TWO LATE NEOLITHIC RING DITCHES AND A HENGIFORM MONUMENT, A MIDDLE TO LATE IRON AGE FARMSTEAD AND A ROMAN STONE MAUSOLEUM AT AREAS 7, 8 & 9, PASSENHAM QUARRY, CALVERTON, MILTON KEYNES

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Excavations at Areas 7, 8 and 9, Passenham Quarry in 2014 uncovered features which largely dated from the late Neolithic to the Roman periods. Two late Neolithic ring ditches and a probable hengiform monument were found, directly to the south of four early Bronze Age ring ditches previously recorded in the quarry to the north-east. Collectively, these seven features formed a line of funerary monuments fronting the river Great Ouse. The two late Neolithic ring ditches contained assemblages of pottery and/or worked flint and the hengiform ditch contained cremated bone from at least three people as a single backfill deposit on its south-eastern side. The monument was still respected after disuse since a separate cremation on its south-western side cut the top of its backfilled ditch. Two adjacent unurned cremation pits lay external to the north-east of the monument. About 10 late Neolithic pits were found in a loose group directly to the west of this hengiform monument and may have been related to domestic activity. Two of these pits contained pottery, three others worked flint, and some provided evidence for cereals and other plants and trees including hazel growing nearby. One contained cremated human bone, pottery and two hazel nutshell fragments.

A middle to late Iron Age farmstead in the form of a sub-rectangular enclosure, with an internal ring ditch, an enclosure and pits, was found in the same area as most of the late Neolithic pits. A possible shrine of Roman date had been constructed on the north-eastern part of the site: this was rebuilt in the middle to late Roman period as a stone mausoleum. This structure was c.200m south of a similar contemporary stone mausoleum recorded previously in the quarry. The mausoleum excavated in 2014 contained two internal cremation burials. Externally there were two inhumations and two cremations respecting it. To the south was a routeway which led from a Roman settlement, possibly a villa, located directly east of the excavation area, towards the river. The routeway was itself respected by a further two inhumation burials on its northern side.

INTRODUCTION

An archaeological excavation of 5.6ha was carried out by MOLA (Museum of London) in 2014 at Calverton, Milton Keynes, near Passenham, Northants (Fig 1, NGR SP 7770 3880) for GRS Roadstone Ltd. No formal brief was issued but a Written Scheme of Investigation (WSI) was produced for the present site (NA 2011). The work was overseen by Phoenix Consulting on behalf of the client and

followed on from previous excavations over 2006/7, directly to the north-east and to the south-east. These excavations were carried out for a separate quarry company, and although referred to are not part of this present publication.

The site lies on the west side of Calverton parish, adjacent to the river Great Ouse and *c*.200m south-west of the village of Passenham. The entire site was under pasture prior to the start of quarrying. The 2014 excavation followed on from a staged programme of archaeological and geological work which examined the whole area of the proposed quarry, including to the north-east and south-east of the present excavation (Fig 1). This work comprised a borehole survey carried out by RMC Geological Services (RMC 2000), followed by a desk-based assessment (Guildhouse 2001), geophysical, topographic and metal detecting surveys (Morris & Chapman 2002), trial trenching (Walsh *et al* 2003; Morris 2006) and two excavations (Walker 2009; Walker 2011).

The author would like to thank Nick Crank, Milton Keynes Senior Archaeological Officer, who monitored the project on behalf of the local authority, GRS Roadstone Ltd for funding the works and Andy Richmond (Phoenix Consulting) for overseeing them. The project was managed by Adam Yates. Fieldwork was directed by Paul Clements and an assessment report and updated project design was then written (Atkins 2018a). Some of the specialists' reports written for the assessment report have been incorporated into the publication text. Proof reading was carried out by Chris Chinnock, Mark Holmes and Tracy Preece.

The archive for the archaeological excavation is held by Buckinghamshire Museums under the code AYBCM: 2006.145.

Geological and Archaeological Background

The borehole survey carried out by RMC Geological Services (RMC 2000) showed that the underlying geology of the site was clay, 2.70m to 4.30m deep, the depth increasing nearer the river. Above this clay was a deposit of gravel up to 3.0m thick. The overburden recorded in the survey had a combined depth of 0.80-1.20m, comprising topsoil (0.20-0.30m deep) and clay subsoil.

During archaeological evaluation of the site (Walsh *et al* 2003), a distinct difference was observed between those trenches adjacent to the river and others across the rest of the site. Those close to and parallel with the river were noticeably dryer with less alluvial build-up than those away from the river. This would seem to indicate the presence of a gravel bank or island running alongside the river, with the rest of the land potentially liable to periodic flooding.

The 2014 excavation area was subjected to geophysical and topographical survey (Morris & Chapman 2002). The topographic survey found reasonably well-preserved ridge and furrow earthworks of the former medieval field system in the southern half of the site. An east to west-aligned scarp in the north-eastern extent, recorded over a 300m distance, was thought to be a former headland. A north to south aligned raised routeway, formed of a bank flanked by ditches, was seen in the northern extent and was thought to be post-medieval in date, perhaps as late as the 19th century. A mound in the south-eastern corner seems to post-date the levelling of the ridge and furrow. The geophysical survey examined nine small areas across the site (Morris & Chapman 2002, fig 7). Only occasional readings above the background level were recorded with most of these being weakly magnetic, and no anomalies were found (Morris & Chapman 2002, 5-8).

A trial trench evaluation was carried out during 2002 to 2003 across the whole proposed area of quarrying (Walsh *et al* 2003). Within the present site were eight trenches. The most significant features were found in Trench 14. Within this 80m-long trench, remains of two ring ditches, [1405] and [1407], were found at the north-eastern extent. These equate to RD5 and RD6 in the present report. Iron Age pottery was found in the trench. Other features consisted of two shallow undated gullies found in Trench 12 and two possible undated treethrows uncovered in Trench 10.

A trial-trench evaluation to the south-east of the present site targeted geophysical anomalies. These proved to be a Roman settlement, possibly a villa complex, which survived in good condition (Fig 1; Morris 2006). The then quarry owners decided this area was to be left *in situ* and no further archaeological work took place here. To the north-east of the present site, excavation took place during 2006 and 2007. Within Areas 3 and 4,

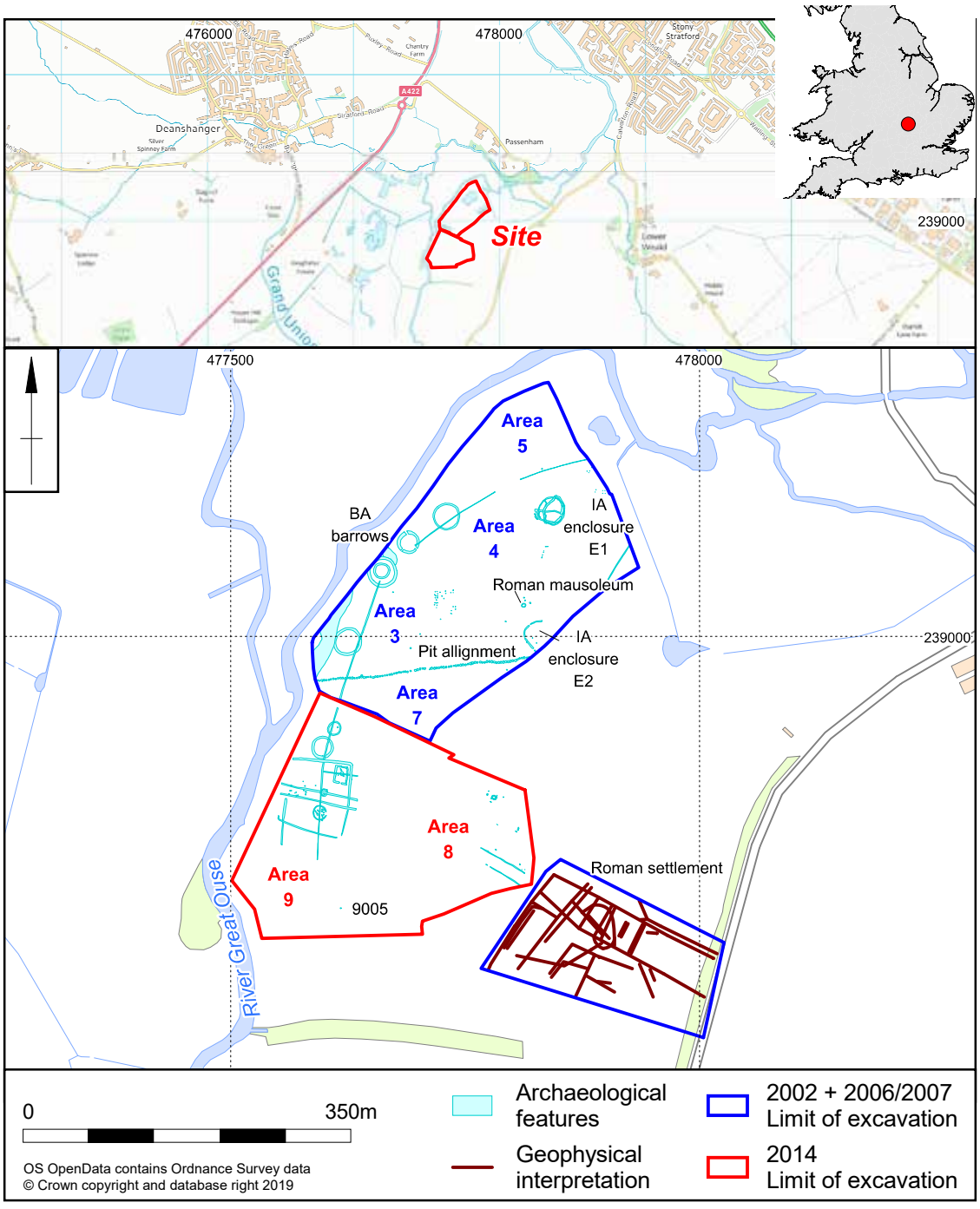

FIGURE 1 Site location in relation to other archaeological work at Passenham Quarry

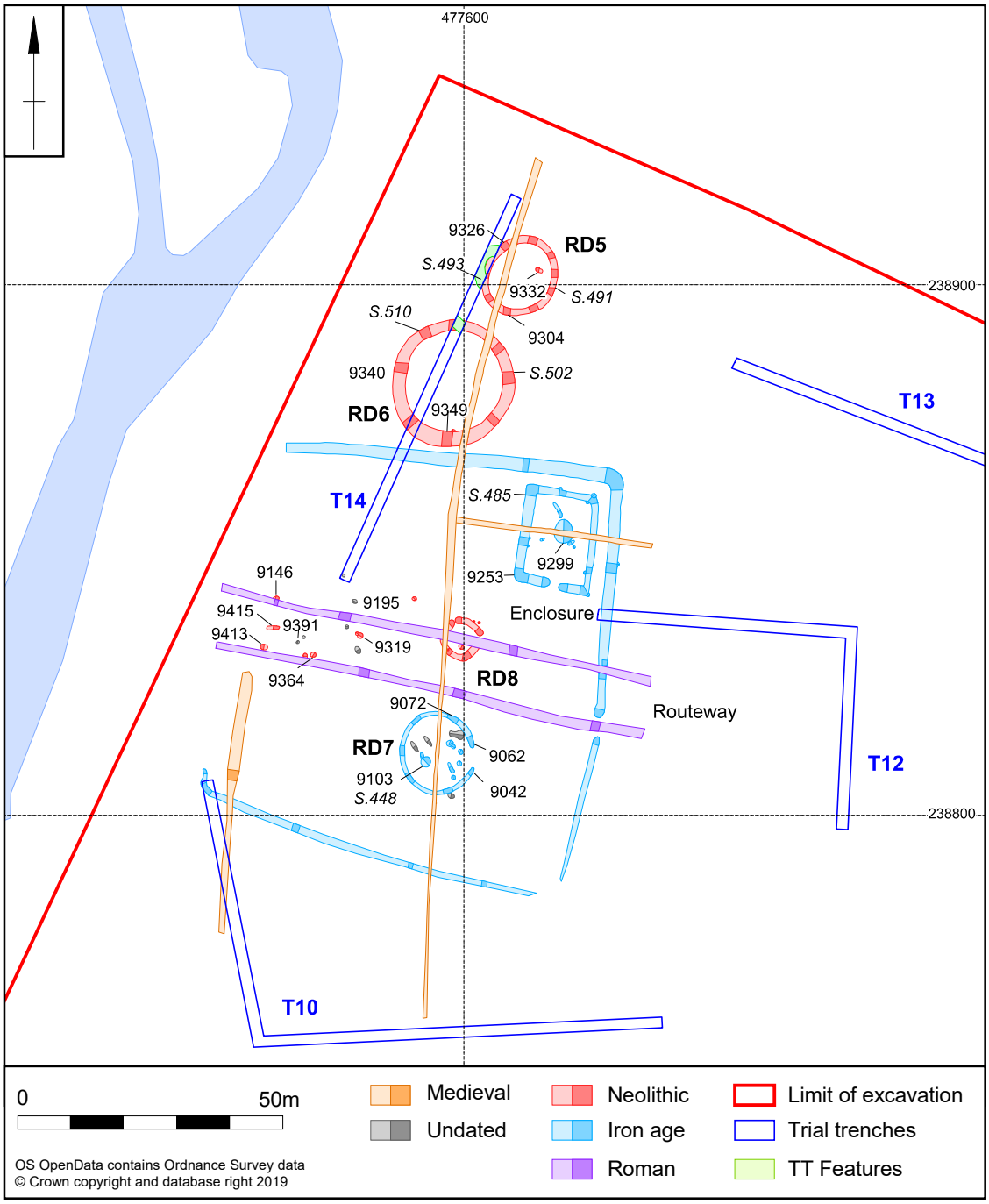

FIGURE 2 Location of features within western side of 2014 excavation

the remains of four Bronze Age ring ditches were revealed, although they were heavily truncated and there were no internal features or burial deposits (Walker 2009). At the southern extent of Area 3 were 47 pits making up part of a pit alignment. Pottery from the secondary fills of the pits dated to the early Iron Age. An isolated group of postholes produced little dating evidence but contained large quantities of charred grain.

In 2008 and 2009, two seasons of excavation took place in Areas 5, 6 and 7 (Walker 2011). The excavations uncovered more of the pit alignment, revealing a further 45 pits, again producing early Iron Age pottery. An irregular Iron Age enclosure was probably created during the late middle Iron Age. It was redefined and maintained into the late Iron Age. East of the enclosure were two six-post structures. There was also part of an enclosure comprising short lengths of gully. A mid/late Roman circular stone mausoleum/mortuary enclosure contained a cremation burial mixed with animal bone and a large quantity of iron nails, both new and used.

The excavation results

Archaeological features were encountered in two parts of the 2014 excavation area. In the western-most part of the site a group of features from the late Neolithic to post-medieval period were uncovered near the river (Fig 2). In the eastern part of the site there were a series of Roman features (Fig 10). The general chronological development of the site is summarised in Table 1.

Late Neolithic Features (Fig 2)

Ring Ditch 5 (RD5)

At the north-western corner of the site, RD5 lay 37m to the east of the present course of the Ouse and *c.*75m to the south of RD1, excavated in 2006 (Fig 1; Walker 2011). RD5 was oval in plan with an external diameter of c.16m (north – south) by c.14m (east – west). The ditch was continuous with no entranceway and was 1.14m-1.77m wide and 0.20m-0.56m deep with moderate sloping sides and a slightly rounded base (Fig 4, S.491 and S.493). Nine sections were excavated through the ditch, comprising about a third of the total circumference. The backfill comprised either one or two deposits. The primary fill varied from a light grey-brown silty sand with up to 30% gravel to a dark reddish-brown sandy silt with moderate gravel inclusions and very occasional charcoal flecks. The upper deposit, or sections where there was only a single deposit, also varied, most being a dark red-brown sandy silt, though sometimes there were mid yellow-brown sandy silt patches within this deposit. Inclusions consisted largely of moderate small rounded and angular gravels with up to 1% charcoal flecks.

Pottery derived from RD5 came almost entirely from one ditch section [9326] on the north-western side which contained 75 sherds (0.49kg). These comprised Grooved ware and included small bowls (Fig 14; see Chapman below). The only other pottery from RD5 consisted of a single sherd (15g), a carination/shoulder from a vessel, recovered from a ditch section at the eastern side of the ring ditch. Five worked flints including two blades derived from four contexts in this ring ditch. An environ-

Table 1 Site chronology

Period	*Description*
Late Neolithic	Ring ditch 5; ring ditch 6; ring ditch 8 (mortuary enclosure or hengiform monument); *c.*10 pits
Mid-late Iron Age (*c* 2st century BC – 1st century BC)	Sub-rectangular enclosure. Internal ring ditch 7, an internal enclosure and some pits
Roman (mid 2nd century AD+)	East to west aligned routeway; Shrine/mausoleum; four inhumations and four cremations; a few pits
Medieval and post-medieval	Ridge & furrow Field and ditches

FIGURE 3 Late Neolithic ring ditches (RD6 and RD5), looking north

mental sample from the ring ditch produced only sparse charcoal fragments (Fryer 2018, table 16).

Within the north-eastern extent of RD5 was a single small sub-rounded pit [9332], 0.85m in diameter and 0.31m deep. Its primary fill, 011m deep, was a sterile white to light brown silty sand with moderate to frequent gravel which may be natural silting/erosion. Its upper fill, a mid to dark brown silty sand with occasional small stones and charcoal flecks, contained three sherds (20g) of late Neolithic pottery.

Ring Ditch 6 (RD6)

Ring ditch 6 lay 4.0m to the south-west of RD5. The ditch was continuous with an external diameter of 24m. RD6 was examined in eight excavation slots and was between 1.97m and 3.10m wide and 0.50m to 0.84m deep with moderate to steep sides and a flat base (Fig 5, S.502 and S510). The ditch mostly had at least two backfill deposits, with up to eight in places. No recuts were recorded, although the drawing of Section 510 may suggest there had been two recuts. At Section 502 there seems to have been a slumped natural deposit at the eastern side. The fills were all largely sterile but varied in colour and inclusions. These ranged from mid reddish-brown silty sand with moderate to frequent small to medium size stones, pebbles and gravel. Other fills were mid to dark reddish-brown to a mid to dark brownish-grey sandy silt with occasional small stones including natural flint and gravel as well as rare charcoal flecks.

No pottery was recovered from the feature, although 29 worked flints were found from two excavated slots [9340 and 9349] as well as a further six worked flints from other excavated slots. The flint comprised mostly waste flakes and blades as well as a core (Table 2). An environmental sample from the ring ditch produced only sparse charcoal (Fryer 2018, table 16). There were no internal features within the ring ditch.

