited tyloses, but the condition was particularly poor, with heavily fragmented slivers. The assemblage probably represents a single burnt timber. It certainly contrasts with the Middle Bronze Age samples from the outer ditch: they produced notably mixed assemblages (Table 1), with roundwood fragments, which are characteristic of domestic-type waste fuel. The sample from pit G8, located just outside the outer hengi-form ditch (Fig. 5), also produced a more diverse assemblage, with significant quantities of roundwood including young oak stems, hazel and hawthorn type. This is consistent with the collection of branches from local woodland or hedgerows, rather than suggestive of a deliberate and focussed selection (as indicated by the mature oak-dominated samples of the earlier phase). The insect tunnels present in some alder fragments from sample 211, from the upper fill of the western side of the outer hengi-form ditch, are consistent with the gathering of deadwood (the wood-boring beetles having inhabited the wood post-death).

It is noteworthy that several taxa (alder, ash and willow/poplar) were recorded in the later Middle and Late Bronze Age phases that were not identified in the earlier ones. Alder and willow/poplar prefer wetland-type habitats, and ash is frequently found as a coloniser tree. Although the use of these taxa may indicate a change in the openness of the local landscape, or availability of resources, it is more likely to reflect a difference in the types of activities or depositional episodes from which the charcoal originated. Most of the Early and Early–Middle Bronze Age samples derived from single-event or specific deposits (such as burnt timbers), whereas the later samples represent more mixed-event debris and/or slower accumulation of waste.

Charred Plant Remains

By John Giorgi

Six flots from the twenty processed samples were found to contain small amounts of charred plant remains, largely cereal grains. These include two Early Bronze Age samples associated with the hengi-form monument, which produced a grain of possible hulled emmer/spelt wheat (*Triticum dicoccum/spelta*) from ditch fill G5, and a possible grain of free-threshing wheat (*T. aestivum* type) in ditch fill G1.2. A few fragments of *Corylus avellana* (hazel) nutshell were also found in ditch fill G5 and one *Galium* (bedstraw) seed in ditch fill G1.2, which may be from a wild plant or an arable weed.

Small charred cereal assemblages were identified in three of the Late Bronze Age pits in G16. One contained several *T. dicoccum* (emmer) wheat grains, while all three contained grains of *Hordeum vulgare* (barley), with the recovery of twisted grains indicating the presence of six-row hulled barley. A single hazel nutshell fragment was found in one of the pits.

A small cereal grain assemblage was also recovered from an organic layer near the base of pit G18 (Pl. 3), including evidence for both hulled wheat and hulled barley. No artefacts were recovered from the pit to assist with dating it, but the presence of these hulled grains could indicate that this feature also dates to the Bronze Age, although both commonly occur in Iron Age and Roman assemblages as well.

DISCUSSION

The intensity of prehistoric (and later) activity within the Trent Valley around Willington has long been known through aerial photographic surveys. This activity has been explored in particular to the south-west of the village through extensive archaeological excavations such as those carried out in advance of quarrying, as described by Wheeler (1979) and Beamish (2009), and to the north by work carried out ahead of the construction of Mercia Marina (Brightman and Waddington 2012). The excavations at Etwall Road, Willington described in this article have provided further evidence of both settlement and ritual activity dating to the Bronze Age, and have helped to elucidate the date and function of two ring ditch monuments previously known only through aerial photography. However, the excavations have also raised a number of questions which the nature of the archaeological remains encountered makes it difficult to answer.

Hengi-form monument

A lack of available dating evidence means that no construction date is known for the hengi-form monument in Area 2. Radiocarbon dates from ditch G6 blocking the south-east causeway through the inner ditch, suggest that the originally penannular ditches were made fully annular in the early part of the 2nd millennium BC, roughly at the same time as central pit G7 was added (Table 1). The monument is typologically characteristic of either a Late Neolithic or Early Bronze Age date, however, and it may have been in existence for half a millennium or more before its layout was altered. This is tentatively supported by the presence in the outer ditch, albeit residually, of a potsherd that probably came from a Later Neolithic Grooved Ware vessel, while the recovery of a probable Earlier Neolithic sherd, also from the outer ditch, may indicate an even earlier origin.

Close correlation between the course of the inner and outer ditches of the hengi-form monument (Fig. 5), both of which had a causeway to the south-east and possibly also to the north-west, suggests that the two were set out at the same time. How they controlled the space that they defined is less clear, however: no indication was given by the ditch fills of whether banks which presumably accompanied the ditches were internal or external. One of the field ditches in G13 extended southwards towards the monument, stopping just 2m away (Fig. 4) — did the ditch terminate here in order to leave an access point between itself and the monument's outer ditch, or did the remains of the ditch simply peter out due to a rise in the level of its base as it encountered an external bank around the monument? Was the interstitial area between ring ditches G1 and G2 left clear to allow access, or did it contain the bank material from both ditches? The latter explanation is perhaps more likely, as no trace of the furrow that crossed the centre of the monument survived within the area defined by the outer ditch (Fig. 4), suggesting that its level rose as it encountered bank or mound material — yet the furrow that crossed the eastern side of the monument did continue across the area between the two ditches, which makes it more likely that there was only mound or bank material within the area defined by the inner ditch. The location of pit G8 (Fig. 5) at least suggests that there was no bank along the outside of the outer ditch: the Middle Bronze Age date assigned to it is tentative, based solely on the character of its charcoal assemblage, but if the dating is correct then it seems unlikely that it would have been dug through bank material.

