Whirlow Hall Farm
Excavation Report 2011

Volunteers excavating across the enclosure ditch in Trench 1.

ARS Ltd Report 2011/84
December 2011

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EXECUTIVE SUMMARY

A small-scale excavation took place at Whirlow Hall Farm during July-August 2011 over buried archaeological remains identified previously by geophysical survey. Two trenches were excavated: Trench 1 was located over the western entrance into a large rectilinear enclosure and Trench 2 was located over two narrow parallel linear ditch features to the north-east of the enclosure. The excavation was directed by Archaeological Research Services Ltd on behalf of Whirlow Hall Farm Trust and involved over 100 volunteers, most of whom had no prior experience of archaeological investigation.

Trench 1was the main focus of the excavation. The trench measured 15m by 15m and all excavation was undertaken by hand. As it took some time to manually remove the topsoil and subsoil layers and to carefully trowel back, only a few of the archaeological features within the trench were able to be investigated during this season of fieldwork. Two sections were cut across the perimeter ditch either side of the west entrance causeway. They revealed the same stratigraphic sequence which comprised two phases of ditch use, with the second phase including the construction of a low drystone wall against its inner face. The ditch fills and metalling so far excavated have produced a diverse range of Roman pottery dating from potentially as early the late 1st century AD, but mostly from the second century AD date.

An extensive area of stone metalling was identified across the interior of the enclosure which continued across the entrance causeway and outside the enclosure towards Fenney Lane. Evidence for a substantial entrance structure has begun to come to light. A well-made stone-lined posthole was excavated in the centre of the entrance causeway along the projected line of the rear side of the perimeter ditch. Further possible large post holes were identified at the two outer corners of the entrance causeway as well as a probable construction slot running across the causeway itself. Apart from the stone-lined posthole, these features have not yet been able to be excavated but further excavation of them should allow the entrance area to be accurately reconstructed once further investigation is complete.

Inside the enclosure part of the stone foundation wall for a substantial rectangular building was discovered positioned parallel with, and immediately inside, the western perimeter ditch. A beaten earth and partly flagged floor survived in the interior of this building and this produced a small sherd of Roman pottery. The floor layer has not yet been fully excavated and most of the building lies beyond the limits of the current excavation trench. The good preservation of the building deposits here provide the opportunity to assess the original form of this building as well as what it was used for, although only further excavation will elucidate this. The form of the superstructure of the building is not yet known with certainty, but it is thought likely that it was a timber-walled building that sat on top of the stone foundation wall with a roof that could have been of tile or thatch. Further excavation should reveal any surviving fragments of roof tile if the roof had been constructed in tile.

Sealed below the Roman period metalling, that also contained Roman pottery within its makeup, was a large, though shallow, pit that revealed evidence for in situ burning and that contained a substantial assemblage of late Iron Age pottery. This unexpected feature is of importance as it indicates that remains relating to pre-Roman Iron Age occupation also survive on the site and hint towards an as yet earlier farmstead on the site. Charred hazel wood has provided a radiocarbon date of AD 67 – 136 (68% probability). Further excavation and removal of some of the Roman period remains will allow any further Iron Age, or indeed earlier, features to be identified and thereby build up a more complete understanding of the full history of the site and the true antiquity of Whirlow Farm.

Trench 2 revealed one of the flanking ditches of a linear trackway but the other one did not appear to survive in this area. The ditch is straight and shallow and heads in the direction of the eastern entrance of the Roman period enclosure. No further excavation was carried out in this trench. Systematic metal-detecting across the field surface revealed a number of lead objects clustered mostly around the eastern half of the enclosure. It is not yet clear whether lead working was carried out on the site.

1. INTRODUCTION

1.1 SCOPE OF WORK

1.1.1 The Whirlow Hall Farm Trust received a Heritage Lottery Grant to undertake a programme of heritage research and archaeological investigations into the history of Whirlow Hall Farm. The project comprised a professionally-led programme of training, participation, learning activities and public engagement. The Trust invited local schools, community groups, volunteers and visitors to participate in a range of activities to help record the buildings and discover and record the history of Whirlow Hall Farm.

1.1.2 The geophysical survey undertaken in April 2011 had revealed the truncated and buried remains of a large rectangular enclosure in 'Hall' field south of the farm buildings. A targeted excavation encompassing the enclosure's west entrance and the outlying double ditched linear feature was undertaken over a three week period in June-August 2011 in order to gain an understanding of their date and function.

1.2 LOCATION AND GEOLOGY

1.2.1 Whirlow Hall farm is situated on the edge of the city of Sheffield, South Yorkshire, approximately 8km to the south west of the city centre (NGR SK 31233 83177 (centre)) (Figures 1 and 2). The farm extends to some 55ha (138 acres) and occupies a site which generally slopes down from west to east and also from north to south. To the immediate east of the enclosure the field slops down into the south-east corner of the field. A stream course used to occupy this field running from where the current car park is located to the field's south-east corner. In recent years this stream has been culverted and now runs underground. The proximity of this water course was no doubt important in the decision to locate the enclosure in this field. Being located on sloping ground the enclosure occupies dry and free draining position and is sheltered from the prevailing south westerly wind being tucked below the spine of the ridge that runs along the east side of the Limb Valley. The slope on which the enclosure sits is south east facing and enjoys direct sunlight throughout most of the day. Despite being located at 235-240m the site occupies a locale attractive for settlement and agricultural activity. Although now screened by trees to the east and west and with views to the north obscured by Whirlow Farm buildings and to the south by a modern housing development, the site would have originally commanded extensive views south over the head of the Sheaf Valley and east down the length of the Sheaf Valley. To the west views would have been immediately limited by rising ground and to the north the view would have extended for around 500m to the shoulder of the hillside.