Ring Ditch 8 (RD8)

Ring ditch (RD8) was probably a hengiform monument. It lay *c*.25m to the south of RD8 in the middle of the western part of the site (Figs 2 and 6). RD8

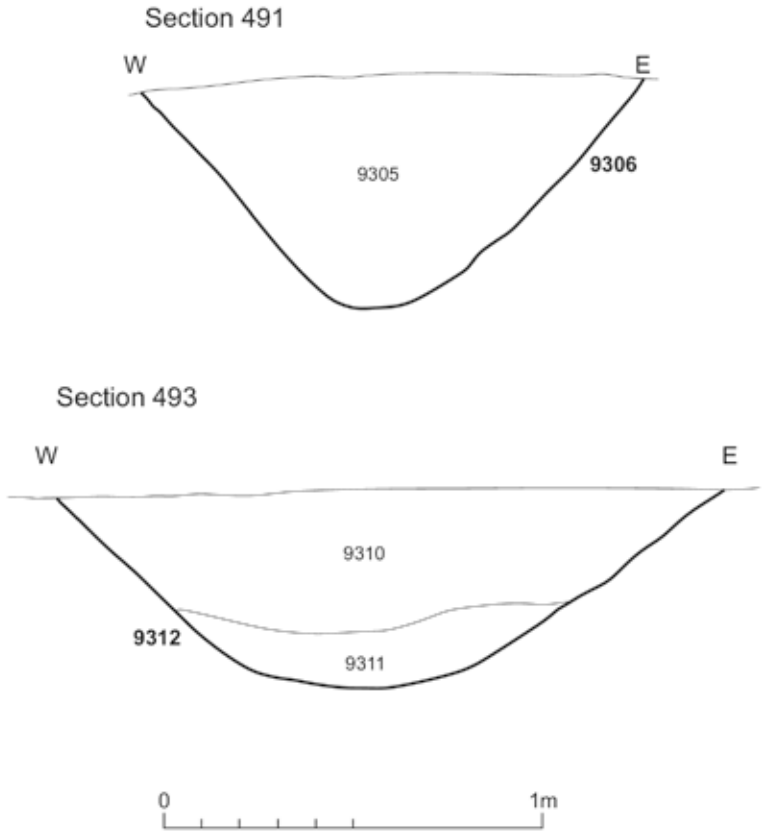

FIGURE 4 Sections through RD5

was sub-circular with a *c*.8.0m external diameter and measured *c*.5.0m-5.50m internally. It was formed by two curvilinear ditches which respected each other. On its north-western side there was a gap only 0.20m wide between the two ditches, though the gap between them at the eastern side was far larger and was probably an entranceway. The size of this suggested entranceway was uncertain as a Roman routeway ditch cut it at this location, but it was more than 0.40m and less than 2.20m wide. The southern curvilinear ditch may have been recut and was recorded as such in only one excavated section at the north-western entranceway. If there had been an original ditch it may not have survived elsewhere as it was seemingly shallow, around 0.15m deep. The southern recut curvilinear ditch and the northern curvilinear ditch were similar in size. They were between *c*.1.0m to 1.30m wide and between 0.31m and 0.42m deep with moderate to steep sides and a flat base (Fig 6, S.465 and S.468). Five sections were excavated through the two curvilinear ditches but no artefacts were recovered.

The backfill of the segmented ditches varied and in one area comprised deposits that had been tipped into the ditch from the south, suggesting that the monument had been infilled quickly, though from different sources. The northern segmented ditch [9184] was backfilled with a single deposit recorded as a slightly reddish-brown silty sand which contained some natural flint as well as occasional charcoal flecks. The primary fill of ditch section [9189] was a light grey-brown sandy silt with a few small to large rounded and sub-circular stones (30mm to 80mm in size) and occasional charcoal flecks. This deposit was sealed by a light reddish-brown sandy silt with occasional small stones and charcoal flecks. The primary fill of ditch [9202] was a light grey-brown sandy silt with some small to medium stones (10mm-100mm in size)

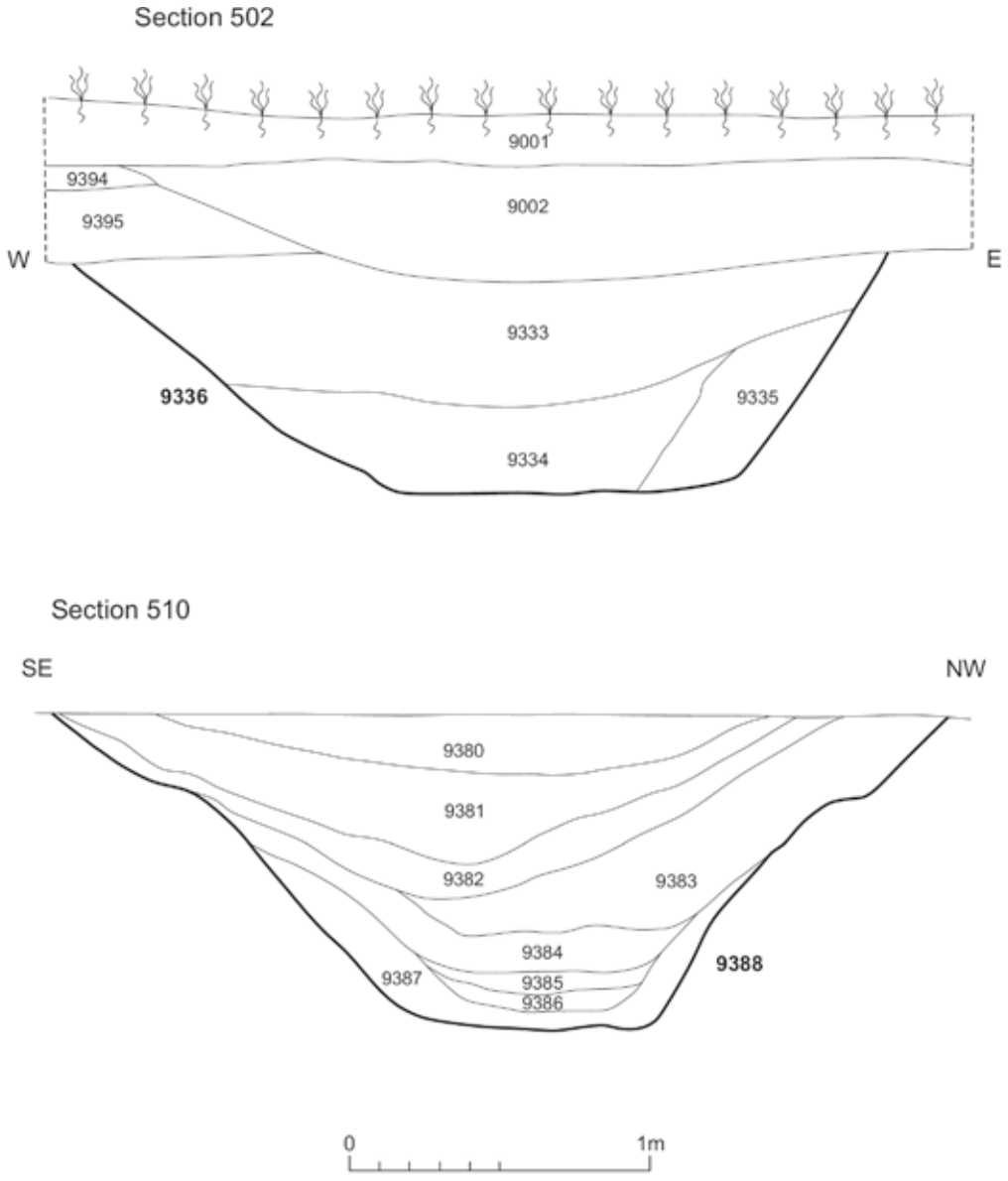

FIGURE 5 Sections through RD6

and some charcoal flecks. Sealing this deposit was a light reddish-brown sandy silt with a few small stones 10-60mm in size. Within the deposit was a tip line comprised of 4.15kg of cremated human remains, which had been put in from the south side of the ditch as a single deposit. The cremated material comprised parts of at least three individuals of which one could be identified as female. An environmental sample produced no charred seeds, but there were small quantities of charcoal (Fryer 2018, table 24). A radiocarbon date from cremated bone (context 9200) gave a late Neolithic date (at 95.4% probability) at between 2905–2695 cal BC, 4220 ± 30BP, Beta 522091 (Fig 17).

After disuse, the hengiform monument seems to have continued to be respected by other features. A

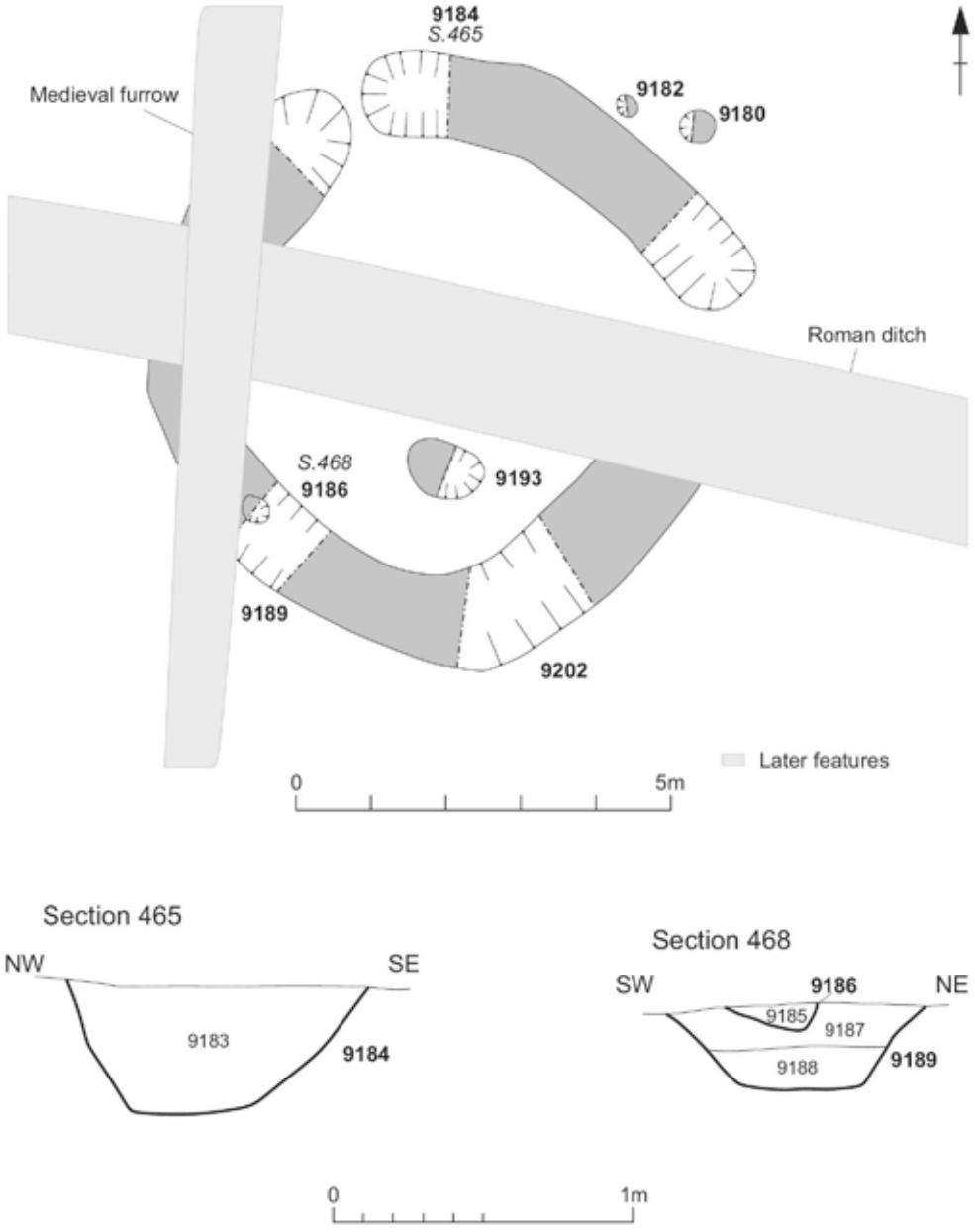

FIGURE 6 Plan and sections of ring ditch 8 (RD8)

small pit [9186] containing cremated human bone, 0.30m in diameter with irregular sloping sides, was cut into the backfilled hengiform ditch on the south-western side of the former monument, c.3m to the west of the aforementioned human bone deposit (Fig 6, S.468). This pit contained a light grey brown sandy silt and 217g of human remains.

Within RD8 was a single undated pit [9193]. It is uncertain whether this related to the hengiform monument or a pit from the middle to late Iron Age farmstead. Pit [9193] measured 0.77m by 0.61m and 0.15m deep and was filled by a sterile deposit.

Two adjacent undated cremation pits, [9180] and [9182], lay directly to the north of the monument's north-eastern side: it is uncertain whether these pits were contemporary or post-dated its backfill. Pit [9180] measured 0.34m in diameter by 0.12m deep and was filled with an orange to grey-brown sandy clay silt which contained human cremated bone weighing 477.3g. Pit [9182] measured 0.25m in diameter by 0.16m deep with steep sides and a rounded base. It was filled with a mid grey-brown clayey sandy silt which contained human cremated bone weighing 31.7g. Pit [9182] was environmentally sampled but produced only extremely sparse charcoal flecks (Fryer 2018, table 24).

Pits

It is likely that a group of about ten pits lying *c*.50m to the south of RD6 and more than 7.0m to the west of RD8 were late Neolithic in date. The group extended over an area *c*.27m east to west by *c*.20m north to south. The pits were mostly of a similar size, between 0.72m and 1.02m in diameter and 0.15m to 0.35m deep with bowl-shaped profiles. Most of the pits were undated, though five [9146, 9319, 9364, 9413 and 9415] had pre-Iron Age artefacts in their backfills. It is possible that five of the other six undated pits in this area belonged to this period, having a similar size and backfill to some of the dated pits. At least two other pits in this same area have been dated to the middle to late Iron Age (see below) and a further pit in the same location remains undated.

The fills of the five pits varied. In pit [9146] there were two backfill deposits (Fig 7, S.459). The primary fill, 0.27m thick, was a burnt deposit which was a very dark grey brown, almost black silty sand with a little clay, containing a large quantity of pottery primarily at the base of the fill overlying the natural. In this deposit there were a few burnt stones and *c*.10% of the fill comprised charcoal flecks. There was some worked flint and cremated human bone, which was concentrated near the top of this deposit on the southern side (Fig 7). The upper fill, 0.15m thick was a relatively sterile mid reddish grey brown sandy silt with clay. There were only *c*.1% charcoal flecks and significantly no artefacts or ecofacts. Pit [9364] contained two fills. The primary deposit was a dark grey-brown silty sand with a little clay and had *c*.5% small gravel inclusions and *c*.5% charcoal flecks. Its upper fill contained a mid red-brown silty sand with *c*.5% small gravel inclusions and *c*.1% charcoal flecks. Pit [9319] had three very different backfill deposits (Fig 7, S.495). The primary fill was a sterile silting deposit, 0.06m thick. This was overlaid by a 0.15m thick dark grey-brown silty sand deposit which contained a little clay. Within it was a large quantity of charcoal flecks, *c*.10% of the volume, and 5% small to medium-sized stones as well as most of the pottery assemblage, concentrated in the middle part of the fill. The upper fill was a mid-orange to grey-brown silty sand with 5% small gravel pieces, containing a little pottery. Pits [9413] and [9415] had similar single backfill deposits which consisted of dark greyish-brown clay silt, although their inclusions varied and comprised respectively from 2% and 5% gravel and natural flint.

Pits [9146 and 9319] contained moderate quantities (0.399kg and 1.60 kg respectively) of late Neolithic pottery and flint, whilst a further three pits [9364, 9413 and 9415] contained worked flint only. Pit [9319] contained a significant part of a Grooved ware vessel as well as a small bowl and cord decorated bowl, whilst [Pit 9146] had five sherds of Grooved ware, a small lugged bowl (Fig 14, nos 1-4; see Chapman) and body and rim sherds from several bowls. Charcoal from pit [9319] was radiocarbon dated (95.4% probability) to between 2623–2473 cal BC, 4030 ± 30 BP, Beta 522092 (Fig 17). A nutshell from pit [9146] was radiocarbon dated (95.4% probability) to between 2568 and 2346 cal BC, 3950 ± 30 BP, Beta 522093. There were 30 worked flints from pit [9146] including an axe trimming flake and a core. A small quantity of human cremated bone (11.3g) was recovered from pit [9146]. Pit [9319] also contained 46 worked flints including a core and a scraper as well as hazel nutshell fragments. Other pits have been tentatively dated to the late Neolithic by the presence of worked flints. These include pit [9364] which had 12 worked flints including a scraper. Adjacent pits [9413] and [9415] contained collectively seven worked flints comprising blades, flakes and a debitage fragment. Three of the pits were sampled for environmental evidence [9146, 9319 and 9364] and all produced similar results (Table 7). Hazel macrofossils were recovered in moderate to large quantities in all the environmental samples as well as very small quantities of cereal grains in two pits and small or moderate quantities of charcoal in all three pits.

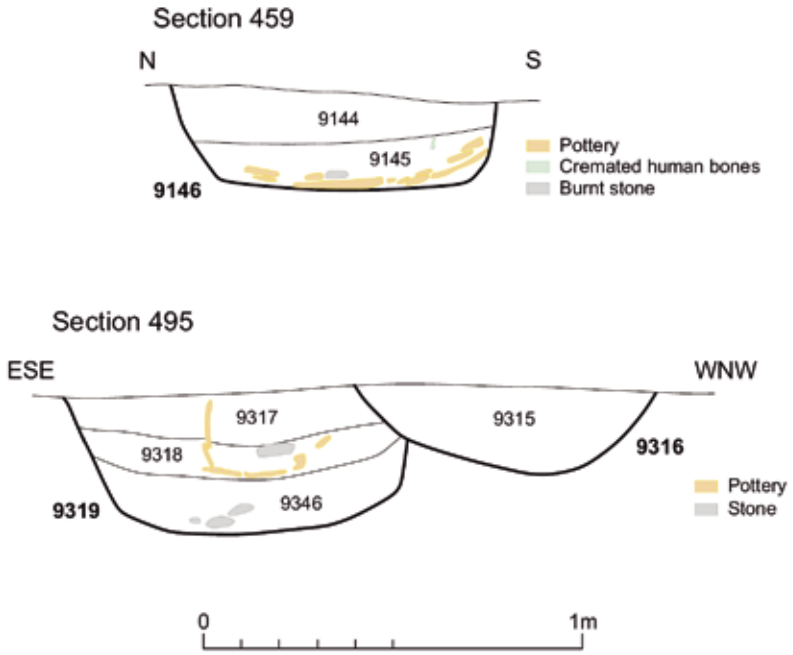

FIGURE 7 Sections through late Neolithic pits [9146] and [9319]

Isolated Pit [9005]

An isolated pit [9005] at the far southern extent of Area 9 was 0.05m in diameter and 0.22m deep, with moderate sloping sides and a flat base (Fig 1). It contained a single burnt backfill deposit which consisted of a friable dark grey to black sandy silt with 5% poorly sorted sub-angular flint (including some burnt) and heat-affected pebbles up to 20mm in size. It was charcoal enriched with burnt clay flecks. Within this deposit there were five worked flints including a blade.

Middle to Late Iron Age

Sub-Rectangular Farmstead

Directly to the south of the late Neolithic ring ditches (RD5 and RD6) and within the same area as RD8 was a middle to late Iron Age settlement which was probably a large sub-rectangular enclosed farmstead (Fig 2). Two features within this enclosure have been assigned a middle to late Iron Age date; a small rectangular enclosure and RD7. Both of these features were located in the eastern half of the enclosure. A few isolated pits seemingly dated to this phase lay within the western side of the enclosure.