Even though no human remains were found within central pit G7, its shape, profile and location suggest that it was a grave, and the Early Bronze Age Food Vessel and flint toolkit found within it are plausible as grave goods. The soil's acidity may well be the reason for

the absence of human remains — Wheeler commented on a similar problem with bone preservation at Willington Quarry (Wheeler 1979, 73), and no skeletal remains were found in the primary burial in Barrow 4 at nearby Swarkestone (Greenfield 1960, 6). There does also seem to have been a coffin present within the grave, although the precise manner of its construction is unclear. Carbonised coffins made from hollowed-out tree trunks have been excavated elsewhere, e.g. at Bishop's Waltham in Hampshire (Ashbee 1958, 146–148) and at Deeping St Nicholas in Lincolnshire (French 1994, 25), while a 'boat-shaped' soil stain in the primary burial in Barrow 4 at Swarkestone may represent a similar phenomenon (Greenfield 1960, 6). Analysis of the charcoal from pit G7, however, makes it clear that oak heartwood was present, meaning that planks rather than a hollowed-out tree trunk must have been used. Such coffins are less common, or at least are less commonly recognised from the ephemeral soil stain which is often all that remains, but examples are known from, for example, Oxfordshire and Wiltshire (Whittle *et al.* 1992, 183). It is unclear whether the ends of the Willington 'coffin' were closed or left open: little charcoal was present at the south-west end and none at the north-east, but uncharred wood may have been used. The reason why the Food Vessel had been squashed flat in antiquity is also uncertain: was this a deliberate, symbolic act of destruction, or no more than accidental damage as the body was lowered into a coffin that was slightly too small to accommodate both side by side?

Although the hengi-form monument seems to have acquired a funerary function in the early 2nd millennium BC, it is unclear what structural changes the monument underwent other than the blocking of its entrances and the insertion of the central grave. The pattern of survival of furrows across the monument tentatively suggests that a mound may have been erected over the area defined by the inner ditch, but truncation by ploughing has meant that none of the material used to create this putative mound survived. A phase of timber revetment does seem to have occurred at some point between the monument's construction and the formation in the Middle Bronze Age of a layer of turf (G1.2) in its outer ditch (Fig. 6: a–d). The very stony central fill in the base of the ditch (G1.1) is interpreted as packing material around upright timber planks, perhaps inserted to act as a screen to the interior, while a wattle fence or screen (G10) also seems to have been placed across the blocked causeway through the outer ditch.

The hengi-form monument remained as a focus for some level of activity in the Middle Bronze Age and beyond, as demonstrated by the presence of two charcoal-rich deposits in the uppermost surviving fill of the outer ditch, but the level of plough truncation means that no evidence survives for these later activities. The monument was clearly respected by the ditches of field system G13, but the date of this field system is unknown beyond the likelihood that it was prehistoric.

Late Bronze Age activity

Pit cluster G16 (Fig. 3) accounted for the entire finds assemblage from Area 1, the nature of which is strongly indicative of domestic and/or craft activity. The four loom weights from pit F1025 are evidence of weaving, while at least some of the pottery may have been made locally — the textile impressions on two potsherds from pit F1023 may even indicate that the pots were made in the same area as the weaving was carried out, though this is only conjecture.

Less clear, however, is whether the pits formed part of a domestic/craft activity area, the remainder of which lay beyond the excavated area, or whether the finds from them originated elsewhere. The exceptionally high number of heat-affected stones in pits F1019 and F1023 at least suggests that these pits were used for heating water, but the positioning of the loom

weights on the very base of pit F1025, for example, suggests an element of ritual deposition. Added to this is the fact that the six pits in G16 had been dug into an outcrop of sand — the surface of the geological deposits in the rest of Area 1 was gravel — which suggests that they were dug as quarry pits targeting the sand, whose location was therefore determined primarily by geological considerations rather than by the location of any related settlement.

The function and date of the ring ditch adjacent to pit cluster G16 are both unclear. Not all of the ditch was exposed within the excavated area, but it appears to have had a single entrance, with no surviving evidence of any internal features. No functional explanation is obvious for the ditch's inward-turning terminals, suggesting that they were designed to enhance the visual aspect of the entrance; the varying dimensions of the ditch on either side of the entrance also had a degree of symmetry that appears to have been more than coincidental. This implies that the ditch defined more than just a livestock enclosure, yet the complete absence of anthropogenic material recovered from the ditch makes it unlikely that the enclosure had a domestic function, unless the ditch was deliberately kept clean and any waste material placed in pits such as G16. There is a slight possibility that the ditch represents the eaves-drip gully of a roundhouse, but such a building would have been exceptionally large, and the absence of anthropogenic material from the ditch again suggests a non-domestic function.

Was ring ditch G14 another ceremonial monument, albeit defined by a single, much less substantial ditch than the one in Area 2? If so, then the ring ditch may have been significantly earlier than the adjacent Late Bronze Age pits — this is perhaps supported by the absence of any finds in the ditch (or at least the part of it within the excavated area), in contrast with what was recovered from pits G16. There is a possibility that pits G15 were earlier as well: isolated pairs of small pits are a recognised feature on prehistoric sites, frequently but not always containing Late Neolithic or Early Bronze Age pottery such as Grooved Ware (Garrow 2006), and there is a chance that pits G15 were in fact of that date. However, the small size of ditch G14 suggests that the monument may no longer have been a significant earthwork in the Late Bronze Age if it were contemporary in origin with the hengi-form monument in Area 2, and the juxtaposition of the ring ditch and pits G16 does seem more than coincidental. The suggested interpretation of the ring ditch is therefore that it was a Late (or possibly Middle) Bronze Age ritual enclosure, evidence for the use of which has been lost to plough truncation.

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