1.2.2 The underlying geology consists of Rough Rock Sandstone, which is a coarse-grained feldspathic sandstone. There are no recorded superficial geological deposits (bgs.ac.uk/opengeoscience) and non were observed during excavation. The soils are classified as freely draining slightly acid loamy soils (landis.org.uk/soilscapes).

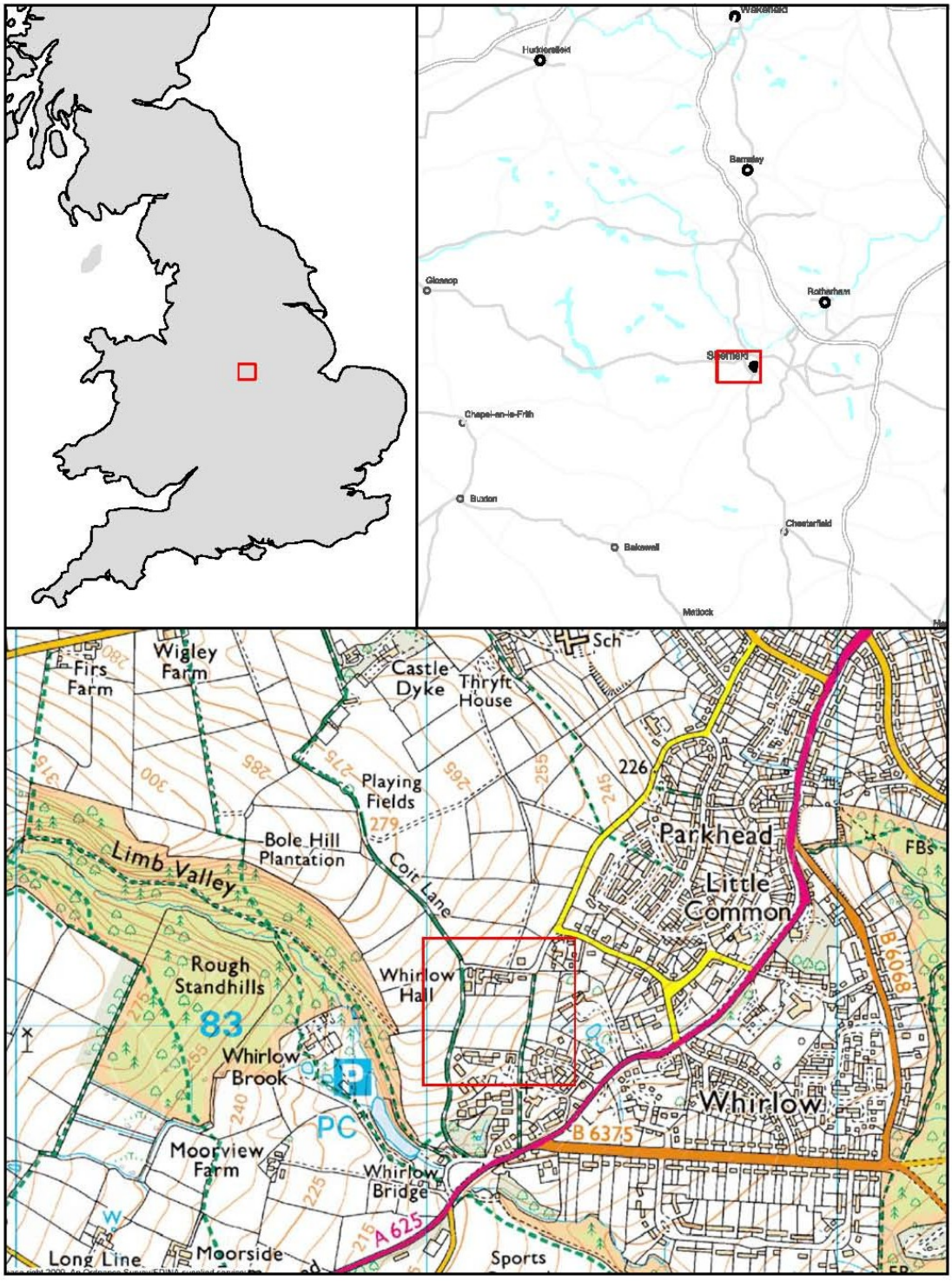

Figure 1. Location of Whirlow Hall Farm
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Figure 2. Map showing location of Hall field and excavation trenches.

2. EXCAVATION

Excavations took place in 'Hall' field, south of the historic farm building nucleus (Figures 2 and 3). The enclosure was located in the south western corner of the field with outlying features stretching towards the centre of the field. The enclosure was only partly revealed during the geophysical survey as the ditch was found to continue south of the field and under gardens and houses on land that does not belong to Whirlow Hall Farm Trust. The buried remains of the enclosure in this area are likely to have been at least partly mutilated during the construction of these houses, but it is likely that pockets of preserved remains survive, particularly in the garden areas.

Two trenches were excavated. Trench 1 was located to target the entrance on the western side of the enclosure and Trench 2 was positioned so as to investigate the double ditched feature that ran in a northerly direction from the north east corner of the enclosure.