Large Sub-Rectangular Enclosure

The sub-rectangular enclosure was aligned north to south, roughly parallel to the river. It was *c.*80m long and *c.*70m wide; defined on three sides by a ditch which was up to 2.0m wide and 1.50m deep, with the enclosure west side possibly open, facing the river. A *c.*4.0m-wide entranceway lay roughly halfway along its eastern side; the gap at the south-eastern corner may have been where there had been a fence or other feature at this location. Only a small quantity of pottery (87g) was recovered from the enclosure ditch.

Small Rectangular Internal Enclosure

Within the north-east corner of the larger enclosure was a small rectangular enclosure. Its sides were aligned with those of the larger enclosure ditch and measured 16m long by 12m wide. In the middle of its southern side was a *c.*2.0m-wide entrance. The ditch was between 1.18m and 2.10m wide and 0.38m to 0.90m deep (Fig 9, S.485). Its fill contained 87

middle to late Iron Age pottery sherds (weighing 1.42kg), the vast majority being derived from the excavation slot at its south-western corner. The pottery included two part vessels (Fig 15, nos 3 and 4). Five features lay within its northern extent whereas the southern half of the enclosure was devoid of archaeological features. In the middle was a natural hollow [9299], 3.12m in diameter and up to 0.49m deep, which contained 23 sherds (0.24kg) of middle to late Iron Age pottery. An undated small gully lay to the north of the hollow and two undated pits and a possible undated post-hole were to the south of it.

Ring Ditch 7

Ring ditch (RD7) was located *c*.30m to the south-west of the small sub-rectangular enclosure (Fig 8). It was 14m in diameter with a *c*.4.0m-wide eastern entrance [9042] and [9062], facing eastwards towards the eastern entranceway of the large sub-rectangular enclosure. Its ditch varied in size from 0.55m to 1.30m wide and between 0.13m and 0.52m deep. The profile of the ditch also varied from U to V-shaped with moderate or steep sides and the base flat or rounded. The two ring ditch terminals contained moderate quantities of middle to late Iron Age pottery, comprising 57 sherds weighing 0.545kg including at least one partial vessel (Fig 15, no 1). In contrast, two other excavation slots through the ditch produced collectively six middle to late Iron Age pottery sherds (55g) and a further three excavation slots had no artefacts. Two environmental samples taken from RD7 produced small quantities of cereals and herbs (Fryer 2018, table 18).

Remains of pits and postholes lay within RD7 and are likely to represent structural elements of a roundhouse. A pair of doorway post-pits survived, both between 0.88m and 0.90m in diameter and 0.26m to 0.28m deep. Other features within the ring ditch were up to 0.15m deep, except a large storage pit [9103] which lay at the south-western side. This was 1.95m in diameter, 0.90m deep with very steep sides and a flat base (Fig 9, S448). Significant quantities of pottery were recovered from this pit (90 sherds weighing 0.88kg, including Fig 15, no 2) as well as part of a shale armlet. Two environmental samples taken from this pit produced small quantities of cereals and herbs, but also large amounts of charcoal (Fryer 2018, table 18).

FIGURE 8 Iron Age roundhouse (RD7), looking west through the entrance

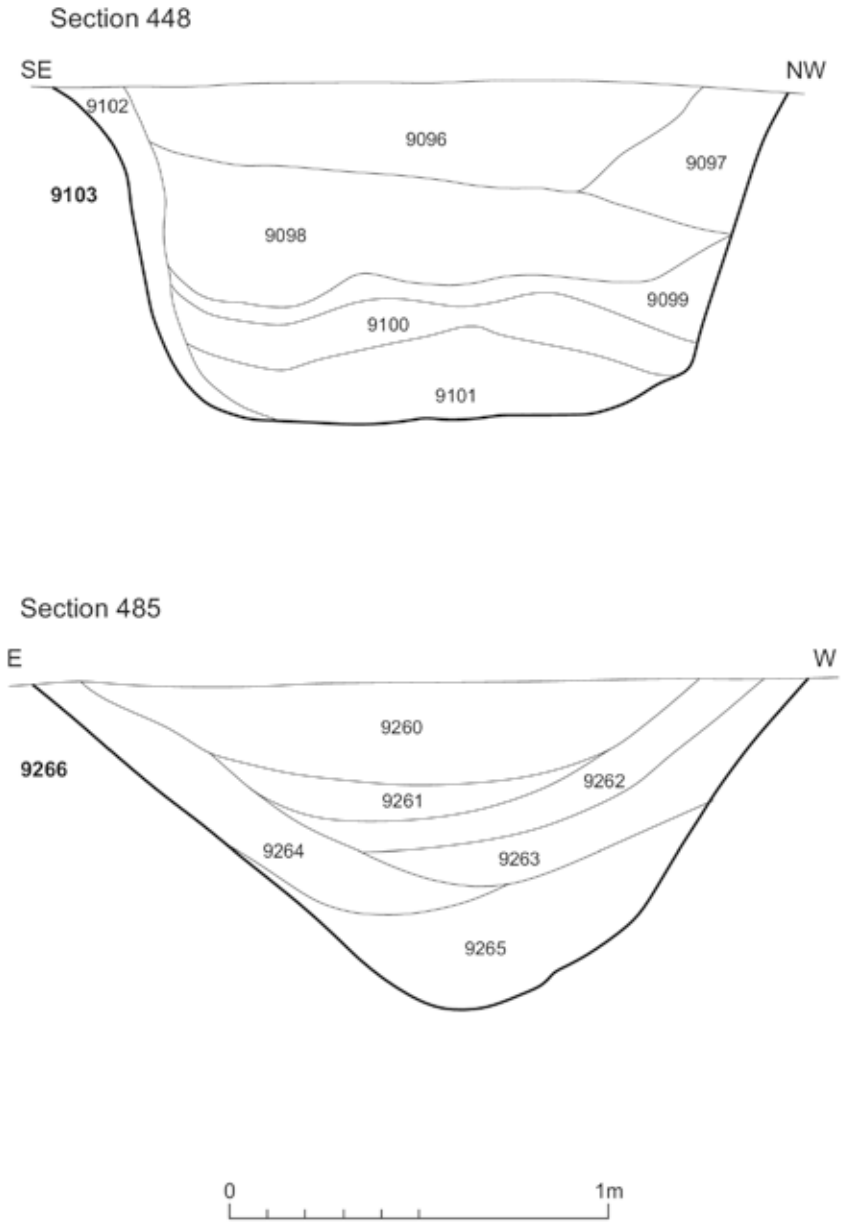

FIGURE 9 Sections through middle to late Iron Age features

Isolated pits within the large sub-rectangular enclosure

At least two of the pits [9195] and [9391] within the western part of the large enclosure in the same area as Period 1 pits (see above) have been assigned to this middle to late Iron Age date. Moderate quantities of middle to late Iron Age pottery were recovered from both pits. Environmental samples from pit [9195] produced some hazel macrofossils (Fryer 2018, table 19).

Roman

Roman activity was identified in Areas 8 and 9. In the former was a possible shrine which had been later reconstructed as a stone mausoleum at the north-eastern corner of the site. Within the mausoleum there were internal cremation burials and pits. External to it there was a further cremation burial, four inhumation burials and a few scattered pits. A routeway passed to the south of the mausoleum, leading from a Roman settlement to the east and continuing on to the Ouse (Figs 1, 2 and 10).

Shrine/Mausoleum (Figs 11 and 12)

Predating the shrine/mausoleum structures were two adjacent tree-throws [8099 and 8101], but their date and significance is unknown. The tree-throws were irregular, both little more than 3.0m in diameter and *c*.0.30m deep. They were filled with a sterile dark brown clay silt and had occasional small gravel inclusions.

The possible shrine was dug through the backfill of both tree-throws and was sub-circular, with an external diameter of *c*.3.90m (Fig 11). It seems to have consisted of a single or possibly two separate gullies with a *c*.0.60m-wide entranceway on the eastern side. Most of the western side was removed by a post-medieval ditch [8054] so its exact shape and size remain uncertain. The gully itself was 0.30m wide and 0.10m deep with a U-shaped profile. It was filled with mid-greyish-brown clay silt containing occasional small stones less than 0.05m long, along with small quantities of grog-tempered pottery.

Within the feature was a build-up of soil comprised of layers (8056, 8059 & 8066) which were collectively *c*.0.30m thick (Fig 12, Section 395), and varied from a mid brown to a grey brown sandy silt with some clay. Cutting layer (8066) was a sterile pit [8061] located within the southern extent of the structure. This pit was 0.60m by 0.40m in size and 0.45m deep (Fig 12). Possibly at the same time the eastern side entrance of the structure was blocked by pit [8070], which was 0.85m in diameter and 0.25m deep. Cutting the enclosure ditch on its north-western side were two probable areas of root disturbance or possibly two small irregular pits [8121 and 8123]. None of these pits contained finds.

The second phase comprised a stone mausoleum which replaced the possible shrine structure. This had a circular stone wall (Fig 12) with an external diameter of 4.80m. A foundation cut was only visible on the eastern outer edge. It is likely that the cut continued closely following the course of the wall, but due to the similarities of the fill with the surrounding material it was not identified elsewhere. No cut was visible on the inner edge, indicating that the internal area of the mausoleum was first reduced down to the natural sand and gravels before the construction of the wall.

The wall was 0.75m wide and survived up to at least two courses in height. The wall consisted of pitched limestone in a herringbone formation with the stone unfaced and of all sizes up to *c*.035m long by 0.12m thick suggesting it was probably the footing for a wall, laid in a trench. The material between the stones was indistinct from the surrounding material and so may have been bonded with the natural sandy clay soils. Where the wall construction passed over a tree-throw an additional course of limestone was used to compensate for the softer fill. Inside and abutting up to the mausoleum stone walls was a layer (8052), 0.40m thick, which comprised a sterile orange-brown silty sandy clay with occasional stones and charcoal flecks.

Cutting into the two layers (8052 and 8068) were two pits [8065] and [8067] containing cremated human bone (Fig 12). Near the centre of the mausoleum was cremation burial 7, an oval pit [8067], 1.10m long and 0.85m wide and 0.37m deep with moderate sloping sides and a slightly rounded base. The eastern side of the pit contained a small sterile layer (8068). The main cremation deposit was within an area 0.70m by 0.55m. The fill in this area was a single deposit but was quadranted in the excavation: the excavator giving the four excavated quarters of the deposit separate context numbers (8051, 8055, 8096 and 8097). The fill comprised a friable dark grey to black sandy silt with a few natural flint and gravel pieces and some charcoal flecks. It contained 48.9g of cremated bone (Table 4), as well as the remains of glass artefacts, a charred bone pin and 108 nails, taken from the pyre with the cremated bone.

Glass from the cremation deposit comprised c.12.2g of melted bottle or vessel glass, including droplets (Finn 2018). It all has a blue-green tint, common in uncoloured Roman glass and caused by impurities of iron in the materials used for manufacture. Contexts (8096) and (8097) both produced small pieces of melted glass lumps and droplets. The lumps were highly uneven containing voids

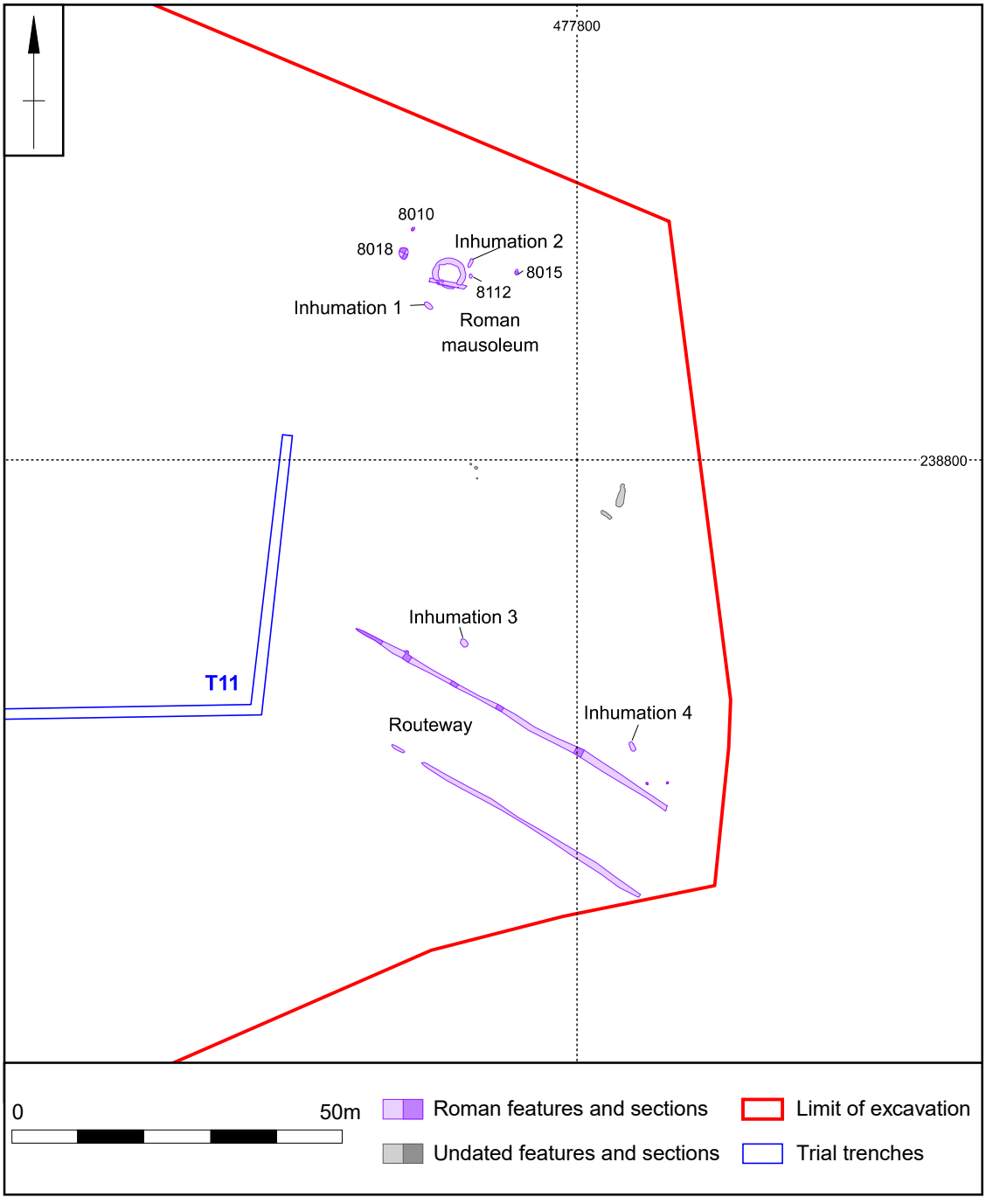

FIGURE 10 Location of features within eastern side of 2014 excavation

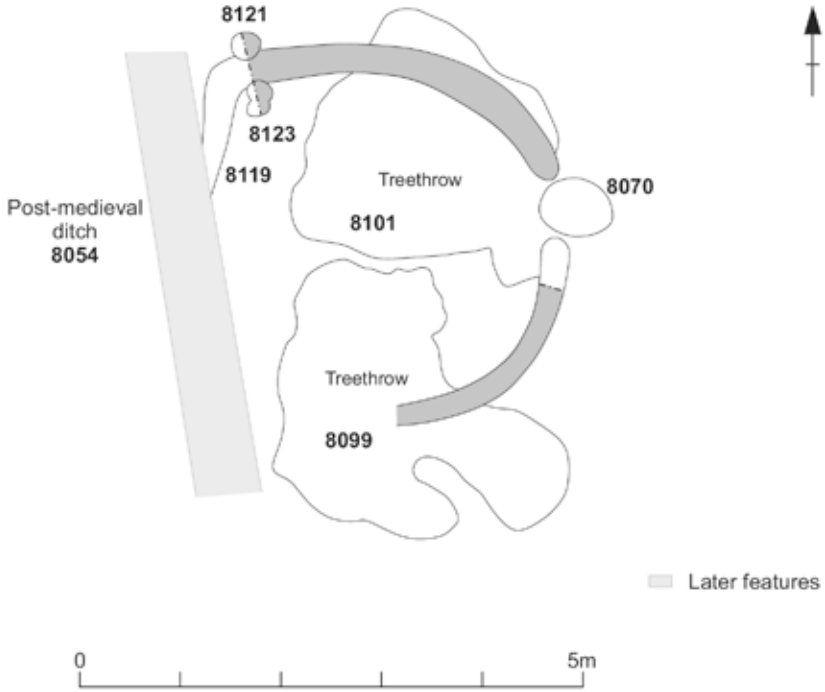

FIGURE 11 Plan of possible shrine structure and pit [8070]

and embedded grit, indicating the melted glass cooled on a rough surface, probably an external ground surface. A slightly larger lump from (8097) has formed around a smooth linear object. Given the possible iron staining on the piece, this could have been an iron nail. Droplets from both contexts indicate that the original glass object was raised up as it was heated, allowing amounts of glass to melt and fall. Context (8055) produced one fragment of glass between 2.50 and 4.30mm thick. The fragment is probably a shard from a bottle or other vessel. It was subject to heating after it was broken, as it has curled up and the sharp broken edges are slightly fire-rounded.

There was also a charred bone pin (Fig 16) and 108 nails (see Hylton below). The condition of many of the nails suggests that they had been exposed to extreme heat. Environmental samples from the fills of cremation burial 7 produced large quantities of charcoal but only very small numbers of cereals and herb seeds (Fryer 2018, table 22).

Cremation burial 6 (8087) was urned and had been located directly to the north-west of cremation [8067], cutting an initial build-up layer (8056) (Fig 12). There was no apparent cut for the cremation, but it was found within a 0.30 x 0.15m area. The cremation comprised 28g of bone which had been placed within a greyware vessel dating from at least the 2nd century AD. Only the base of the urn survived and consisted of the lower extent of a small greyware jar (comprising 21 sherds weighing 358g; pers. comm. Dr Adam Sutton).The vessel is a generic medium sandy greyware, corresponding with Milton Keynes Fabric 3 (Marney 1989) and can only be dated to between the second and fourth centuries AD. An additional small potsherd (1g), in a fine shelly fabric (Milton Keynes Fabric 1a) was found within the vessel fill. This fabric can only be broadly dated to the late Iron Age and Roman periods.

Features Outside the Mausoleum

Two cremation burials [8015 and 8065], two inhumations and three pits [8010, 8018 and 8112] lay within a 10m radius of the mausoleum (Fig 10). These features were spread around the mausoleum and were not clustered.

Cremation burial 5 [8065] abutted up to the

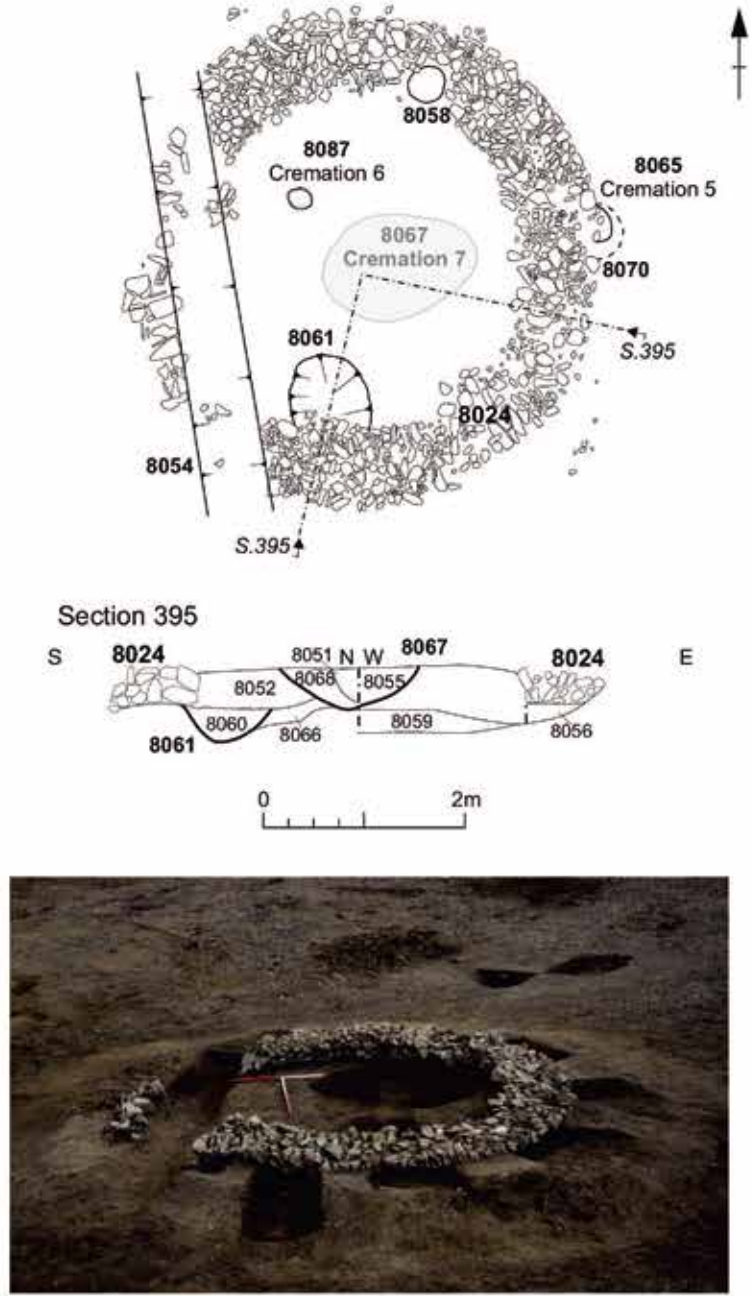

FIGURE 12 Plan of mausoleum structure, section and mausoleum, looking west

mausoleum on the eastern side. It was in an area 0.35m by 0.28m and 0.28m deep and comprised 122.3g of cremated human bone and three iron nails, but no other artefacts. Environmental samples from the fills of cremation burial 5 produced only large quantities of charcoal (Fryer 2018, table 22).

Located nearly 10m to the east of the mausoleum was cremation pit [8015]. It was 0.73m in diameter and 0.49m deep, U-shaped with a flat base. It was filled with two deposits with both fills containing large quantities (collectively 392.2g) of burnt bone (Table 4). Environmental samples from the cremation deposits were largely sterile except for charcoal flecks, charred droppings, small quantities of herbs and trees/shrub macrofossils and onion couch (*Arrhenatherum* sp.) type tubers were present within pit [8015] (Fryer 2018, tables 21 and 22).

Inhumation burials 1 and 2 were probably positioned using the mausoleum structure as a focus with the former directly to the north-east of the mausoleum and the latter *c*.5.0m to the south of the mausoleum. Burial 1 was aligned north-west to south-east, 0.50m north-east from the outer edge of the mausoleum wall. It measured 1.30m long by 0.60m wide and 0.10m deep. The preservation of the bone was poor and no grave goods were placed with the burial.

Burial 2 (Figs 10 and 13), an adult aged 26-35 years, was positioned on an east-west alignment and appears to have been placed prone in the grave. Bone preservation was good due to the slightly more clayey soil naturals. On the southern side of the burial, a deposit of pottery consisting of at least two vessels had been deliberately placed (Perrin 2018). Several of the sherds form a near complete small, narrow-mouthed beaker vessel with scale decoration of Lower Nene Valley colour-coated ware (LNVCC). This type of pottery dates to the mid-2nd to mid-4th centuries AD (Perrin 1999). The greyware includes a near-complete small flanged bowl with a pierced hole in its base. This and a complete small globular colour-coated beaker in a pink fabric with a dark brown colour-coat come from burial 2; the beaker has a funnel neck with a small bead rim and is decorated with all-over barbotine scales (Perrin 2018). The source of this vessel is not certain, but it may be a product of kilns in the Lower Nene Valley. The dark greyware sherd is from a jar and those in reddish-yellow and pink to reddish-yellow wares are from a lid-seated jar and a possible indented beaker, respectively. These and the greyware are likely to have been locally produced and there are known kiln sites within 15km of Passenham at Towcester, Biddlesden, Wappenham, Caldecotte/Bow Brickhill, Walton and Syresham (Swan 1984, 134, 145). The two sherds of possible Verulamium origin are from a flanged mortarium.

Pits [8010] and [8018] lay to the north-west of the mausoleum and pit [8112] was to the east. Small quantities of Roman grog-tempered pottery were found in pit [8018]. Pit [8112] produced a single pink grog-tempered sherd (7g) and a collection of animal bones from its backfill including a cattle skull, scapula and three different cattle mandibles, possibly representing primary butchery waste (see Gordon, below).

Routeway and Adjacent Features

About 50m south of the mausoleum lay a routeway aligned north-west to south-east, leading directly to a Roman settlement to the east, recorded in both a geophysical survey and a trial trench evaluation (Figs 1 and 2). It was traced for more than 50m on the eastern part of the site and after a gap of *c*.150m was recorded over a distance of 100m, aligned roughly east to west and heading for the river.

The routeway was defined by two parallel ditches *c*.12m apart at the eastern end and narrowing to *c*.10m wide near the river. The southern ditch cut two cart ruts, indicating that a routeway had probably existed before the side ditches were added. On the western side it cut the middle of the former middle to late Iron Age settlement, passing through its entranceway. This may suggest the routeway originated in this period.

The routeway ditches in the eastern part of the site ranged from 0.40m to 1.30m wide and 0.10m to 0.80m deep, and were severely truncated on the western section. On the western side of the site the routeway ditches were larger, between 0.90m and 1.62m wide and 0.21m to 0.66m deep. Sparse Roman pottery, a copper-alloy coiled ring, roof tile and 620g of ferrous slag were found in the ditch.

Two burials, 3 and 4, *c*.25m apart, were both positioned *c*.10m north of the routeway, and this placing respecting the routeway may have been deliberate (Fig 10). These burials were aligned roughly north-south, but in both cases bone preservation was very poor, not allowing for any recovery of burial information.

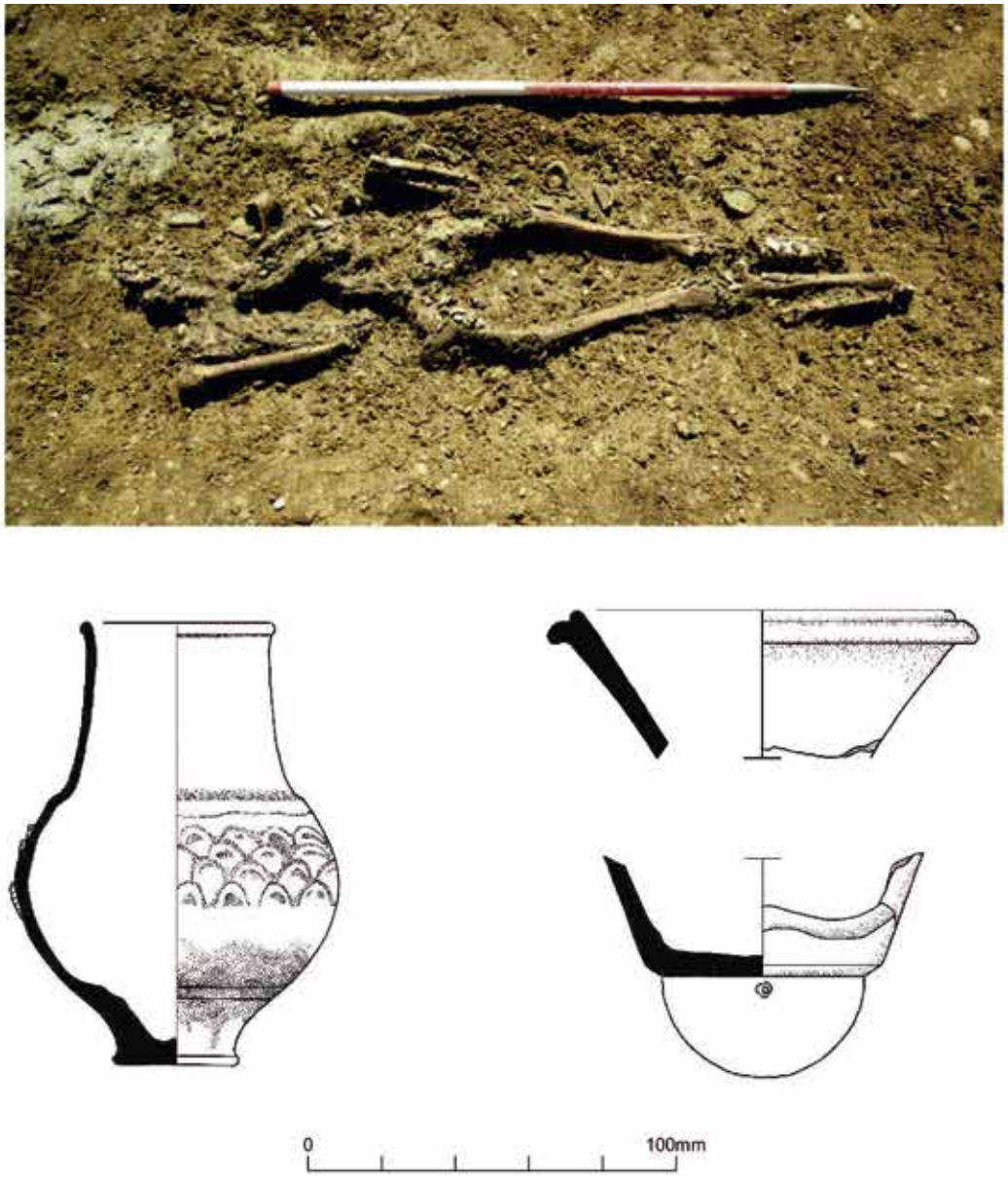

FIGURE 13 Burial 2, looking south and vessels

Medieval to post-Medieval

The former medieval and/or post-medieval earthworks on the western side of the site were recorded before they were dismantled (Atkins 2018a). After the topsoil and subsoil were removed, below the raised track there was a ditch which cut Neolithic ring ditches RD5 and RD6, the middle to late Iron Age enclosure and RD7 and the Roman routeway (Fig 2). Nearly 40m to the west of the ditch, running roughly parallel was a further north to south ditch which was dated stratigraphically to this phase. It was on the same alignment as the ridge and furrow earthworks (Fig 1).

The Artefacts

The Worked Flint

by Yvonne Wolframm-Murray

The assemblage comprised 179 pieces of worked flint. The flints from the late Neolithic pits and RD6 are likely to be contemporary with the late Neolithic pottery from these features. Other features contained some worked flint; some of which may be contemporary with the features (e.g. RD5) otherwise the flint finds may have been residual within later features (Table 2).

The condition of the artefacts is good with post-depositional damage consisting of occasional nicks to the edges. Patination is present on nearly a third of the assemblage; this is notable as a partial or complete white discoloration of the surface. A yellow or occasional brown staining of the flint was noted on a small proportion of the flint. Some artefacts were accidently burnt, which is visible as pot-lidding or thermal fracturing.

The quality of the raw material is good to moderate. The raw material is a vitreous flint mostly light to dark brown-grey in colour or an opaque flint mid to dark grey in colour. The cortex ranges from light to dark brown, occasionally white or grey. The raw material had characteristics of flint collected from local gravel deposits.

There are four flake cores present in the assemblage. All but one core has flakes detached from multiple directions. The other core has one striking platforms: however, the raw material is of poor quality and the flakes detached with hinged terminations.

The assemblage is dominated by waste flakes: the ratio between flakes and blades is 4:1 in the overall assemblage, and there are four contexts with a relatively high blade content. However, in the assemblage associated with the pottery it is as high as 7:1. A large proportion of the assemblage has cortical striking platforms, hinge or overshoot terminations and there are two squat flakes. Four flakes show signs of potential utilisation in the form of small removals around the edges. Miscellaneous retouch on two flakes and one blade is also notable in the assemblage. One possible axe trimming flake is present.

There are five retouched tool forms present in the assemblage, comprising four scrapers and one arrowhead. Both side- and end-scrapers have abrupt and semi-abrupt retouch on one lateral edge and the distal end: one scraper was accidently burned. The two end scrapers have abrupt and semi-abrupt retouch around the distal end: one end is straight.

An arrowhead is also present; the form appears to be like the oblique type. The retouch on the flake is worked bi-facially; invasive on the distal end more abrupt on one lateral edge; the form is opportunistic. The arrowhead has a broken tip.

The technological characteristics of the overall assemblage as well as the assemblage associated with the late Neolithic pottery is late Neolithic/ early Bronze Age with a very small early Neolithic component represented by the single platform

Table 2 Worked flint assemblage

Location	*Residual*	*Late Neolithic features*	*Total*
Waste flake/blade	9/6	104/23	113/29
Utilises flake	-	4	4
Axe trimming flake	-	1	1
Core	2	3	5
Misc retouch flake/blade	2/2	2/1	4/3
Scraper	2	2	4
Arrowhead	-	1	1
Debitage weight (g)/ pieces	0.70/7	0.65/8	1.35/15
Total	**30**	**149**	**179**

flake core. The late Neolithic/early Bronze Age character is typical with the large flake to blade ratio, cortical striking platform, terminations, the flake cores with multiple striking platforms and the scrapers. The possible oblique arrowhead was used up to the early Bronze Age.

The Late Neolithic Pottery
by Andy Chapman

Two pits [9319] and [9146], 17m apart, and the ditch and internal pit of ring ditch RD5 produced a total of 2.52kg of pottery that can be dated to the late Neolithic by the presence of Grooved ware vessels. Each of the assemblages shows the same characteristics in comprising sherds from a large, thick-walled Grooved ware vessel and also thinner-walled sherds from small typically plain open-bowls, with simple tapering rims and, in one instance, a horizontal finely-perforated lug. There are also two sherds with twisted cord decoration.

Pit [9319]
The fills (9317/8) of pit [9319], which lay within the western part of the middle to late Iron Age enclosure and between the parallel ditches of a Roman routeway, contained sherds to a total weight of 1550g from a single Grooved ware vessel of the late Neolithic, decorated with vertical plain applied cordons. There were also six sherds weighing 50g from a thin-walled bowl and a vessel with impressed cord decoration, and over 40 worked flints. All three vessels are in a fabric containing pellets of light brown to grey-brown grog, measuring up to 2mm. The core and inner surface of the Grooved ware vessel is grey and the surface is oxidised orange-brown (Fig 14, **1**).

The Grooved ware vessel had a flat base, 14-16mm thick and 230mm in diameter (50% surviving, but not all joining). On the intact part of the base, there are adjacent cordons set 25mm, 35mm and 25mm apart, indicating that the spacing of the vertical cordons was either not consistent or perhaps alternated between narrow and wide spacing.

The sides splay outwards, indicating that it had either an open or barrel-shaped form. The body sherds, which are 10mm thick, are too fragmented to estimate the original height, although it would have been considerably in excess of 160mm, and the upper body and rim are missing. The applied cordons are up to 11mm wide and 3-5mm thick, either flush with the surface or in places slightly embedded into the surface and they vary from rounded to quite pointed, where they have been pinched up. There are surviving scars where cordons have become detached. On the body sherds, the cordons diverge with increasing height, with the maximum recorded separation of 45mm probably relating to the narrower spacing.

The small vessels in pit [9319] comprise a plain rounded bowl, with a light yellow-brown external surface and a tapered rounded rim, *c.*150mm diameter, and an upright rounded rim, with grey-brown surfaces and two rows of impressed cord decoration just below the rim.

Pit [9146]
The fill (9145) of pit [9146], which lay 17m to the west of pit [9319], also produced an assemblage of Grooved ware, together with a plain bowl with a finely-perforated lug, sherds from a number of other small vessels and 30 worked flints. The pottery group weighs 399g and the readily datable element comprises five sherds of Grooved ware, weighing 120g, in a soft fabric containing grog but generally poorly preserved. There are two sherds with remnant applied cordons (not illustrated) and three with incised linear decoration (Fig 14, **2**). Two sherds have a remnant of a simple upright, slightly tapered flat-topped rim with a fine incised line 4mm below the top at the base of the tapered rim. A gap of 7mm is followed by three more boldly incised lines at even intervals of 6mm. Below this and slightly overlapping into the bottom band there are vertical incised lines at intervals of 7.0-7.5mm. These extend for at least 27mm.

The rest of the assemblage comprises sherds from smaller vessels in a harder fabric containing either sparse small pellets of brown grog up to 1mm across, or no evident inclusions. This material includes a third of a small plain bowl with a horizontal perforated lug, and further none joining sherds and most of the base, all weighing 165g. The walls of this plain open bowl are consistently 7mm thick but taper in rapidly at the top to form a narrow rounded rim. It had a rim diameter of 130mm and was 90mm high with a flat base *c.*80mm in diameter. Centred 15mm below the rim, there is a horizontal lug, 24mm long by 12mm wide, with a fine perforation up to 2mm in diameter (Fig 14, **3**).

There are further rim and body sherds from

a number of similar but probably slightly larger bowls, to a total weight of 114g. It is notable that rims and body sherds are common in this group, but there is only a single fragment from a base. There are one or two examples with grey inner surfaces and light brown to grey-brown external surfaces, and another example has a brown to grey-brown internal surface just below the rim and a brown-orange external surface. All of these vessels have slightly inturned tapering rounded rims, similar too but slightly thicker than the well-preserved bowl. There are also sherds from another one or two bowls also with rounded inturned rims, which have grey surfaces. One rim sherd has a conical perforation, 4-10mm diameter, drilled from the outside and centred 23mm below the rim (Fig 14, **4**).

Ring Ditch RD5

From the fill (9303) of ditch segment [9304] there is a single thick-walled sherd in a fabric containing grog, with a grey core and pale brown external surface. This has a remnant of a raised horizontal cordon lying immediately below a probable flat-topped rim, indicating that it comes from a Grooved ware vessel.

From the fill (9330) of an internal pit [9332] there are two poorly preserved sherds with brown surfaces that retained partial cordons, indicating that they too are of Grooved ware. There is also a single thinner-walled grey sherd.

There is a larger group weighing 490g from ditch segment [9326], and this clearly shows the same characteristics as the two pits 70m to the south, with a combination of Grooved ware and smaller bowls. There are sherds from the base, body and rim of one or more Grooved ware vessels. One has closely-spaced vertical applied cordons, as little as 10mm apart at the base and on the body and a single rim sherd, upright and rounded, has remnants of even more closely-spaced cordons. There is also a single body sherd, perhaps from a different Grooved ware vessel with a broad panel between vertical cordons filled with oblique incised line decoration (Fig 14, **5**). A base sherd has a diameter of *c*.200mm.

There are also base and body sherds from a smaller, thinner-walled bowl, with pale brown surfaces and a base diameter of 120mm diameter. In grey fabrics there is simple tapered rim and a rounded rim with two rows of twisted cord decoration below the rim, similar to a rim sherd from pit [9319].