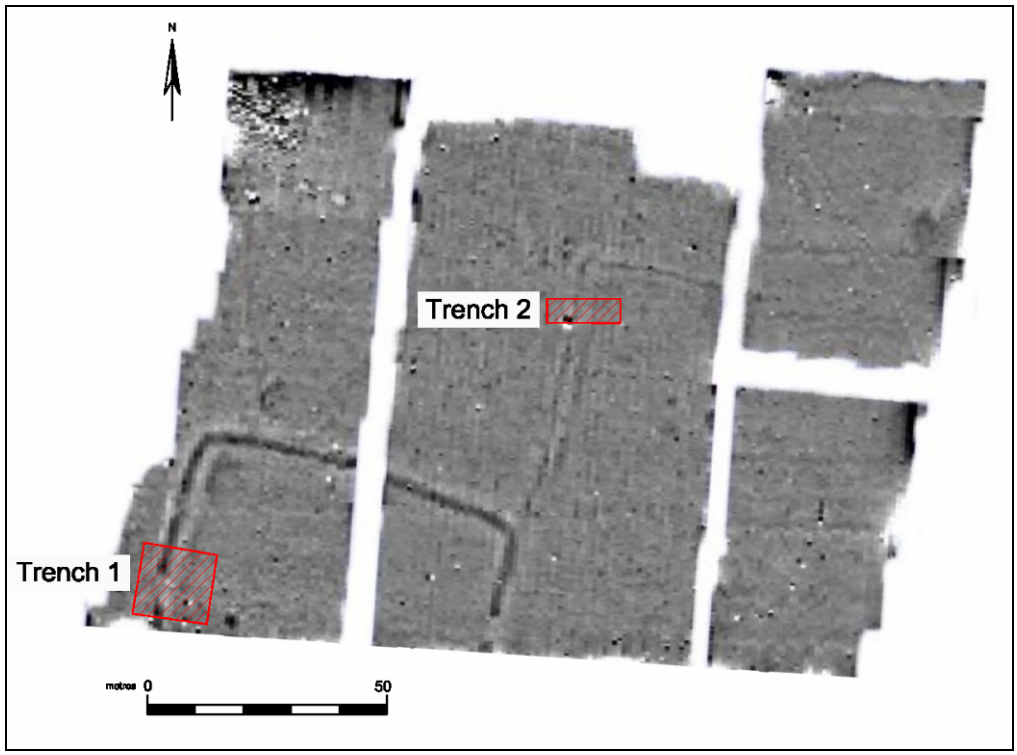


Figure 3. Plan showing the results of the geophysical survey and the location of the two trenches (The enclosure is evident in the bottom left area of the field).

2.1 TRENCH 1

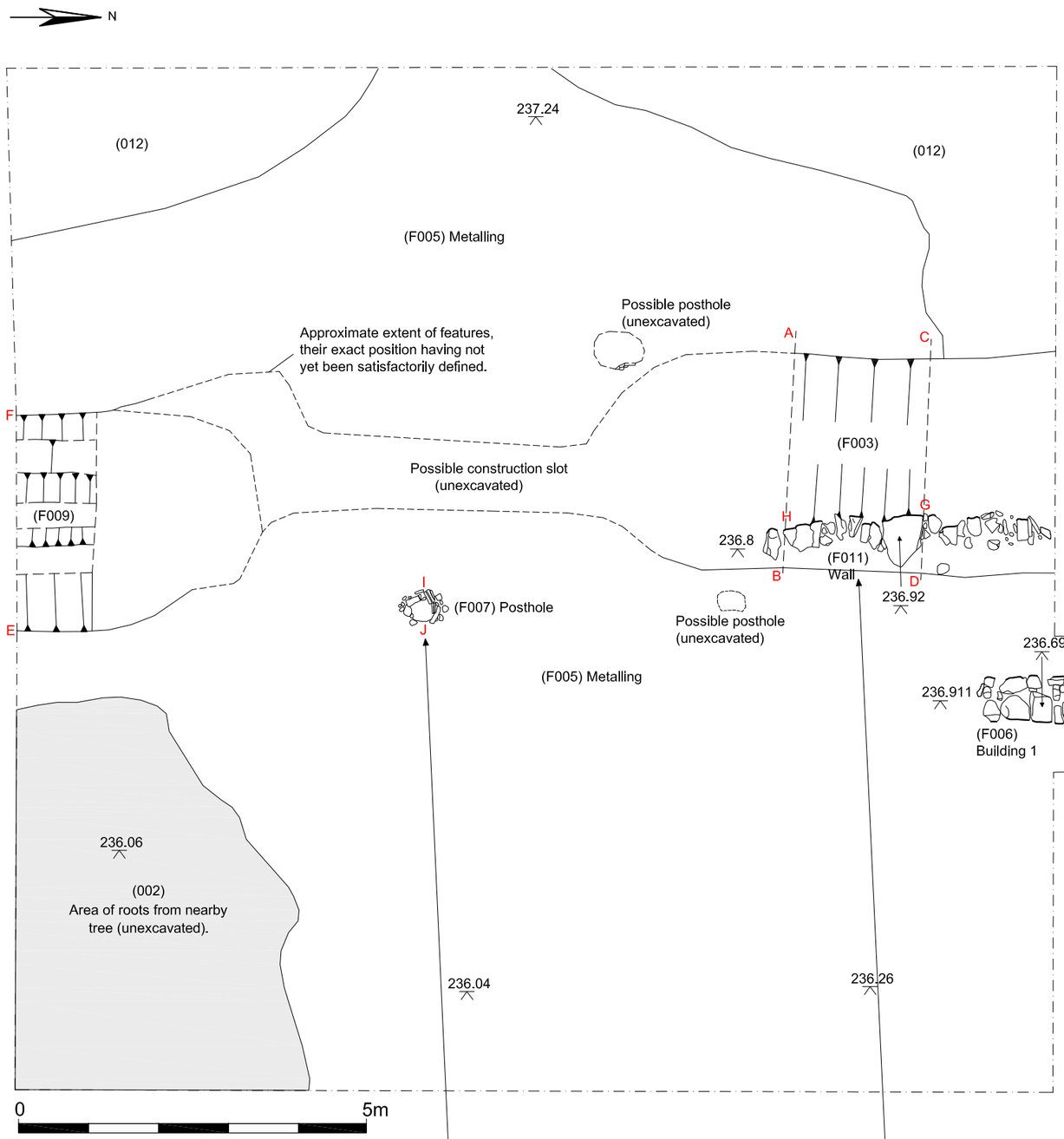
2.1.1 Trench One measured 15m by 15m and was located over what was believed to be one of the enclosures entrances. The topsoil (001) was found to exist to a depth of between 0.14m and 0.16m below the turf and comprised a very dark brown (10YR 2/2) sandy silt which contained pieces of coal, slag and occasional sandstone. Below the topsoil a compacted subsoil (002) was found to exist that was a dark brown (2.5YR 3/2) sandy silt and ranged from 0.11m to 0.16m in thickness. The layer contained fragments of metalworking debris throughout in the form of coal and slag, together with broken clay pipe, glass and post-medieval pottery. This unstratified material is interpreted