Illustrated Neolithic Pottery (Fig 14)

1 Grooved ware jar with vertical applied cordons from pit [9319]
2 Grooved ware with incised decoration below the rim from pit [9146]
3 Plain bowl with horizontal lug from pit [9146]
4 Other small bowl rim sherds from pit [9146]
5 Grooved ware sherds from ditch segment [9326] of ring ditch RD5

The Iron Age Pottery
Andy Chapman

A total of 342 sherds, weighing 3.48kg, of Iron Age pottery were recovered from the Iron Age enclosure, with an average sherd weight of 10.2g.

Fabrics

Fabric 1: Sandy, rough surface texture containing fine rounded quartz. 207 sherds, 60.5%.
Fabric 2: Shelly, containing crushed shell and often voids from leached shell, 39.5%

The sandy fabric dominates, making up 60.5% of the assemblage by sherd count. The proportion by weight would be an even higher percentage as the loss of the shell by leaching had left the shelly sherds softer and more liable to fragmentation.

Pottery Distribution

The principal roundhouse (RD7) produced the largest group of pottery, making up 44.7% by sherds and 42.5% by weight of the total assemblage. The material from the roundhouse ring ditch came mainly from the northern terminal, 410g, with a small group from the southern terminal, 135g. However, these totals are much smaller than the 880g of pottery from a pit within the roundhouse.

The southern terminal [9042] of ring ditch RD7 produced one of the larger groups of pottery from the site, weighing 410g. This comprises plain body sherds, 8-9mm thick, in a hard sandy fabric with grey core and inner surface and a mottled brown to patchy grey external surface. The body sherds come from a large storage jar, and there is a small fragment of a flat-topped rim. Ditch slot [9072],

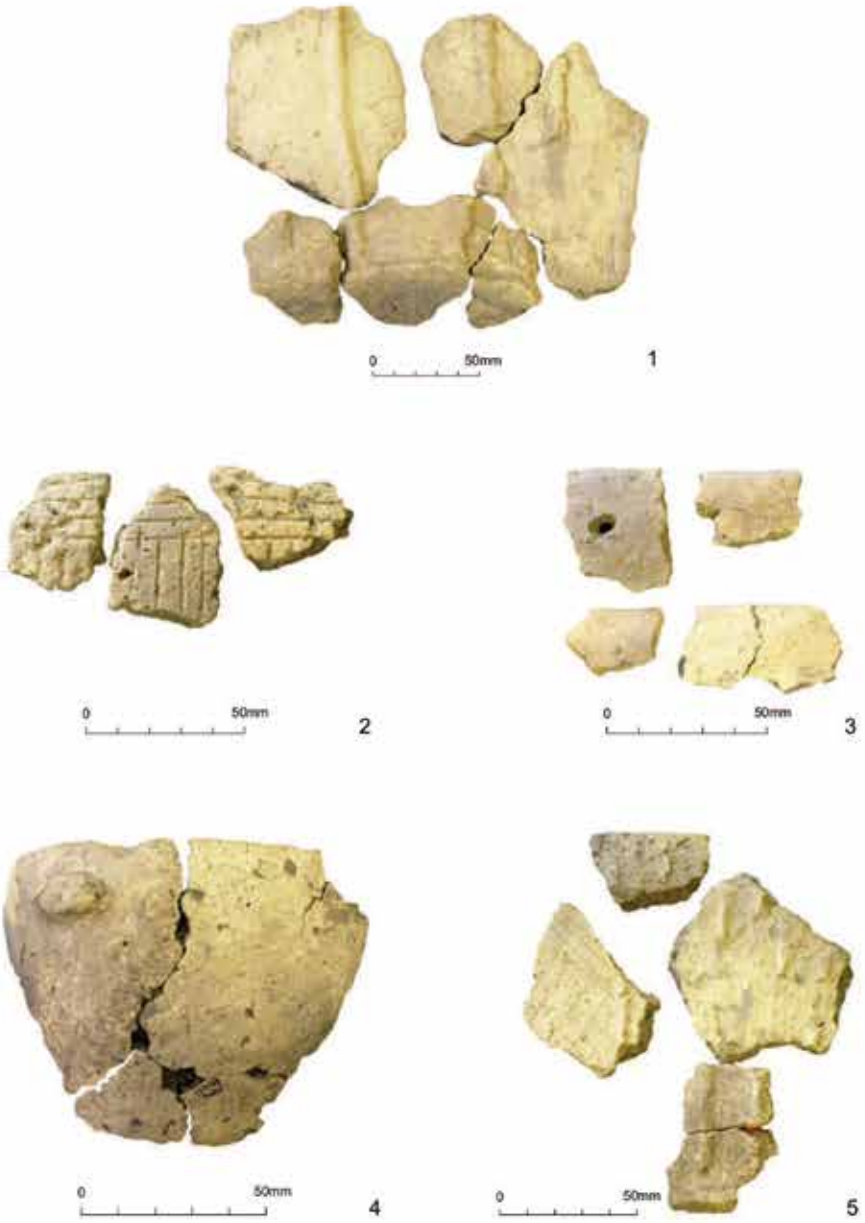

FIGURE 14 Late Neolithic pottery from pits [9319], [9146] and RD5 (Scale 10mm)

to the west of the northern terminal produced two sherds containing sparse fine shell, with the rounded body sherd grey-black with well-smoothed surfaces probably coming from a late Iron Age globular bowl.

The northern terminal [9062] of ring ditch RD7 produced a small group of pottery, weighing 135g, containing the rim and upper body of a shouldered jar in a sandy fabric, with a short neck, and upright rounded rim and shallow fingertip impressions on the shoulder (Fig 15, **1**).

The second largest group from the site, weighing 710g, was from the fill (9098) of pit [9103], within roundhouse RD7. The group contains a

slack-shouldered jar with a simple upright rounded rim in a grey fabric, with grey-brown surfaces well smoothed (Fig 15, **2**). The group also includes thicker-walled body sherds from larger jars in both sandy and coarse shelly fabrics, with the latter soft and friable having lost most of the shell inclusions to leaching. The coarse shelly jar has orange-brown surfaces, while the sandy vessels have darker, grey-brown surfaces. There are everted, rounded and flat-topped rims from these jars.

The Small Sub-Enclosure

The largest group from the site comes from fills (9251), 420g, and (9252), 900g, of the small sub-enclosure ditch segment [9253] at the south-west corner. Much of the weight derives from thick-walled sherds, between 10mm and 15mm thick, from a number of larger jars in hard sandy fabrics with the surface colours ranging from orange to mottled brown-greys and dark grey. There are joining sherds with fresh breaks from both contexts that come from the rim and upper barrel-shaped body of a jar, with an upright rounded and tapered rim (Fig 15, **3**). It was 210mm in diameter at the rim with a maximum diameter of 230mm at 55mm below the rim, while at 125mm below the rim the diameter had tapered back in to 210mm diameter, with the curvature flattening out. From fill (9251) there is also a rounded rim from a slack-shoulder jar with a burnished surface (Fig 15, **4**) and a bead rim from a smaller jar or bowl. From fill (9252) there are also fragmentary remains of a small globular bowl, *c.*100mm high, in a soft fabric that has lost its shell inclusions to leaching. There are also rim sherds from two small jars with rims decorated with closely-spaced fingertip impressions. The only other decorated rim from the site comes from the fill (9110) of enclosure ditch [9111] where there is a small group from a single small vessel in a shelly fabric that has disintegrated, but had a flat-topped rim with oblique fingernail impressions spaced 7-9mm apart.

The fills (9297) and (9298) from a large pit [9299] within the small sub-enclosure ditch produced a small group almost entirely from two or three small to medium jars in hard fabrics with brown to grey smoothed to burnished surfaces, one with an everted rounded rim and the other a slightly inturned rounded rim from another barrel-shaped vessel.

The Large Enclosure Ditch and Internal Pits

The large sub-rectangular enclosure ditch produced only 97g of pottery, 5.8% of the total assemblage, with the only item of interest being a flat-topped rim with oblique fingernail decoration. Two pits [9195 and 9391] within this enclosure on the western site produced a total of 241g of pottery, 6.9% of the total assemblage, with this material comprising mainly plain body sherds generally with brown external surfaces.

Chronology

The presence of numerous examples of high-shouldered or slack-shouldered jars with simple upright rims and the presence of several vessels in uniformly grey to grey-black fabrics with smoothed to burnished surfaces suggest a date at the end of the middle Iron Age to late Iron Age. Occupation may have begun as early as the 2nd century BC and the site was certainly active through the 1st century BC. There is no material that can be assigned to the early decades of the 1st century AD.

Catalogue of Illustrated Pottery (Fig 15)

1 Shouldered jar from the southern terminal [9062] of ring ditch RD7
2 Slack shouldered jar with upright rounded rim from pit [9103]
3 Rim and body of barrel-shaped jar from sub-enclosure ditch [9253]
4 Slack-shouldered jar from ditch [9253]

The Other Finds

by Tora Hylton

The 2014 excavations produced 118 individual and group recorded small finds. In addition, a further 12 finds were recovered during the processing of environmental residues, making a total of 130 finds. Except for one shale armlet from an Iron Age pit and an undatable lead disc from a furrow, all the finds were recovered from stratified Roman deposits. No finds pre-dating the middle-late Iron Age were recovered. The majority of finds were recovered from deposits relating to a stone mausoleum and inhumation cemetery sited in the north-eastern corner of the site, while a smaller number were retrieved from an adjacent routeway. The assemblage is dominated by nails but also includes a small group of personal items.

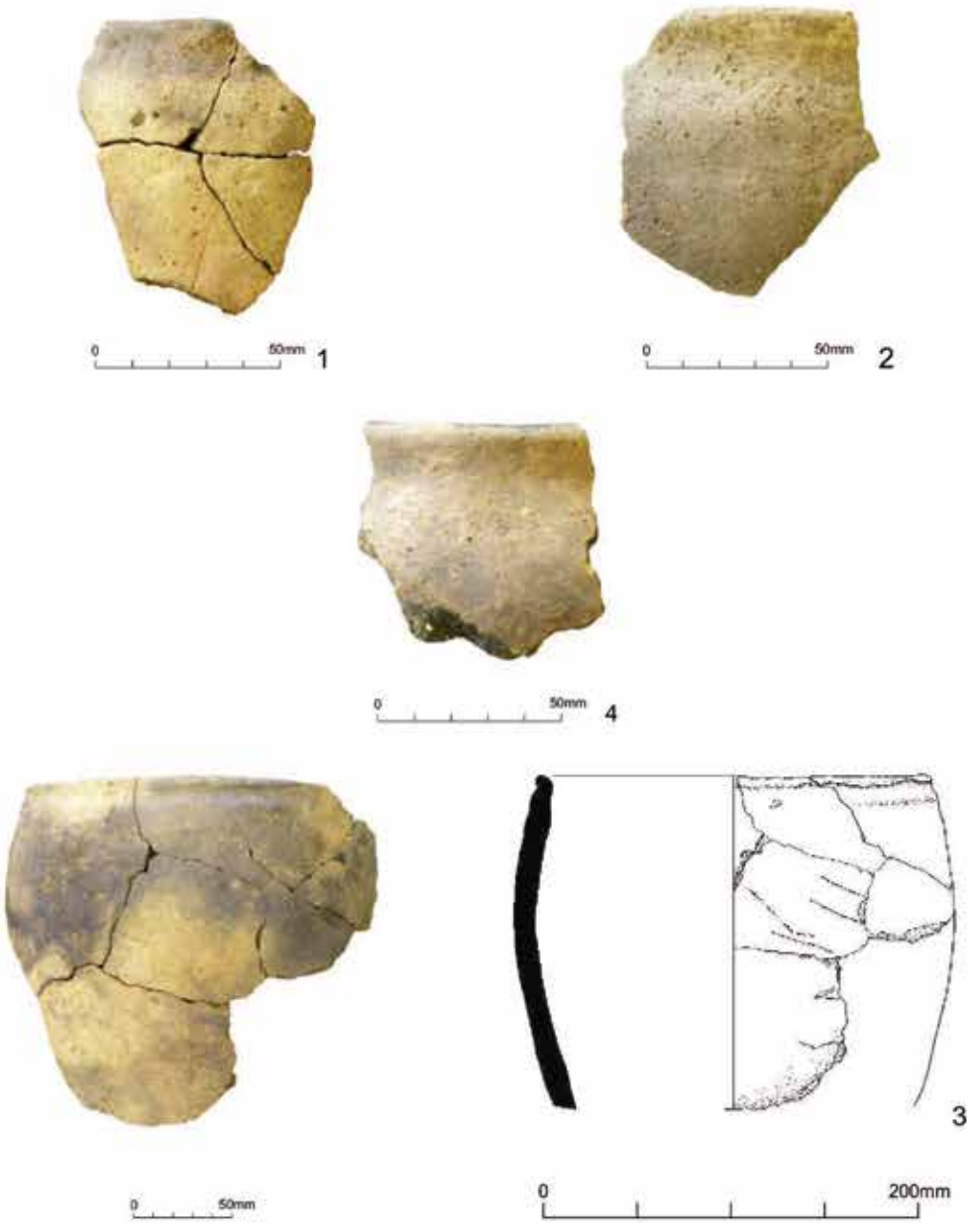

FIGURE 15 Iron Age pottery (1-4) (Scale 10mm)

The small finds may be quantified by material type consisting of one object each in copper alloy, lead, bone and shale and 126 in iron. Since most finds are nails from cremation deposits and these are readily identifiable because of good preservation, only 16 unidentifiable iron objects were submitted for X-ray. The X-rays were undertaken by Rachel Cubit (MOLA London) and the images produced not only aided identification but also revealed technical details not previously visible.

Iron Age Finds (c.2nd century BC – 1st century BC)

Part of a shale annular armlet <SF 4579> was recovered from the fill of a large storage pit [9103] sited within the confines of ring ditch 7. The lathe-turned armlet is plain (undecorated) with a D-shaped cross-section (W: 7.5mm; H: 7mm) and although incomplete and fragmentary (x7 pieces), enough survives to indicate that it would have measured *c*.70mm in diameter, a suitable size for an adolescent/adult.

Roman Finds (mid-2nd century AD+)

In total 128 small finds were recovered, 121 from burial deposits relating to a small inhumation/cremation cemetery associated with a mausoleum and seven finds from a routeway, which provided access to a Roman settlement sited to the east of the area of excavation. The range of finds is small and although dominated by nails, the assemblage also includes personal items relating to dress, a knife and miscellaneous binding/strap fragments.

Finds from Burial Deposits

In total 121 finds were recovered from burial deposits. They include the fragmentary remains of a charred bone pin <NSFN>, which was recovered during the processing of soil residues, 119 complete and fragmentary nails and one undiagnostic strip. Two nails were recovered from inhumations, one each from inhumations burials 1 and 2 located near the mausoleum, probably stray finds deposited in the grave earth when the body was interred. Most nails (117) were retrieved from cremation deposits within the mausoleum, three from cremation 5 fill (8064) and 115 nails from cremation 7 (contexts 8019, 8051, 8055, 8096 and 8097).

Where possible the nails have been classified according to the nail types identified during the analysis of a large assemblage of 1385 nails recovered during previous fieldwork at Passenham Quarry, *c*.200m to the north (Area 6). Of the five types recognised previously, only Types 1-4 are represented here. The majority of nails represent Manning's Type 1b nail (1985, 134); they have flat sub-circular heads with square-sectioned shanks, but since a range of sizes is represented, they have been sub-divided by length. The four nail types are as follows:

1) Flat sub-circular/sub-rectangular head measuring *c*.10mm in diameter or more. Square-sectioned shank measuring 4-5mm x 4-5mm. Complete examples measure from 75mm in length (two examples).
2) Similar to Type 1 but noticeably smaller. Flat sub-circular/sub-rectangular head measuring *c*.10 mm in diameter. Square-sectioned shank measuring < 4mm x 4mm. Complete examples measure from 40-60mm in length (six examples).
3) Similar to Types 1 and 2 but smaller. Flat sub-circular/sub-rectangular head measuring *c*.5-8mm in diameter; square-sectioned shank. Complete examples measure from 29-40mm in length (60 examples).
4) Small tack like nail with flat circular head measuring just 5-7mm in diameter and square-sectioned shank. Complete examples range from 14-25mm in length, with the majority clustering between 15mm in length (nine examples).

Cremation Burial 5

One complete nail and two fragments were recovered during the processing of samples <283, 294>. The complete example represents a Type 3 nail measuring *c*.34mm in length.

Cremation Burial 7

Cremation burial 7 was sited within the confines of a circular stone mausoleum, rather like another mausoleum observed during previous fieldwork (Walker 2011). Finds associated with cremation burial 7 include a fragmentary bone pin and 113 complete and fragmentary iron nails (four individually recorded nail fragments join to form two complete examples, therefore the total number of 115 nails has been reduced down to 113 nails). The number of nails from cremation burial 7 is too small to make any valid assumptions: however, the range of sizes represented presumably relate to the remains of some form of structure/bier or offerings/pyre goods. Cremation deposits containing assemblages of nails have been recorded elsewhere; as stated previously, 1385 nails were recovered from a cremation deposit sited *c*.200 metres to the north (Walker 2011); 52 nails were recovered from a cremation deposit adjacent to Watling Street where the range of sizes represented are thought to represent part of a casket (Mackinder 2000), and finally

a large assemblage of nails (number unknown) was recently recovered from a cremation deposit at Earls Barton Quarry, Northamptonshire (pers. comm. Ian Meadows).

Bone Pin

Seven charred fragments from a bone pin were recovered during the processing of Sample <291> from cremation burial 7. The pin has a tapering sub-circular-sectioned shank measuring *c*.2-3mm in diameter. Together the fragments measure *c*.60mm in length, but the charred nature of the pieces makes it difficult to determine if they actually join (Fig 16). The head is conical with transverse grooves below: typologically it equates to Crummy's Type 2 pin (1983, 21), a form pre dating *c*.AD200. The head is decorated with an incised double zig-zag motif forming diamonds and flanked either side by a single incised transverse groove. The incised lines forming the zig-zag motif extend beyond the transverse grooves, suggesting that the zig-zag motif was executed before the transverse grooves. The style of the motif resembles that seen on a pin from Catterick (Isaac & Thompson 2002, fig 320, 81). Bone pins are common finds in grave deposits; they may be positioned close to the skull, suggesting that they were used as hair pins, or they may have been used to fasten items of clothing. Bone pins are perhaps less common in cremation deposits, since they would have been destroyed during the burning of the human remains.

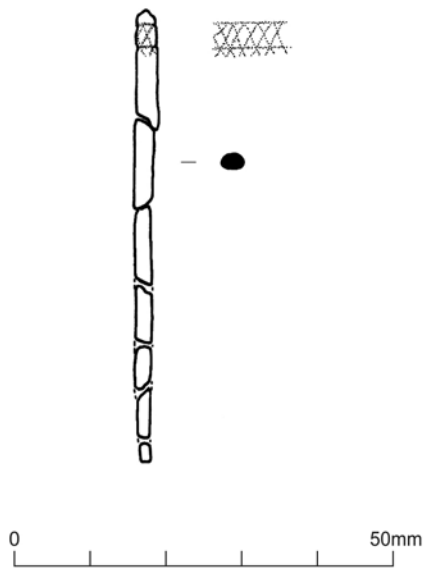

FIGURE 16 Bone pin from cremation burial 7

Iron Nails

In total 113 nails were recovered from cremation burial 7; of that number it was possible to classify 81 examples (88.5%). The majority of the nails are in a relatively good condition and most are covered in minimal amounts of corrosion. However, the preservation of a small number of nails (x 24) is exceptional and this is due to the preservative action that high temperatures have on iron. The nails have a brick red surface, to which few if any corrosion deposits have adhered. The red surface (haematite) is a protective layer which prevents corrosion and its presence indicates that the pyre reached a temperature in excess of 200 degrees centigrade (Cronyn 1989, 180). Of the 81 identifiable nails, those measuring 29-40mm in length were the dominant form represented (Type 3) with 60 examples. Thirty-one nails displayed signs of having been used, some had shanks that were bent at right angles, but the majority had gently curving profiles. The assemblage also produced four nails with hollow domed heads (identified from the X-ray): two resemble Manning's Type 8, an upholstery stud and the other two are smaller in size and may be hobnails for use with shoes/sandals (Manning's Type 10). In addition, three nail fragments have amorphous droplets of melted glass adhering to their surfaces: these presumably relate to glass offerings/pyre goods, as discussed elsewhere in this report.

Routeway Finds

An east-west aligned routeway, which provided access to a Roman settlement sited to the east of the area of excavation produced seven small finds. A coiled ring, possibly a finger ring, was recovered from the fill of the routeway ditch and six iron finds were recovered from its flanking ditches.

The ring <SF4713> has been made from the terminal of a penannular armlet (ext. dia: 20mm, int. dia: 15mm, H: 5-6mm), a cast 'multiple unit' type decorated with a symmetrical motif of five or more panels. The terminal of the armlet is squared and marked by a centrally placed circular

TABLE 3 Nails from cremation 7

Context	*NAIL TYPE*										*Total*
	1		*2*		*3*		*4*		*Indeterminate*	*Manning's Type 8/10*	
	*C**	*NC**	*C*	*NC*	*C*	*NC*	*C*	*NC*			
8019	-	-	3	-	4	1		-	1	-	9
8051	-	-	1	-	7	2	1	-	4	-	15
8055	-	-	-	-	12	1	1	-	7	2	23
8096	1	-	2	-	8	6	2	-	4	-	23
8097	1	-	-	-	10	9	4	1	16	2	43
Total	**2**	**-**	**6**	**-**	**41**	**19**	**8**	**1**	**32**	**4**	**113**

C = complete nails; NC = incomplete nails

Laboratory & sample no.	Sample details	D13C	Conventional radiocarbon age (BP)	Cal BC Intercept 95% confidence
Beta 522093 PQ14/9145 pit [9146]	Nutshell	-24	3950 ± 30	2499-2346/2568-2521
Beta 522092 PQ14/9318 pit [9319]	Charcoal	-23.5	4030 ± 30	2623-2473
Beta 522091 PQ14/9200 RD8	Bone (cremated)	-21.9	4220 ± 30	2813-2743 /2905-2852 /2728-2695

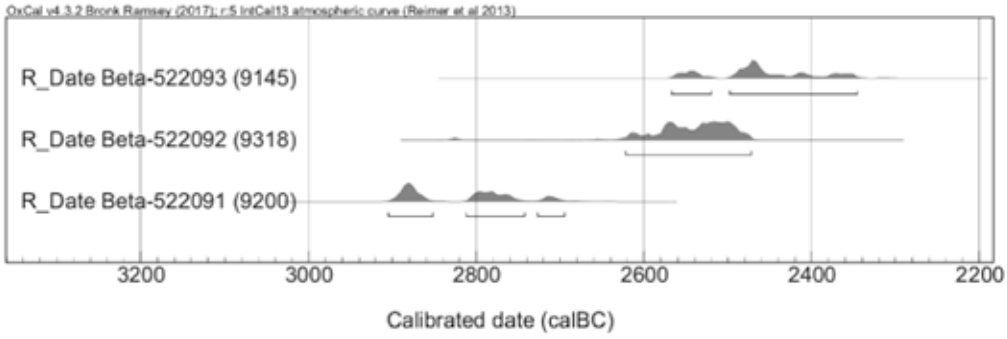

FIGURE 17 Radiocarbon dates

recess; there is a transverse groove set c.8mm from the end and beyond that, the motif comprises a centrally placed longitudinal groove, flanked by short oblique grooves position close to the outside edge. The motif may paralleled by that seen on the terminals of two armlets from Colchester (Crummy 1983, fig 47, 1725, 1729). Where armlets of this type have been recovered from datable contexts, they are generally 4th-century in date or later (Clarke 1979, 307), but Cool suggests that there are some indications that the type developed in the late 3rd century (Cool 1983, 89).

The small group of six iron objects include a knife blade <SF 4463>, four short lengths of forged strap fragments, possible for binding or reinforcement <SF4494-SF4497> and a tapered strip <SF4498>. The form of the knife blade is difficult to identify with certainty, but it is not dissimilar to Manning's

Type 10 (1985, fig 28), a general-purpose knife with a straight blade. Tapered strip <SF4498> may represent part of the blade and tang, but it is difficult to be sure.

The small sections of binding/reinforcement bar measure up to *c*.72mm in length and 37mm wide and have been forged from sheet metal measuring 5mm thick <SF 4494-SF4497>. The X-rays reveal that three of the bars are pierced for attachment, with square perforations ranging from *c*.8 x8mm to *c*.10 x10mm in size. These perforated strap bindings would have had any number of uses from securing boxes and chests to structural woodwork.

Undateable Finds

Finally, a very thin sub-circular disc of beaten sheet metal was recovered from the fill of a furrow. The disc measures *c*.25mm in diameter and *c*.0.6mm thick and it is not possible to determine what it might have been.

Radiocarbon Dates

Three radiocarbon dates were taken from two late Neolithic pits [9146 and 9319] and cremated bone within the late Neolithic hengiform monument RD8 (Fig 17).

Human, Faunal and Environmental Evidence

The Human Remains

by Chris Chinnock

Five deposits of cremated bone (cremation burials 5, 6, 7, 8 and cremated bone in pit [8015]) and four inhumation burials (B1, 2, 3 and 4) were recorded in Area 8 (Table 4). Cremation burials 5, 6, 7 and cremated bone in pit [8015] were closely associated with the Roman mausoleum present in the eastern part of the area, as were two of the inhumations (Fig 10).

Four deposits of cremated bone were present in Area 9, the majority of which appear to have been associated with a late Neolithic ring ditch RD8 (Fig 6; 9179, 9181 and 9185). A further deposit was found in a late Neolithic pit [9146] to the west of RD8 (Fig 2).

The Inhumations

The four inhumations all comprised adult individuals, one of which (B2) was estimated to have been aged 26-35 years at the time of death. Two of the burials were characterised as moderately well preserved and two were very poorly preserved. However, all four burials were highly fragmented and as a result no metric measurements and estimations of stature and skeletal indices could take place, none could be sexed and no pathological lesions were observed.

The Cremation Burials

Although fragmentary, the burnt bone was relatively well preserved. While most of the assemblage showed better survival of the outer cortical bone, context (9200) from the fill of ring ditch 8 displayed much better preservation of the spongy internal trabecular bone than that observed in the rest of the assemblage. This may suggest that this was the primary deposition of the cremated bone. A greater degree of post-depositional fragmentation may have been expected, had this been a secondary deposit.

Minimum Number of Individuals

The majority of the deposits of burnt bone comprised the cremated remains of at least one individual. One deposit (9145) contained only a very small amount of burnt bone, much of which was poorly calcined and showed no distinctively human elements, leaving the possibility that it relates to animal bone rather than cremated human remains. Another context (9200) contained an extremely large amount of cremated human bone (4148.5g), far in excess of that expected from a single individual. The average weight of modern adult cremations has been shown to range from 1001.25g to 2422.5g with a mean of 1625.9g (McKinley 1993, 285). In addition, the cremated material contained repeated skeletal elements (three right and three left petrous bones from the skull) indicating at least three individuals were reflected in the deposit of cremated bone. From the ten separate contexts containing cremated human bone, the remains of a minimum of 12 people are present.

Demographic Data

Of the 12 individuals identified in the cremated bone, five (6/12: 50%) were estimated to be the remains of adults. A single sub-adult (1/12: 8.3%) was identified by the presence of an unfused articular surface on the proximal femur and several

TABLE 4 Summary of contexts containing cremated bone (all unurned)

Context	*Cremation No.*	*Associated Feature*	*Area*	*Total Weight (g)*
(8013)	-	Pit [8015]	8	392.2
(8064)	C5	Pit [8065] (abuts mausoleum)	8	122.3
8087	C6	(8087) (Mausoleum)	8	28.6
(8055), (8096), (8097)	C7	Pit [8067] (Mausoleum)	8	48.9
(9043)	C8	Pit [9044]	9	34.9
(9145)	-	Pit [9146]	9	11.3
(9179)	-	Pit [9180] near late Neolithic RD8	9	477.3
(9181)	-	Pit [9182] near late Neolithic RD8	9	31.7
(9185)	-	Pit [9186] late Neolithic RD8	9	227.1
(9200)	-	Ditch [9202] late Neolithic RD8	9	4148.5

deciduous teeth within context (9179). No skeletal elements had survived in a good enough state to allow for more refined age estimations. The remaining five individuals (5/12: 45.5%) present within the deposits of cremated bone could not be assigned to an osteological age category, due to the severe fragmentation and small quantity of bone available at analysis.

It was not possible to confidently assign a biological sex to any of the individuals represented by the cremated bone. It is suggested that at least one of the three individuals present within context (9200) was a female based on observations on the size and robustness of a mastoid process and fragments of occipital bone present within that deposit.

Pathology

No pathological lesions were observed on any of cremated bone fragments from any of the deposits. This was due largely to the high degree of fragmentation and small quantity of bone characteristic of many of the deposits. Whilst many teeth were present within the assemblage, the tooth crowns had been completely destroyed during the cremation process and only the roots had survived. As a result, no evidence of dental pathology was observed. Similarly, a few of the larger deposits contained fragments of articular surfaces and vertebral elements though no evidence of spinal or extra-spinal joint disease was present.

Oxidation

The colour of burnt bone represents the degree of oxidation which occurs on the pyre and is a result of both the temperature and availability of oxygen during the cremation process. Most of the cremated bone was a uniformly white/off-white colour indicating almost complete oxidation, and cremation at temperatures in excess of 600°C (Holden *et al* 1995 a & b). However, a number of contexts exhibited slight to moderate variability in colouration (Table 5). The presence of occasional charring of the bone suggested that some cremations may not have been as fully efficient as others. Cases which displayed colours ranging from black and grey through to blue/grey/white may be representative of differential burning environments within the pyre, e.g. lower temperatures reached.

Fragmentation and Dehydration

A maximum fragment size of 80.3mm was recorded from unurned cremation deposit (9200). The estimated mean fragment size ranged from 10mm (six contexts) to 20mm (two contexts). The low fragment size is not unexpected considering that all of the recorded deposits were unurned and no evidence for organic containers was recorded. Data collected from other funerary sites containing cremated bone has demonstrated that urned cremation burials, on the whole, present higher maximum fragment sizes and average fragment sizes.

TABLE 5 Colour of the cremated bone

Colour	*Total*
95% white/off white, 5% dark blue-grey	6
60% white/off-white; 30% dark grey blue; 10% dark brown	2
90% dark blue/grey, 10% white/off-white	1
Total	**9**

Longitudinal, transverse and spiral fractures were present throughout the assemblage and occasional warping of the bone was observed in some of the larger fragments of burnt bone. The implications of fracture patterns and bone warping can be difficult to interpret, though research has suggested that the burning of dry bone produces longitudinal splitting that follows the stress lines of the bone and burning of fleshed bone tend to exhibit more warping, irregular longitudinal splitting and transverse fractures (Uberlaker 2015, 219).

All areas of the skeleton were represented, though not in all deposits. A clear bias was observed in the identification of skull fragments over other areas of the skeleton. The distinctive lamination of the cranial vault and meningeal impressions enable even small fragments to be easily identified and explains the bias towards this area. There were a small number of tooth fragments present, though none were identifiable to the exact tooth position.

Some of the contexts contained very little burnt bone. The contexts associated with the Roman mausoleum contained much lower quantities of cremated human bone than those encountered elsewhere.

Discussion

The large amount of cremated bone found within the fill of late Neolithic ring ditch 8 is of interest and holds some research potential. Of particular note is the placement of a very large deposit of cremated human bone, containing the remains of at least three individuals, as part of the fill of the ditch.

The Animal Bone

by Rebecca Gordon

The excavation produced a small assemblage of animal bone totalling 1689 fragments, mostly highly fragmented. The remains dated between the late Neolithic to medieval/post-medieval period. The majority of the remains were recovered from 2nd to 1st-century BC and Roman contexts. The assemblage was too small to allow for a detailed analysis; however, there is some evidence to suggest the remains represented food/butchery waste.

Results

Cattle, sheep/goat, pig, horse and dog were recorded, although cattle bones were more common (Table 6). It is likely these animals were located on or close to the site. The deer antler fragment could have come from a shed antler rather than from a hunted animal, which may have been used as a raw material. The range of body parts represented for cattle suggest that the whole animal was brought to the site; however, due to the small sample size, this interpretation should be considered with caution. The limited body part data for sheep/goat and pig precludes any detailed analysis. In Area 8, pit [8112] had a cattle skull and scapula which could represent primary butchery waste. A crude assessment of the body parts present for cattle from the Iron Age and Roman periods demonstrated that the former had mainly skull and foot bone fragments whereas the latter had skull fragments. There were no associated bone groups observed in the assemblage. The lack of fusion and tooth wear data prevented a basic assessment of slaughter profiles for cattle, sheep/goat and pig. Epiphyseal fusion data was mainly recorded for cattle (n=13), showing the remains were from skeletally mature animals. It was possible to assign a seven mandibles to an age category, with a cattle mandible from RD7 (30-36 months), three different cattle mandibles from Roman pit [8112] with one dated 1-8 months old at death and two were adults (*c*.3-4 yrs), a cattle mandible from the Roman trackway was from an adult (*c*.3-4 yrs) and

TABLE 6 Animal bone specimens both hand-collected and from environmental samples. Antler fragments not included

Species	*Late Neo*	*Mid-late IA*	*Roman*	*Medieval+*
Cattle (*Bos taurus*)	-	36	32	-
Sheep/goat (*Ovis/ Capra*)	-	7	4	7
Pig (*Sus scrofa*)	-	7	-	-
Horse (*Equus* sp.)	-	4	-	-
Dog (*Canis familiaris*)	-		1	-
Unidentifiable large mammal	2	711	624	4
Unidentifiable medium mammal	-	147	8	21
Unidentifiable fragments	-	52	22	-
Total	**2**	**961**	**691**	**32**

two sheep/goat mandibles were from a medieval/ post-medieval feature.

There was evidence of carnivore gnawing on three cattle bones one from the Iron Age enclosure and two from Roman pit [8112]. Butchery marks were restricted to cuts marks on one cattle astragalus and mandible fragment from contexts in Iron Age RD7 and a furrow. The lack of butchery evidence may be attributed to poor bone preservation, which can reduce their visibility. Burnt remains were recorded in the assemblage; however, most were noted on unidentifiable fragments from four separate contexts in Iron Age RD7's ditch or its internal pits. Identifiable animal bones with signs of burning comprised a cattle metapodial and sheep/goat astragalus from a pit within RD7 as well as a deer antler fragment from a late Neolithic pit [9146]. It is possible that a limited amount of burning took place on site as a method of waste disposal.

Summary

The main domesticates (e.g. cattle, sheep/goat and pig) represent animals from the local economy. The lack of butchery evidence makes it difficult to determine whether the remains represent food waste; however, the presence of cattle skulls and foot bones suggest that butchery waste was disposed of in features across the site.

Charred Plant Remains

by Val Fryer

Samples for the retrieval of the plant macrofossil assemblages were taken from across the excavated area, with a total of 29 being submitted for assessment (Fryer 2018). All plant remains were charred. Modern roots, seeds, fungal sclerotia and arthropod remains were abundant within all twenty-nine assemblages. All the assemblages were <0.1 litres in volume. As none of the assemblages contained a sufficient density of material for quantification (*i.e.* 100+ specimens), no further analysis was recommended at the assessment stage.

Cereals, chaff and seeds are very scarce, occurring (mostly as single specimens) within only thirteen of the assemblages studied. Preservation of most remains is very poor, with many cereals and seeds being severely puffed and distorted, probably as a result of exposure to very high temperatures during combustion. However, the hazel (*Corylus avellana*) nutshell fragments within the Neolithic pit fills are generally very well preserved, showing only slight signs of weathering/abrasion.

Late Neolithic Features

The eight samples of Neolithic date are from fills within three pits and from ring ditches 5, 6 and 8. The pit assemblages are of interest, as it would all appear to be derived from small quantities of buried midden waste, with hazel nutshell fragments and pieces of charcoal being present throughout along with occasional grains, tubers and small fragments of burnt bone (Table 7). The composition would appear to suggest that the local inhabitants were heavily reliant on gathered foods, with the remains of their foodstuffs possibly being disposed of in a seasonal ritualistic cleansing of the site. Such assemblages have now been noted at a number of sites of Neolithic and Beaker date (cf. Harford Park & Ride site, Norwich; Fryer forthcoming) and are thought to represent the ritual cleansing of a site within a largely transhumant society. The ring ditch assemblages are very sparse, containing little other than flecks of charcoal (Fryer 2018, tables 17 and 24).

Mid to Late Iron Age Features

The six assemblages are from pits and from ring ditch 7 (Fryer 2018, tables 19 and 20). Cereals, chaff, seeds, charcoal and bone fragments are present within pit [9103] (samples 329 and 330) and ring ditch 7 (samples <304> and <308>), all of which are thought to be derived from scattered domestic/agricultural detritus. The paucity of material may indicate that the structures were kept clean (possibly to minimise the risk of accidental fires), although it should also be considered that the buildings may not necessarily have been domestic in nature.

Roman Deposits Including Mausoleum

The twelve assemblages are from burials, cremation deposits, a possible post hole, a pit, a layer and a gully (Fryer 2018, tables 21 and 23). Most are extremely small (considerably less than 0.1 litres in volume), with some containing only single flecks of charcoal/charred wood. The assemblages from cremation burial 5 and cremation burial 7 do contain higher densities of charcoal, although most of the material is much comminuted. Occasional cereals/seeds are also noted, but much of the material from the assemblages would appear to be derived from the use of the area as a mausoleum, including both burial and cremation deposits. The few cereals and seeds are almost certainly derived from plants which were burnt *in situ* beneath the pyres or from materials which were used as tinder or kindling. There is nothing to indicate that food offerings were placed alongside the bodies of the deceased, and because of the nature of the structure, it is considered unlikely that domestic activities were occurring within the near vicinity.

Roman Cremation Pit [8015]

The assemblages from two samples <280> and <301> from pit [8015] both contain moderate to high densities of charcoal/charred wood along with small pieces of burnt/calcined bone, but other remains are exceedingly scarce (Fryer 2018, table 22). It would again appear most likely that the material is derived from scattered detritus, although in this instance, it is unclear whether the material is domestic and/or funerary in origin.

Discussion

Excavations at Passenham Quarry have collectively found important remains dating from the late Neolithic to late Roman periods. Although this report deals with only the 2014 excavation it has been able to set findings in context by reference to earlier archaeological work in the quarry.