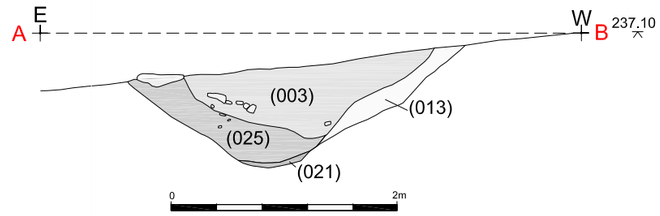
primarily as having arrived on the site as part of midden material spread on the field to improve drainage and fertility and to dispose of waste material.

Figure 4. Volunteers trowelling the subsoil layer in Trench 1, the inner wall of the ditch can be seen appearing on the left.

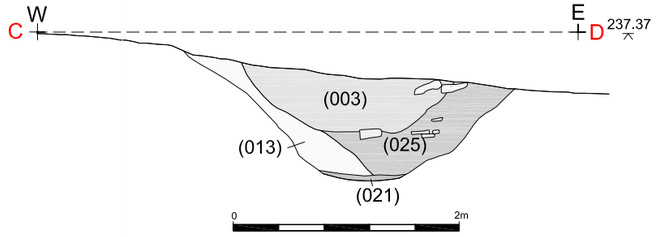
2.1.2 The first archaeological horizon was reached below the subsoil (002) and consisted of a heavily compacted metalled surface (F005), a post hole (F007), the upper fill of the enclosure ditch either side of the west entrance causeway (F003) and (F009), the top of a stone foundation wall for a substantial rectangular building, together with a probable construction slot that runs across the causeway (Figure 5). The uppermost stones of the stone wall (F011) built against the inner edge of enclosure ditch was also partially revealed as the subsoil was cleaned back. Although upstanding features such as the timber posts from the posthole and the building have been removed and truncated, the features so far revealed on the site are remarkably well-preserved. The soil appears to have only ever been shallow ploughed and this has meant that structural features survive well on the site. Furthermore, the soil depth is greater downslope than upslope and careful observation of the current ground surface suggests that the ground had been scooped into the hillside to provide a more level area for the enclosure. Consequently, the greater soil depth on the dowslope areas of the monument have meant that the remains here appear to be better protected from the ravages of the plough. This accounts for why the section of upstanding wall for the rectangular building survived in situ. The current ground surface therefore subdues the subsurface topography of the enclosure and this means that it is possible that preservation of features may be even better further downslope in the eastern half of the enclosure.

2.1.3 Two sections were cut across the enclosure ditch: one was placed over the northern ditch segment and one was placed over the southern ditch segment. The section over the northern ditch segment measured 2m wide and extended over the full width of the ditch which averaged 3.1m in this area (see Figs. 5 and 6). The ditch had a maximum depth of 1m from the top of the archaeological horizon and was cut through

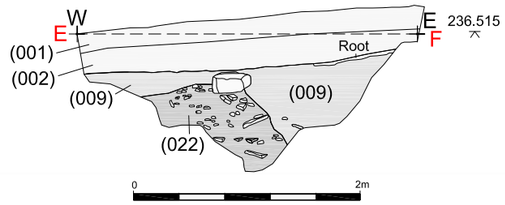




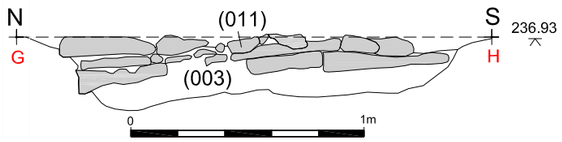
North facing section of northern ditch section.



South facing section of northern ditch section.



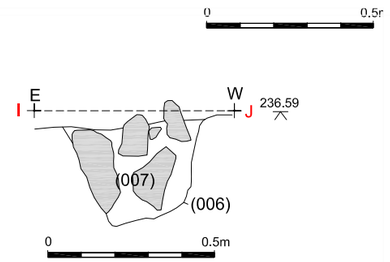
South facing section of southern ditch section.



West facing section of inner revetment wall in
North ditch (011).

Excavated posthole showing flat stone packing (scale = 0.25m).

Northern ditch section partially excavated revealing revetment wall on inner edge (scale = 2m).



South facing section of posthole (F007)

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Site Code: WHIR 11
Drawing Ref: -
Date: August 2011
Drawn: JB and JS
Scale: 1:75 at A3 (Main plan)

Figure 5

Trench 1 plan showing
Roman period features.