The Passenham Quarry site lies adjacent to the river Great Ouse. No palaeo-channels were found within the 2014 excavation area and the ring ditches were therefore located to the east of the river away from any flooding. Their location next to the river confirms Biddulph's view that river valleys continue in importance through the Neolithic and early Bronze Age (Biddulph 2009, 22). The Ouse seems to have been a long-standing significant boundary which, even today, is the division between Buckinghamshire and Northamptonshire from Thornton to Cosgrove, though between Cosgrove to Cold Brayfield the boundary is north of the Ouse.

Although the Passenham Quarry site falls within the Solent-Thames Research regional framework area, the East Midlands research frameworks are also relevant (and in some cases more important). As noted by Bradley (2014, 91), Buckinghamshire in the Neolithic and early Bronze Age had close connections with that of the East Midlands and not with most of the Solent-Thames area. The importance of the various archaeological findings recorded at Passenham Quarry in 2014 have

TABLE 7 Environmental samples from late Neolithic pits

Sample No.	**310**	**319**	**326**
Context No.	**9145**	**9318**	**9362**
Cut No.	**9146**	**9319**	**9364**
Feature type	**Pit**	**Pit**	**Pit**
Period	**1**	**1**	**1**
Cereals			
Triticum sp. (grains)	-	-	x
Cereal indet. (grains)	x	-	x
Herbs			
Arrhenatherum sp.	-	-	x
Tree/shrub macrofossils			
Corylus avellana L.	xxxx	xx	xx
Other plant macrofossils			
Charcoal <2mm	x	xxx	x
Charcoal >2mm	-	xxx	x
Charcoal >5mm	x	xxx	-
Charcoal >10mm	x	xx	x
Indet. seeds	-	-	x
Other remains			
Black porous 'cokey' material	-	x	x
Bone	xb	-	-
Charred droppings	-	-	xcf
Mineralised soil concretions	-	xxx	-
Sample volume (litres)	**30**	**40**	**30**
Volume of flot (litres)	**<0.1**	**<0.1**	**<0.1**
% flot sorted	**100%**	**100%**	**100%**

Key:
x = 1 – 10 specimens xx = 11 – 50 specimens xxx = 51 – 100 specimens
xxxx = 100+ specimens.
cf = compare b = burnt

therefore been put into context using overviews derived from draft local frameworks for Buckinghamshire (Thorpe 2009; Farley 2010) and Northamptonshire (Tingle 2004), and also comparison sites from Buckinghamshire. The research frameworks for the East Midlands (Cooper 2006) and Solent-Thames (Hey & Hind 2014) have also been referred to in order to better understand the importance of the Passenham site in a regional context.

Late Neolithic

The 2014 excavations found significant late Neolithic remains which relate both to funeral and possibly domestic activity and occupation. The late Neolithic is represented by three ring ditches (RD5, RD6 and RD8), the latter of which is probably a hengiform monument. There are also c.11 contemporary pits. With the exception of a single pit, these features were found no more than 70m from the present river course and loosely grouped over a *c*.150m by 70m area. One isolated pit [9005] near the site's southern site boundary was found more than 100m away from this group, *c*.150m from the river. It is uncertain the chronological order of the main late Neolithic features within the site. No artefactual evidence of any activity within the site (or from earlier archaeological work in the quarry) was dated to the middle Neolithic. The pottery, flint and three radiocarbon dates give the ring ditches and the dated pits only a broad late Neolithic date within the 2014 excavation area.

The funerary activity comprised a slightly curvilinear arrangement of three ring ditches, including the probable hengiform monument, all of which were aligned roughly parallel to the river on a ridge of natural gravel. This area continued as a long-term ritual centre into the early Bronze Age, when the line of late Neolithic ring ditches was continued to the north-east by the addition of four early Bronze Age barrows (Fig 1; Walker 2009; Walker 2011). The possible late Neolithic domestic remains comprised a loose group of *c*.10 pits located some distance to the west of the hengiform monument. Two of these pits contained late Neolithic pottery, three had flint pieces and the others were dated by association or form. One of the two pits which had late Neolithic pottery also contained human cremated remains, suggesting the pits and ritual activities may have been linked.

Ring Ditches

The six round barrows (RD1-6) occupied a ridge of gravel over a *c*.300m distance. It is possible that this slightly raised area remained dry, perhaps even forming an island, when the river flooded. They were located in a shallow arc on the south-eastern bank of the river, between *c*.20m and *c*.40m from the river. They were not equidistant, ranging from less than 6.0m to 75m apart. RD5 and RD6, along with three of the previously excavated ring ditches to the north, were single ring ditches, unlike RD2, which was double ringed. This is similar to the barrows from Gayhurst Quarry (Bucks), which were all single ringed except one, which was double ringed (Chapman 2007).

RD5 and RD6 (probable ploughed out barrows)

RD5 and RD6 were both severely truncated, with no evidence of upstanding mound material, nor of any buried soil or prehistoric alluvium lying above the gravel. Of the other barrows, only RD3 had been visible as an earthwork prior to excavation (Walker 2009). This was shown on excavation to be a raised area of topsoil representing a 'ghost' of the former mound, probably indicating the mound had been ploughed relatively recently.

RD5 and RD6 were 16m and 24m in external diameter respectively. This compares with RD1 and RD3 and RD4 which were between 23.50 to 31.50m in diameter. The outer ring of the double ring ditch (RD2) was 32m in diameter; the inner ring 17m.

No internal features were associated with RD5 and RD6 or any of the other four ring ditches. It appears that ploughing had removed the barrow mounds and destroyed any burials either within or at the base of the mounds or in shallow pits below the mound, leaving only the encircling ditches. Finds from RD5 and RD6 comprised 76 pottery sherds (0.50kg), with five worked flints from the former and 35 worked flints from the latter. Finds within the ditches of RD1-4 included a number of pieces of flint, not contemporary with the excavation of the ditches but likely dating to the earlier Mesolithic or Neolithic periods. Small amounts of pottery in the upper fills of RD2 and 3 are dated to the later prehistoric and Roman periods.

RD8 (probable hengiform monument)

RD8 is likely to have been a hengiform monument (or mini-henge). It was formed by two sepa-

rate ditches, roughly circular in plan, and had a *c*.8.0m external diameter and internally measured *c*.5.0m-5.50m. Its two entrances were 0.20m wide and the other more than 0.40m and there was an undated internal pit. The two entrances were on the north-west and eastern side within the larger of the entranceways on the eastern side. This may be significant, as for Neolithic monuments the entrances, the location of burials or the alignments of enclosures and mounds are often to the east or north-east (Chapman 2004, 35). At its simplest, it may relate to the direction of the rising sun, with north-easterly alignments pointing to the midsummer sunrise, the most important time of the year to prehistoric people (*ibid*, 35).

Within its southern segmented ditch there was a significant quantity of cremated bone (over 4kg) deposited in the south-eastern part of the southern segmented ditch. This bone, which was radiocarbon dated to the late Neolithic period, comprised parts of at least three people and survived as a tip line showing the bone had been deposited from the south side of the ditch as a single deposit. The other four excavated sections through this hengiform ditch produced no cremated bone. This suggests that these cremated remains may have been a closure deposit within the former ditch. The mixing of multiple human remains in the backfill of the ditch may suggest that all three were cremated at the same time and were deliberately placed together.

After disuse, the hengiform monument seems to have continued to be respected, even after its ditches were backfilled. A small cremation pit was cut into the backfill of the ditch on the south-western side of the former monument. This pit contained 217g of human remains. Two adjacent small cremation pits lay outside the hengiform ditch on its north-eastern side. It was uncertain whether these cremation pits were contemporary with the monument or post-dated and respected its position.

The structure is of the right date and appearance to be a possible hengiform monument. The Oxford Reference definition for such a feature is that it is a very small henge-like feature less than 15m across and may have one or two entrances. In the central area there are often pits and cremation burials (Oxford Reference, accessed 19/9/2019). No remains of a bank was found at RD8, but its very small size suggests that the upcast from the two segmented ditches had either been used to form a small mound over the internal area or deposited on the outside. In the latter case it would meet at least part of the definition of henges and hengiform monuments, namely that they are enclosures where the ditch lies inside the bank (HE 2018, 2). There was no evidence of posts outside RD8's ditch, but these may not have survived.

This hengiform monument or mortuary enclosure is the first of its type found in Buckinghamshire (Kidd 2010, 40 and fig 2.7). The nearest recorded henges to Buckinghamshire are at Maiden Bower (Beds) and Dorchester (Oxon). Parallels to its form and the presence of cremated remains have not yet been found. The nearest possible example was an early Bronze Age (2020–1680 cal BC) segmented ditched circle at Raunds (Northants) with an internal diameter of 7m. Together with three cremation burials, this was located over a long-maintained ritual avenue (Harding & Healy 2007, 147 and 210).

Overview of Neolithic Ceremonial or Burial Monuments

Kidd (2010, 67) noted that there were only eight possible Neolithic ceremonial or burial monuments so far recorded in Buckinghamshire as of 2010, but many of these identifications were doubtful. The definite Neolithic monuments seem to all date to the early Neolithic, far earlier than Passenham. An early Neolithic oval barrow at Whiteleaf Hill, Princes Risborough started around 3700BC and may have continued for around 500 years (Childe & Smith 1954; Kidd 2010, 33-35). The causeway enclosures at Dorney Reach and Eton Wick were probably constructed in the early Neolithic, the former also having oval barrows adjacent to it (Kidd 2010, 37 and 67). A possible early Neolithic cursus monument has been found at Wolverton (*ibid*, 33-34).

The late Neolithic date of RD5 and RD6 makes them the earliest ring ditches in the county, with other such examples being dated to the early Bronze Age (*ibid*, 43 and 68). For the whole of Buckinghamshire, apart from Milton Keynes, there were 61 occurrences of round barrows and 90 for ring ditches in the HER as of 2009, but these numbers may be overstated (Biddulph 2009, 22-23). Kidd (2010, fig 2.7) records four barrow cemeteries in Buckinghamshire, three in the far southern extent of the county at Dorney, Marlow and Saunderton,

and one from Milton Keynes at Gayhurst Quarry. The barrows at Passenham Quarry are within an area where there have been two excavations of multiple early Bronze Age barrows and can be compared well to other examples (especially the four early Bronze Age ring ditches to the north-east excavated in the earlier stages of the quarry excavation). The location of Passenham Quarry ring ditches is therefore typical as, "Excavation of ring ditches on the valley floors of the Ouse and Ouzel at Milton Keynes have provided the best evidence for this period in Buckinghamshire" (*ibid*, 43).

There are similarities between the Passenham Quarry and the early Bronze Age barrows at Gayhurst Quarry (Chapman 2007). The Gayhurst group were located *c.*12km to the north-east of Passenham, and had also been placed adjacent to the south of the Ouse. At Gayhurst, three barrows formed a line adjacent to the river, although a further band of four barrows formed a separate group, parallel to the river but up to 150m to the south (*ibid*, fig 3). At Gayhurst Quarry, barrow 2, which was double ringed, was the earliest of the group and has been radiocarbon dated to the early Bronze Age (2200–1850 Cal BC) whilst the single ringed barrows dated to 1850–1450 Cal BC (Chapman 2007, table 1).

In his overview of the prehistoric Northamptonshire, Chapman (2012, 16) dates the round barrow to the early Bronze Age, and the start of large barrow construction at 2300–2150 cal BC. In contrast to Buckinghamshire and Northamptonshire, in some parts of the East Midlands region the round barrows may have started earlier: Clay (2006, 80) comments that, "round barrows and ring ditches are the most abundant form of later Neolithic-earlier Bronze Age monument from the region, numbering over 800". Clay (*ibid.*) notes that in Derbyshire there are 187 unchambered round barrows and cairns of later Neolithic-earlier Bronze Age and the majority of a further 443 undated barrows may also be of this period.

Pits

There were *c.*11 late Neolithic pits at Passenham. Apart from one, they were concentrated in a small area between *c.*7m and 50m to the west of the hengiform monument. Two of these pits were radiocarbon dated to between *c.*2600–2400 BC post-dating the backfill of RD8 by at least 200 years (Fig 17). The pits and RD8 may therefore not been directly related and their proximity may therefore been more about respecting the physical presence of the monument. The nearest barrow (RD6) to the pits was 50m to the north and therefore the pits were also seemingly respecting these visible monuments.

This association between the pits and the burial monuments can also be seen in their contents. One pit [9146] contained a small quantity of human bone near its base, which may suggest the purpose of the Neolithic 'occupation' was possibly also 'ritual' in nature. Pit [9146] may suggest a combination of domestic and funerary activity, as in addition to the cremated bone it contained a moderate collection of pottery, worked flint and some hazel nutshells. Pit [9319] contained pottery and worked flint, whereas most of the other pits contained few artefacts or ecofacts. There was slight evidence for cereal production recovered from soil samples from these pits, and plant macrofossils also showed that hazel had been growing close to the site.

It is important to note that the pits presumably derived from domestic activity. Two of the Passenham pits contained Grooved ware. This domestic aspect of the fill material is perhaps significant as pits associated with Grooved ware are most apparent in the vicinity of monuments (Bradley 2014, 101). This evidence of domestic occupation in the late Neolithic date is important partly because it is unusually early not just for the local Passenham area but also for Buckinghamshire (and Northamptonshire), and indeed for the wider region (Thames-Solent and East Midlands). Kidd (2010, 73), for example, noted that it is not until after 2300BC that there are signs of widespread occupation in the Upper Ouse Valley. In Northamptonshire, individual pits and small pit clusters have been found particularly on the gravel of the Nene Valley, and these possibly mark temporary house sites (Chapman 2004, 36). Chapman gives rare examples of Neolithic pits in the county, quoting examples at Wollaston (unpublished) and Gretton (Jackson & Knight 1985). Recently, two late Neolithic pits have been found at Middleton Cheney (Cuthbert & Zeepvat 2017, 11). From the whole of Buckinghamshire, apart from Milton Keynes, there were 31 occurrences for Neolithic to early Bronze Age pits in the HER as of 2009 (Biddulph 2009, 22-23). Kidd (2010, table 1 and 37-47) noted that for the later Neolithic there were few domestic sites for this period in Buckingham-

shire: Kidd (*ibid*.) calls the evidence "remarkably sparse", suggesting either low population levels or that people lived in ways that left few recognisable traces. These sites were defined by Peterborough and Grooved ware pottery and mostly comprised pits. These pits were found singular or in a cluster. Kidd (*ibid*, 38) lists seven sites where these were found, including three in Milton Keynes at Heelands, Secklow and Stacey Bushes (the later just *c*.3km to the east of Passenham). A rare comparative example is a pit from Coldharbour Farm (Bucks) containing late Neolithic pottery, knapped flint and charred hazelnut shells (*ibid*, 38), but Kidd noted that unfortunately no radiocarbon date was taken.

It is not surprising that no evidence for structural remains were found at Passenham. Bradley (2014, 101) noted that in the Thames-Solent area there was little structural evidence in the late Neolithic period, the main information still being provided by the contents of pits. For the East Midlands region, Clay stated (2006, 77 and fig 24) that settlement evidence from the later Neolithic to earlier Bronze Age was rare with evidence generally limited to discrete deposits such as pits.

Passenham may help in answering one of Bradley's research agenda questions (Bradley 2014, 112 point 8.4.2) which asks if the impression that there is more extensive and denser settlement in the later Neolithic in many parts of the region real, and if so, does increasing population have an impact on other aspect of human activity, such as ceremony and ritual activity and burial practices? The above question is partly relevant as a search in the Solent-Trent and East Midlands regions could not find evidence for cremated human bone being recovered from a late Neolithic pit. In addition, if we include ring ditches RD5 and RD6, as they were probably ploughed-out burial monuments, and the remains from the hengiform monument RD8, collectively these seem to show a respect/link between death and the living represented by the adjacent settlement evidence (pits).

Artefacts and Ecofacts

The quantity of late Neolithic pottery (114 sherds weighing 2.5kg) is modest, but is derived from contemporary features. Late Neolithic pottery (Grooved ware) is not common in county and has now been shown to post-date Peterborough ware. In addition, a modest quantity of worked flint (179 pieces) was recovered from the excavations, but significantly nearly 150 worked flints were recovered from contemporary late Neolithic features (ring ditches and pits). The flints comprised mainly flakes and blades, with evidence of minor flint working, and the collection included a few cores and other tools. Although not numerous, this collection of flint helps in the understanding of use and type of activity which occurred within the site.

It is worth noting Bradley's comment (2014, 100) that it is not always easy to synchronise the chronology of Neolithic monuments with that of flintwork. However, the radiocarbon dates and the recovery of only late Neolithic pottery with the flint have helped in this process. The Passenham flint comprises 23 blades, two scrapers, an arrowhead, an axe trimming flake, three cores as well as flakes.

The very poor survival of the animal bones in the acidic soils precludes any meaningful analysis of these ecofacts. Neither of the two animal bone fragments from late Neolithic contexts could be assigned to more than just 'large mammals'. The evidence from environmental samples from the pit assemblages were more useful (see Fryer above). Fryer notes that it is likely there were small quantities of buried midden waste, with hazel nutshell fragments and pieces of charcoal present as well as occasional grains and tubers which would appear to suggest that the local inhabitants were heavily reliant on gathered foods, with the remains of their foodstuffs possibly being disposed of in a seasonal ritualistic cleansing of the site. In contrast, the environmental samples from the burial monuments contained only very small quantities of charcoal with no other remains. This contrast between the remains in environmental samples recovered from different types of features show a clear divide in activities undertaken within funerary and domestic activity areas.

Late Bronze Age to Early Iron Age

The excavations at Passenham Quarry show that the end date for ritual activity is likely to be some time in the middle Bronze Age, when the ring ditch monuments seemingly went out of use. The only evidence of activity within the quarry from the middle Bronze Age to the middle Iron Age (Walker 2009; Walker 2011) was a single late Bronze Age/early Iron Age pit alignment, located directly to the north of the 2014 excavation area (Fig 1). The

location of this pit alignment, at a right angle to the river, extending from it through the alignment of late Neolithic and early Bronze Age ring ditches, may suggest the former barrows no longer had any ritual significance. The placement of this pit alignment in this location was almost certainly deliberate. Pit alignments often appear to be associated with prominent landscape or monument features. This has been noted elsewhere: Taylor (1997) states that pit alignments often appear to have extended out from earlier prehistoric ceremonial monuments.

Whether or not they were constructed with the intention of describing 'owned' territories, or for demarcating certain rights, the appearance of pit alignments marks a major reorganisation of landscape, or at least a re-definition of existing boundaries previously expressed by other means. These developments may reflect intra-regional variations in the agricultural economy and/or variable pressures upon land resources, the origins of field systems, and on the developments landscape organisation over time (Willis 2006).

The pit alignment was therefore probably an agricultural land division event, part of a larger movement of establishing boundaries along the eastern side of the Ouse. Boutwood (1998) notes a correlation between pit alignments and water courses in Lincolnshire: the explanation for this is unclear, but she suggests that this may have both practical and ritual/symbolic elements relating to access to water (for pasture animals) and in emphasizing a natural boundary (Hingley 1989, 143–4).

Middle to Late Iron Age Farmstead

The middle to late Iron Age marked a change in the focus of activity within the quarry area. Three separate Iron Age sites were probably established in this period, collectively located over a *c*.500m by 150m area. A farmstead was established within the 2014 excavation area, along with two separate enclosures E1 and E2 (350m and 250m to the north-east respectively) which were found in previous excavations (Walker 2009; Walker 2011). The increase in activity and occupation in this period may be evidence for population increase during the middle and late Iron Age. In Bedfordshire in the middle to late Iron Age there was a general trend of more settlements along the river valleys and also on clay areas (Luke 2008, 38). This also seems to be true of Northamptonshire, and can be seen at Bozeat Quarry, where a middle to late Iron Age settlement was established in *c*.200BC on a former greenfield site, *c*.350m east of Grendon Brook (Atkins 2018b).

It is noticeable that the middle to late Iron Age farmstead from the 2014 area was located in the same area as earlier prehistoric remains. This mirrors findings at many later prehistoric sites in Buckinghamshire such as Broughton Manor Farm (Atkins *et al* 2014), Pennyland and Hartigans (Williams 1993), Bancroft (Williams & Zeepvat 1994) and Gayhurst Quarry (Chapman 2007).

The middle to late Iron Age farmstead was recorded within the excavation area located on the gravel ridge, parallel to and within *c*.30m of the present course of the Ouse. It comprised a sub-rectangular enclosure *c*.80m long (north to south) and *c*.70m wide and defined on three sides by a ditch which was up to 2.0m wide and 1.50m deep. It contained an internal roundhouse, a possible animal pen (enclosure) and a few isolated pits. This settlement was in use for a relatively short period of time, possibly being established in the 2nd century BC and going out of use in the 1st century BC. It was possibly contemporary or even related to the pit alignment to the north. The two isolated agricultural enclosures E1 and E2 to the north-east, which due to the dearth of artefacts, were only broadly given an Iron Age date may also be contemporary. It is uncertain whether they were part of the farmstead found in the 2014 excavation.

The settlement arrangement in the 2014 excavation was probably occupied by a single extended family. This is a common plan form for a small farmstead, and is seemingly typical of several others in the region and signifies a move from largely unenclosed settlements in the early Iron Age to the middle Iron Age where sites were increasingly becoming enclosed. Willis noted (2006, 101) that, "Rectangular ditched enclosures, covering not more than *c*.0.5ha and containing one or two circular buildings, together with ancillary structures are seen as the typical site type of the middle to late Iron Age in central Britain. Evidently they represented the farmsteads of small family or kin groups." At Site D, A5M1 (Beds), a middle to late Iron Age enclosure was a slightly irregular trapezoidal shape at *c*.63m by *c*.53-47m wide and comprised substantial ditches at up to 3.0m wide and at least 1.30m deep (Brown 2020). A stock corral was hypothesised for a middle

Iron Age rectangular enclosure at Cambridge Road, Bedford, which contained very few internal features with pottery and animal bone also scarce (Chapman & Chapman 2017, 67-8). This enclosure was in excess of 29m long with a width of 41m and its ditches were between 1.10m and 1.68m wide by 0.50m to 0.90m deep (*ibid*).

A *c*.14m diameter ring ditch (RD7) was located in the southern central part of the sub-rectangular enclosure. Its size is in the larger range of other recorded early and middle Iron Ages eaves-gullies in the region, which mostly ranged from 8.0m to 14m in diameter (Webley *et al* 2007, fig 6.3). At Brooklands, Milton Keynes, internal diameters ranged from 6.64m to 15.49m (Atkins *et a*l 2014, 121). Topler's Hill settlement (Beds) contained five roundhouses located in three enclosures with two partially excavated: these varied from *c*.13m and one was very large at 18m diameter (Moore *et al* 2007).

The eastern entranceway of RD7 was very typical of other examples. All four discernible entranceways at Fairfield Park were on this eastern alignment between 95° and 105° east of north (Webley *et al* 2007, fig 6.5). The concentration of pottery within the entranceway of RD7 has parallels also. Here, the entrance to roundhouses and enclosed spaces were commonly a focus for concentrations of material during this period (Hill 1995). This phenomenon was true for the Broom, Gypsy Lane site (Cooper & Edmonds 2007, fig 5.33) and at Fairfield Park (Webley *et al* 2007).

In the middle to late Iron Age period, the only area where there was possible deliberate waste disposal was in the terminals of RD7 (see above). No other deposit contained even moderate assemblages. This is perhaps surprising, as the excavation uncovered a middle to late Iron Age settlement including a domestic roundhouse. Only a small quantity of middle to late Iron Age pottery (341 sherds weighing 3.8kg) was recovered from the farmstead and the lack of domestic waste may suggest that rubbish was not being disposed of in features but may have been used in manuring.

At the north-eastern corner of the sub-rectangular enclosure was an internal small sub-rectangular internal enclosure which may have been a paddock. It measured 16m long by 12m wide and its ditch was between 1.18m and 2.10m wide and 0.38m to 0.90m deep. Many agricultural enclosures in this middle to late Iron Age period seem to have been fairly small. At A5-M1 Site G (Beds), a sub-rectangular enclosure measured *c*.17m by 11m, its enclosure ditch was up to 1.70m wide and 0.95m deep and its size may suggest it had been used as a paddock (Brown 2020). At Site D (*ibid*.), a possible enclosure (ED2) seems to have been *c*.17m long and at least 12m wide and was probably oval or sub-rectangular in shape, but the ditch was up to 1.10m wide and 0.45m deep.

The two conjoined middle/late Iron Age enclosures at Bozeat Quarry (Northants) were square with 20m and 13m diameter internal spaces respectively (Atkins 2018b). The surrounding ditches also varied, the former having a large ditch at 2.20m wide and 1.0m deep while the latter was 0.60m wide and 0.14m deep.

The very poor acidic soil conditions at Passenham meant that only 43 animal bone fragments could be assigned to species. Cattle dominated with 32 fragments followed by five fragments of sheep/goat respectively, two pig and four horse fragments. The assemblage was too small to allow for a detailed analysis; however, there is some evidence to suggest the remains represented food/butchery waste (see Gordon above). In the earlier Passenham excavations to the north even less bone was recovered from the Iron Age features (Walker 2011). Small quantities of seeds and macrofossils were found in the environmental samples and in the earlier Passenham excavations the assemblages were also very small in quantity. The exceptions included the abundance of grain from one posthole within an Iron Age enclosure (Walker 2011). The overall negative results from the environmental samples means that little can be said about the agrarian nature of the site.

Roman

A Roman stone mausoleum, associated burials and pits, and a routeway were found within the 2014 excavations. They were linked/part of a domestic site recorded directly to the east (Fig 1) (Morris 2006). A similar mortuary enclosure had been excavated 200m to the north (Walker 2011). Pottery recovered from the 2014 excavation dated to *c*.2nd to 4th centuries AD and it is significant that this is the same period when the settlement to the east had been in use (Morris 2006).

Construction materials were found in the Roman settlement to the east and comprised 64 fragments (more than 9kg) from six evaluation

trenches including *tegula*, *imbrex* and hypocaust tile (box and *pilae*). This suggests the Passenham Quarry site may be on the periphery of a relatively well appointed 'settlement' located in the general vicinity. Five roof tile fragments were found in the 2014 excavations. If the settlement to the east was a villa, its location here would not be surprising. In the Ouse Valley near Milton Keynes, villas have been recorded at intervals of 2-3km along both sides of the river (Zeepvat 1991, 23). On the north bank there are villas at Deanshanger, Cosgrove, Haversham and Gayhurst, and on the south at Tingewick, Bancroft, Stantonbury and Stanton Low (Zeepvat & Radford 2010, 85). The nearest villas to Passenham are at Deanshanger on the opposite side of the Ouse less than 2km to the north-west, Bancroft 5km to the east-north-east and Wymbush 5km to the east: Stanton Low is *c.*8km to the north-east. In the Chilterns, a similar spacing of villas every 2-3km along the valleys has led to the suggestion that holdings of between 450-600 acres were laid out in the 2nd century (Branigan 1967, 147).

Routeway

A Roman routeway at least 300m in length was recorded in two locations. On the western side it led at right angles from the river, where presumably there had been a bridge or ford. It overlay an earlier Iron Age farmstead before reappearing over 100m to the east, where it led to a probable high-status site, possibly a villa (Morris 2006). To the east, this settlement would presumably have been connected to the roman road now known as Watling Street, which passes less than 2km to the east on a north-west to south-east alignment from *Magiovinium* to Towcester (Zeepvat & Radford 2010, fig 3.6). It has been estimated that by *c.*AD 150 at least 10,000 miles of Roman road had been built across England and numerous secondary roads (including unmade routeways) from settlements and industrial sites linked into this network (Smith 2011, 2-5). This routeway was similar to others found elsewhere such as within Biddenham Loop (Beds) (Luke 2016, 283), where two routeways joined to the north of a farmstead and were traced for 0.9km and 1km distances respectively. It should be noted that the river network was a significant transportation system. It likely that some of the larger rivers in Buckinghamshire, including the Ouse, had been used for the transportation of goods (Zeepvat & Radford 2010, 79).

The Passenham routeway led from the settlement excavated in 2006, and two inhumations (burials 3 and 4) respected the routeway's northern side within the 2014 excavations. This placement reflects the practice of having the dead aligned along roads out of Roman towns. In rural settlements burials were often built next to routeways – about 50 burials were located along routeways at the large farmstead at Broughton Manor Farm, Milton Keynes (Atkins *et al* 2014).

Shrine/Mausoleum

The shrine/mausoleum was located 50m to the north of the routeway. In its first phase it may have been a shrine, as no burials were associated with it in this phase. It was established over the remains of two tree-throws: it is uncertain whether those trees had any significance to the later ritual use of the site. The first structure comprised a sub-round ditch with an internal diameter of *c.*3.5m. On the eastern side there was a small gap in the ditch where there was a large posthole.

At least four farmsteads in the area have produced evidence for shrines. Two had shrines which lay within small sub-rectangular, probable wooden structures – Brooklands (2.70m by 2.60m; Atkins *et al* 2014, 202) and Broughton Manor Farm (3.50m by 3.25m; Atkins *et al* 2014, 189–90). The latter was within a larger irregular pentagonal enclosure measuring *c.*15m by 10m enclosure. At Wavendon Gate a shrine consisted essentially of a water-filled pit overlooked by a timber structure topped by a wooden wheel-icon (Williams *et al* 1996). A possible small stone shrine was found at Monkston Park (Bull & Davis 2006).

The shrine was replaced by a circular stone mausoleum structure in the middle Roman period. The immediate area around the stone mausoleum contained two inhumation burials and at least three cremation burials. It was extremely similar to a stone mortuary enclosure found in Area 6, some 200m to the north (Walker 2011). The two structures were *c.*100m and 300m to the north-west of a Roman settlement, which contained at least two stone buildings, one round and one sub-rectangular (Morris 2006).

The two stone mortuary enclosures also date to this middle to late Roman period. It is extremely likely they were constructed as ritual monuments, probably as a mirror image of each other, and built

by people from this settlement. No other settlement of this period is known within this area. The two mortuary enclosures were similar in many ways, both in their size and construction and the fact they contained human cremation burials (Table 8).

Whilst stone mortuary monuments of this period are known in Britain they are rare and there are few examples that are directly comparable. The mausoleum appears to be of a type known as barrow tumuli (Toynbee 1996), which are characterised by the presence of a low masonry drum containing a cone of earth. Many of the examples known in England are substantially larger than the Passenham structures, although an example at Keston in Kent measured just less than 9.0m in diameter (Philp 1991).

A circular building, 6.80m in diameter, constructed of unmortared pitched stone was found at Bancroft (Williams & Zeepvat 1994). It was located 30m to the north-west of a substantial Romano-Celtic temple/mausoleum and was interpreted as a shrine. A shallow central pit contained a pig burial and 4th-century coins. The size and shape may be similar to the possible Kempston (near Bedford) temple/shrine, located 100m from an enclosed cemetery, which only the south-eastern 'arc' survived (Dawson 2004, fig 5.101). It was stone-built, 10-sided or circular in shape with a projected external diameter of between 6.0 and 7.0m, but no internal features were noted.

Burials

It was noticeable that at Broughton the burial areas were set away from the domestic occupation and the fields and had been respected. This can be seen by the way the cemeteries had not been built over even after burials had ceased to be interred. This is probably true of Passenham, as no evidence of Roman fields or enclosures were encountered in the 2014 excavations. The two Passenham mortuary enclosures were set *c.*200m apart, signifying that this whole area may have been demarcated for ritual activity. It is possible that there had been further burials in this location as soil conditions were not conducive to bone survival.

A total of 13 Roman burials have been recovered in the work at the Passenham quarries. Nine are described in this report (five Roman cremations and four Roman inhumations), while four cremations were recovered from the previous work in the quarry (Walker 2011). Roman rural burials are also not common in Northamptonshire, Buckinghamshire or the region in general (Atkins *et al* 2014).

Two burials associated with the mortuary enclosure contained artefacts. Cremation burial 7 was a pyre burial where the dead person was accompanied by glass object(s), a bone pin and other items (more than 100 nails). The second burial, cremation burial 6, was an urned cremation. The mortuary enclosure is likely to date from at least the mid-2nd century AD, at a time when cremation burials were uncommon. In Buckinghamshire, out of *c.*262 recorded cremation burials dating to the late Iron Age to late Roman period, only three may date to the mid or late Roman period (*ibid*, 235 and table 4.24). The mid/late Roman date for the Passenham cremation burials is slightly unusual for the Milton Keynes area as there is a decrease

TABLE 8 Comparisons of mortuary enclosures from Areas 6 and 8 at Passenham

Aspects	*Area 6*	*Area 8*
Continuous round stone wall with no entrance	Yes	Yes
Diameter	*c.*5.0m	4.80m
Wall width	*c.*1.0m	0.70m
Pitched stones 'Herringbone '	Yes	Yes
Central cremation containing pyre debris and notable number of nails	Cremation urn containing 659 nails and pyre debris	Cremation 7 with pyre affected artefacts (100 nails+, glass and bone pin)
Secondary internal cremations	Cremated bone in wall foundations	At least one further cremation

in the number of cremation burials on most Milton Keynes sites in the 2nd century AD (*ibid*, 235). Comparisons comprised a single cremation from Stoke Hammond and two 3rd to 4th-century cremation burials from Westbury, Milton Keynes (*ibid*).

The grave goods in inhumation burial 2 are important, not for their rarity as objects, but as examples of burial goods contained in inhumations within a rural setting, as opposed to a town site (*ibid*, table 4.24). In Northamptonshire, eight 2nd-century cremation burials within barrows were excavated in antiquity at the top of Daventry Borough Hill (Brown 1977). These barrows were *c.*100m from a probable Roman villa. It is also important to note that for the East Midlands region, Roman burials are sparse in number on any one site (Taylor & Flitcroft 2004, 77).

The mixed burial rites at Passenham and their location is similar to Grange Park, Northampton, where remains of seven human inhumations and a cremation burial were uncovered in five different locations over *c.*100m distance (Jones *et al* 2006, fig 41, pp 173 and 240). A small 2nd-century cemetery at Higham Ferrers comprised three unurned adult cremation burials and an inhumation of a young child within a *c.*3.0m by 2.0m area (Lawrence & Smith 2009, 49 and 58-59). At the Roman town of Kettering, burials included both cremation and inhumation burials (Bull 1911, 495; Bull 1912, 224). Five burials in Bozeat's southern settlement comprised four cremation burials and a single inhumation over a *c.*100m² area (Atkins 2018b).

The Mortuary Enclosure Cremation Burials
by Chris Chinnock

The discovery of a large number of iron nails with the cremated bone is of interest and potential regional significance. The nails presumably derived from structures and especially from boxes. Parallels for this practice can be found at Eaton Leys, Bletchley and several sites further afield. The Roman period research framework and research agenda for the Solent-Thames region, notes that the relationship between ritual and settlement is not well understood (Fulford 2014).

A similar deposit, dated to the mid-2nd century, was excavated during an earlier phase of excavations at Passenham Quarry (Walker 2011). Here, a large urn containing cremated human bone was associated with over 1385 iron nails. In that case it was noted that most of the nails appeared heat-affected and were likely to have formed part of the bier or pyre structure/platform. This example was also found within a stone-built Roman mausoleum, very similar in design to that excavated in Area 8. Furthermore, excavations at Eaton Leys, Bletchley recorded a single unurned cremation, associated with a total of 84 nails (Chinnock 2016). Further afield, cremation burials associated with large numbers of iron nails have been recorded at Brougham, Cumbria (Cool 2004); Green Hammerton, North Yorks (Holst 2009); Baldock, Herts (Fitzpatrick-Matthews & Stevenson 2007); Lankhills, Winchester (Powell 2010) and Addlestone, Surrey (Marshall 2015). The number of nails associated with the cremated bone at these sites varies greatly, but in many cases is described as more than would be expected as a result of accidental inclusion. The burial at Green Hammerton included approximately 800 nails and a Nene Valley beaker, which has been dated to the 3rd or 4th century AD.

In both the earlier Passenham and the Eaton Leys cremations, the associated iron nails were mostly heat-affected, some displaying small fragments of cremated bone adhering to the iron. This suggests that the nails either formed part of the pyre structure and were collected along with the cremated bone, or formed a separate deposit as part of the funerary rite. It is not clear at this stage whether this reflects a regional trend or is reflected in the archaeological record elsewhere during this period.

The purpose of including iron nails into, or in close association with, the cremated material is unclear. Given that several sizes of nails are present within these assemblages, a variety of explanations are possible. The larger structural nails may relate to re-used timber used as part of the pyre, elaborate coffins, couches and or other pyre furniture (J McKinley *pers comm*). The smaller nails/tacks may have been used in the crafting of decorative boxes/caskets or even upholstered items that may have been placed as offerings on the pyre. It is unclear whether the inclusion of such large quantities of iron nails in cinerary contexts was a product of accidental inclusion as the cremated material was collected or a more conscious effort to select objects for some other perceived quality linked to the funerary rite.

In addition to the above examples, at Upton, Northampton, the remnants of a mid-1st-century box in the form of *c.*42 nails are probably from a small box/casket which was placed on the pyre when the body was cremated (Walker & Maull 2010). The two probable box/caskets recorded from Northamptonshire (Bozeat Quarry and Upton) contrasts with at least twelve boxes recorded from Buckinghamshire (Atkins *et al* 2014, 245) and at least seven from Bedfordshire (Brown 2020). Northamptonshire seems to have been at the periphery of the region where mid-1st-century AD to early 2nd-century boxes have been found. This was concentrated in the south and east of England, reflecting their Roman or Gallo-Roman origin and therefore their 'sophistication' (Borrill 1981, table 46; Philpott 1991, table A4).

Artefacts and Ecofacts

A very small assemblage of Roman pottery (62 sherds weighing 0.431kg) was recovered from features relating to the mausoleum and the routeway. With the exception of the vessels in Burial 2, the pottery comprises small sherds (mean weight 8g) suggesting disturbed rubbish deposited well away from their place of original usage. Within the routeway ditches there were two pieces of slag, probably derived from smithing rather than smelting: there were also five CBM fragments and limited other finds (mostly recorded in burial 7). Animal bone comprised 37 fragments which could be assigned to species: these were dominated by 32 cattle fragments and four fragments of sheep/goat respectively. The environmental samples from the Roman features were almost entirely devoid of any remains except charcoal.

Medieval/Post-Medieval

After the Roman period the site was used as fields with medieval/post-medieval ridge and furrow and a track recovered (shown as a ditch-like feature on Fig 1). This feature runs along the gravel ridge roughly parallel to the river and presumably demarked the western extent of the field system.

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