Key:

Notes:

the natural sandstone brash layer and into the solid bedrock at its base. This section revealed two phases of ditch use. The original ditch, which was the largest, had a wide v-shaped profile with a flat base. The primary ditch silt (021) consisted of a shallow lens of damp sandy silt being a dark yellow brown (10YR 4/6) in colour with small angular shattered sandstone inclusions. This fill is likely to date closely with the initial construction of the enclosure. A 10 litre sample of this material was taken and flotated for botanical macrofossils. Analysis of the flot revealed the presence of small fragments of hazel, birch and oak charcoal (see also Charcoal Identification section below). A single entity fragment of the shortlived specie hazel was submitted for radiocarbon dating and this produced a date of 2155±30 BP (SUERC-36826), which calibrates to 358 – 94 cal BC at 95.4% probability (see also Radiocarbon Dating section below). It is possible that this sample is from residual material that was already old when it became incorporated into the fill of the ditch. However, it is also possible that this date does relate to the initial phase of the ditch. If the latter is the case then it suggests that the original enclosure was Late Iron Age in date and was remodelled and occupied by Roman, or Romanised people, sometime in the late 1st or 2nd century AD. Because this date is Late Iron Age it means it falls on the calibration plateau which explains why it has such a large date range.

2.1.4 Over time the ditch filled in with sediment and this is represented by the secondary fill (013) (Figs. 5 and 6) which comprised a coarse textured sandy silt with natural angular sandstone inclusions and was yellow brown in colour (10YR 4/6). This fill contained three pieces of chipped flint which included a microlith, scraper and retouched blade, all Mesolithic in date (see Lithics section below). The flints, though interesting in their own right and reflecting a hunter-gatherer activity in and around this locale, are clearly residual material.

2.1.5 Partly overlying fill (013) and located on the inner side of the ditch was another secondary fill (025) into which the stone revetment wall (011) had been constructed (Figs. 5 and 6). Fill (025) consisted of a medium brown (7.5YR 3/3) sandy silt that contained coarse sandstone slabs laid horizontally as a foundation for the low stone wall (011) that was constructed above it. The fill had a maximum thickness of 0.4m. No finds were recovered from this fill. Constructed partly within and on top of this layer was the revetment wall (011). This wall survived up to a maximum of three courses (0.27m in height) and consisted of thin flat slabs of the local sandstone that had been roughly shaped and laid so as to form what would have been a low revetment wall running along the inner edge of the ditch (Figs. 5 and 7). The wall had been carefully constructed above less neatly, but horizontally laid, sandstone slabs inset within fill (025). This supported the more carefully built wall which had a vertical and carefully made face. This wall could not have served a defensive function, but is rather best conceived of as a dwarf wall which would have provided a decorative feature close to the west entrance into the enclosure and which would have also served to physically demarcate the edge of the ditch within the enclosure, and thereby stop people accidentally falling in. The scale of both the ditch and the wall indicate that the enclosure perimeter was never intended to be defensive. Instead it seems to have served as a settlement boundary, yet one sufficient to prevent unwanted access by livestock and perhaps other animals.

2.1.6 The upper ditch fill (003) comprised loosely compacted fine silt that was a rich dark reddish brown colour (7.5YR 3/4) with small angular sandstone inclusions. The fill abutted and overlay the low revetment wall (011) and also directly overlay the earlier fills (025) and (013). Within this upper fill on its eastern side were tumbled flat sandstone slabs which had come from the upper courses of the revetment wall. Their presence

suggests that the wall could have been deliberately pushed as part of the intentional levelling of the site. It remains inconclusive whether the site was intentionally levelled on abandonment but the single and homogenous final fill of the ditch with what appears to be pushed-in wall material suggests this could have been the case. Roman pottery recovered from the upper fill has been dated to the late 1st or early 2nd century AD (see Pottery section below). Two flints comprising a flake and a utilised blade were recovered from the upper ditch fill, however, as with the flints from the fill beneath (013) these are residual from earlier, probably Mesolithic, activity on the site.

Figure 6. Excavation of the section across the northern segment of the enclosure ditch showing the original cut for the first phase ditch, and beyond the section the top of the sandstone walling (011) on the inner edge (right hand side) of the ditch and its associated tumble within the ditch fill, looking east (scale = 2m).

Figure 7. Excavation of the section across the northern segment of the enclosure ditch showing the original cut for the first phase ditch, and beyond the section the top of the sandstone walling (011) on the inner edge (right hand side) of the ditch and its associated tumble within the ditch fill, looking east (scale = 2m).

2.1.7 The section over the southern area of the enclosure ditch (F009) in Trench 1 was positioned against the south baulk of the trench (Figs. 5 and 8). This section was narrower than the first section and measured only 1m in width. It was excavated across the full width of the ditch that, like the northern ditch section, measured 3m across. The ditch had a maximum depth of 1.11m from the start of the archaeological horizon. The excavation of the ditch fill was not able to be completed in the time available and so understanding of the ditch stratigraphy remains incomplete. The base of the ditch was reached and a stony fill was noted in the centre and east (inner) edge of the ditch providing evidence for a tumbled section of wall similar to that identified in the first section. The stony material consisted of slabs of local sandstone contained in the lower ditch fill (022) which comprised a brown (7.5YR 3/3) sandy silt that had a maximum thickness of 0.8m. Above this secondary fill was the upper ditch fill (009). The upper ditch fill was almost identical to the upper ditch fill in the northern section of the enclosure ditch comprising a brown (7.5YR 3/4) medium textured sandy silt. Again, as with the upper ditch fill in the northern section of ditch, this fill contained Roman pottery of late 1st to early 2nd century AD date as well as some earlier native ceramics from the late pre-Roman Iron Age or early Roman period.

Figure 8. North facing section of ditch (F009), looking south (scale: 2m).

2.1.8 The entrance causeway was able to be defined by the position of the two ditch terminals (see Fig. 5), although in both cases the terminals themselves were slightly indistinct and only excavation of them will allow their precise extents to be identified. The causeway measures approximately 4.5m wide and was reinforced with a tightly compacted stone, or 'metalled', surface that ran through the entrance and across the interior of the enclosure. Below the metalling within the entrance causeway a narrow construction slot was identified linking the terminals of each entrance causeway (Fig. 5). This slot, measuring approximately 4.5m long by 1m wide, was not able to be excavated during the time available but it remains possible that it provided a foundation trench for a timber that may have been used to help support timber uprights for a gateway arrangement. A possible unexcavated posthole was identified on the north-east corner of the entrance causeway together with a definite and well-preserved posthole (F007) located in the centre of the entrance causeway on the alignment of the back edge of the enclosure ditch (Fig. 5 and 9). The post hole was initially identified due to the surrounding packing stones having a raised, prominent position within the metalled surface indicating that the timber post would have stood whilst the metalled surface was in use around it. Upon investigation the feature was found to be a post hole of some significance and almost certainly the base for a large timber post (Fig. 9). The space for the post measured 0.2m by 0.34m with a depth of 0.4m from the start of the archaeological horizon. The packing stones that defined the edge of the feature were flat sandstone slabs that had been arranged vertically. The fill (007) consisted of a compacted fine sandy silt which was dark yellowish brown in colour (10 YR 4/4) and was found to contain fragments of coal and sandstone. The base of the post hole had been carefully made with two flat stones. Given the postholes central location in the entrance it is possible that the timber upright functioned as a central gate stop for a double gate arrangement, and/or alternatively that it supported a roofed gateway entrance. Only further excavation of the gateway area will resolve how the gateway structure was constructed and how it functioned.

Figure 9. Pre- and post excavation views of post hole (007), Looking north (scale = 0.25m).

2.1.9 An extensive layer of small compacted sandstone slabs and chips (F005) was found spread across the interior of the enclosure and extending through the entrance causeway and beyond the enclosure. It respected the enclosure ditches and the posthole (F007) as well as the stone wall of Building 1 (F006) and its interior floor surface (F023) indicating that, although structurally later, it was in contemporary use with these features. Although this surface was difficult to trowel clean because its surface was not perfectly even, it became clear during excavation of sections of it that there were multiple layers of metalling that had accumulated over time. Some of these may have just been localised repairs of pot holes while others may represent resurfacing. It was not possible to identify or record precisely how often or how many resurfacings have taken place but it can be confidently concluded that the metalling contains more than one phase of construction. The rock used to make the metalling is the local sandstone, possibly made from the upcast from the enclosure ditch, and was typically angular and in small laminar slabs which could be laid flat or pitched at an angle and heavily rammed into place. Occasional sherds of pottery were found within the metalling including sherds of late pre-Roman Iron Age – early Roman period native pot, Grey Ware and a sherd of Samian Ware, the latter being 2nd Century cal AD in date. A small rim of medieval or post-medieval pottery was also recovered from the metalled surface and this is thought to derive from later activity, being introduced to the site by ploughing and middening of the soil. Such pottery was found in abundance throughout the overlying soil that immediately overlies the metalling layer.

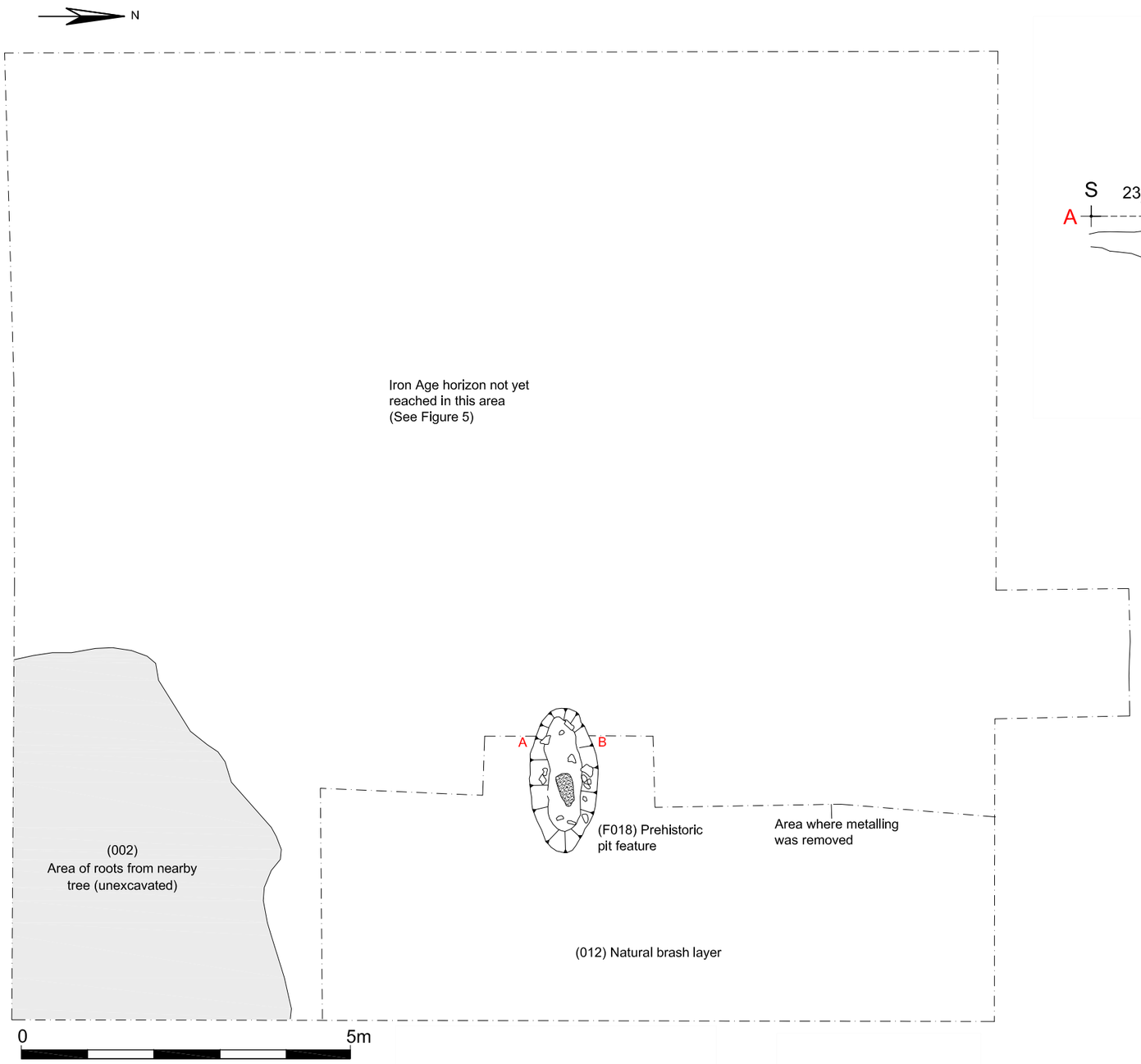
Figure 10. View of the metalled surface (F005) emerging looking across the entrance causeway with the northern ditch section during excavation on the left (scale: 2m).

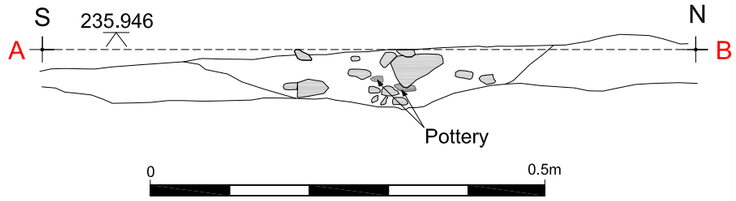
2.1.10 An important discovery on the site was the survival of a section of upstanding stone wall foundation (F006) which was exposed for a length of 3m before it continued into the northern baulk of the trench (Fig. 5). The wall survived up to two courses in height and was constructed without mortar. The stones had been partially dressed and varied in size from 0.3m x 0.35m x 0.23m to 0.07m x 0.05m x 0.02m. The wall measured a maximum of 0.6m in width and 0.29m in height. This wall is straight and made from roughly dressed coarse sandstone blocks of a type not native to the site (Fig. 11). The stone had evidently been brought to the site from elsewhere, presumably with the intention of it being used specifically as building stone. The wall had surviving stretches of dressed wall faced on both its east and west sides and evidently formed a foundation wall for a substantial building (hereafter referred to as Building 1) that appears to have been of rectangular shape. Although this foundation wall is made of stone it does not necessarily mean that the walls and other elements of the superstructure were of stone. It is common for rural Roman buildings to have stone foundation walls with timber framed buildings constructed on to them. Although only a small part of this wall and building have been partially excavated no roof tile has yet been recovered. Therefore, the form of the roof so far remains speculative but further excavation should hopefully elucidate an answer. The interior of the building lay to the east as evidenced by the surviving internal floor (023) on this side and the location of the wall close to, and parallel to, the enclosure ditch (see Fig. 5). Furthermore, the metalled layer could be observed on the west side of the wall occupying the space between the building's wall and the low dwarf wall that ran across the inner edge of the enclosure ditch in this area (see Fig. 5). The internal floor area (023), of which only a very small area has so far been exposed (see Figs. 5 and 12), comprised sandstone flags set into a compacted earth, or 'beaten earth', floor. The flags were irregular in shape and placed haphazardly. As only a small fragment of this floor area has so far been exposed it is not yet possible to ascertain with certainty how the rest of this floor is composed. The floor itself is well preserved and the discovery of a small sherd of a gritty oxidised ware dating to the 2nd century cal AD or later shows that it has

the potential to contain occupation debris which could shed light on both the date, function and form of the building.

Figure 11. View of wall (006) and associated floor surface to its left (023) belonging to Building 1, looking south (scale: 2m).

2.1.11 A 3.5m wide strip of the metalling layer was removed across the eastern edge of the excavation trench, within the confines of the enclosure, to identify whether any archaeological remains survived below this feature (Fig. 12). An elongated pit measuring 2.25m long by 1.1m wide and 0.2m deep was identified in which in situ heating had taken place (Figs. 12-14). It was largely filled with small sandstone slabs set within a brown (5YR 4/6) sandy silt. Many of the stones in the centre of the pit were fire-reddened and the sides and base of some of the pit also showed evidence of having been burnt. This indicates that either in situ burning took place or that very hot stones had been placed in the pit. The pit fill also contained a substantial assemblage of Iron Age pottery (see Pottery section below). With only a few assemblages of 1st millennium cal BC pottery known from the Sheffield and Peak District areas this forms an important addition to what is now a small but growing corpus; other recent assemblages having come from Fin Cop and Gardom's Edge. Small fragments of charcoal were recovered from the pit fill which included small fragments of hazel, oak and *prunus* (cherry tree family) charcoal (see also Charcoal Identification section below). A single entity fragment of the shortlived specie hazel was submitted for radiocarbon dating and this produced a date of 1890± 30 BP (SUERC-36830), which calibrates to AD 55 - 219 at 95.4% confidence, but probably





East facing section of pit (F018)

East facing view of pit (F018) showing it sealed by the metalling layer (F005) above (scale = 0.25m).

Prehistoric pit under excavation.

Excavated Prehistoric pit feature (scale = 2m).

Prehistoric pottery coming out of the pit fill (018) (scale = 0.25m).

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Site Code: WHIR 11
Drawing Ref: -
Date: August 2011
Drawn: JB and JS
Scale: 1:75 at A3 (Main plan)

Figure 12

Trench 1 plan showing Iron Age period features.

Key:

Notes:

AD 67 – 136 at 68.2% confidence (see also Radiocarbon Dating section below). This suggests that native British occupation of the site could have occurred immediately before or after the Roman invasion of the north which took place around AD 68 under the governorship of Cerealis. This date also provides a date after which the site was remodelled along Roman lines. This terminus post quem will be useful in developing a more detailed dating sequence for the site.

Figure 13. View of the stone-filled pit (F018) emerging below the metalling layer (012), looking west (scale = 0.25m).

Figure 14. Post-excavation view of pit (F018) looking west (scale = 0.25m).

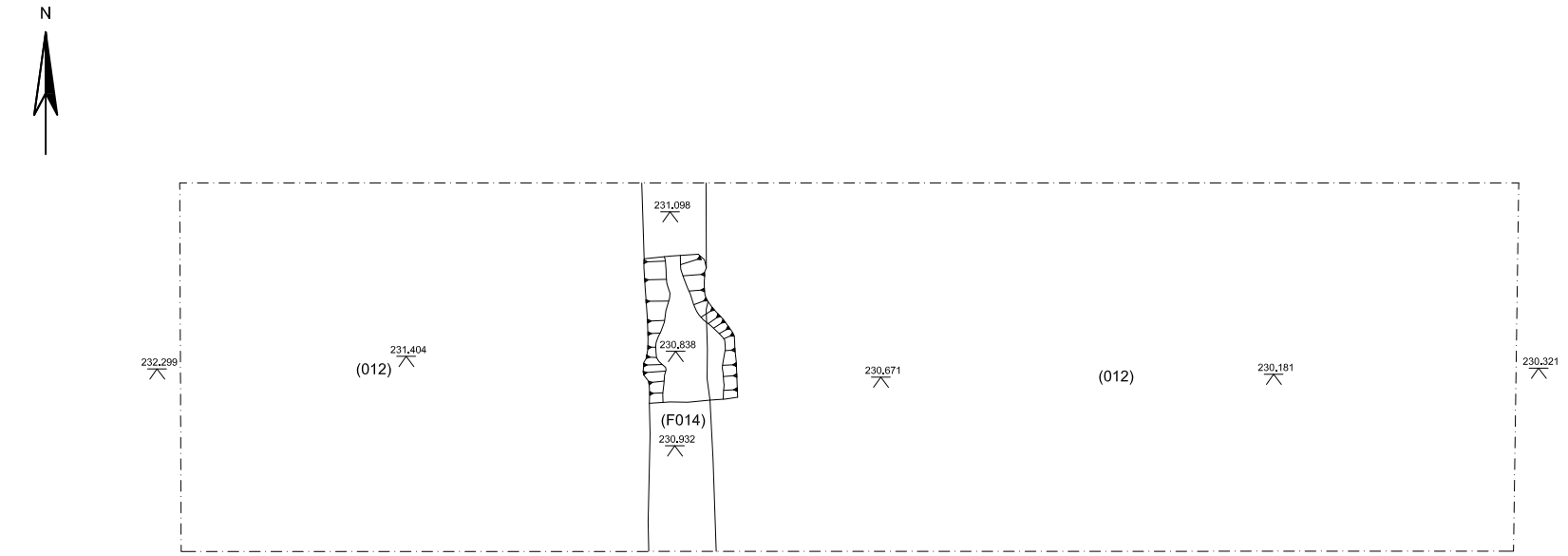
2.2 TRENCH 2

2.2.1 Trench 2 measured 10m x 5m and was located approximately 50m north of the north east corner of the enclosure (Fig. 15). The trench was positioned over two parallel linear features identified by the geophysical survey, and is thought to be associated with the enclosure and its eastern entrance, towards which the feature runs.

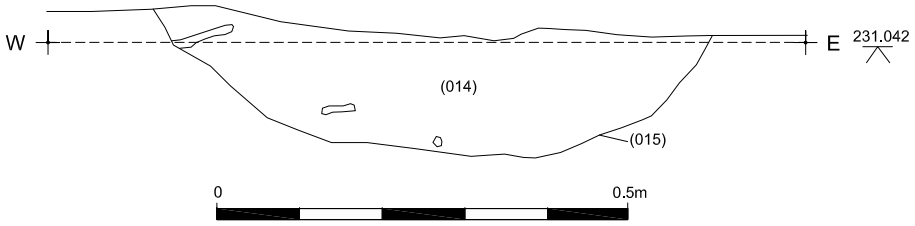
2.2.2 The topsoil (001) was found to exist to a depth between 0.3m and 0.34m below the turf and comprised of a very dark brown (10YR 2/2) sandy silt which contained pieces of coal, slag and occasional sandstone. Below the topsoil a compacted subsoil (002) was found to exist that was a dark brown (2.5YR 3/2) sandy silt and ranged from 0.2m to 0.3m in thickness. The layer contained metalworking debris throughout in the form of coal and slag, together with broken clay pipe, glass and post-medieval pottery.

Figure 16. Pre-excavation shot of Trench 2 showing the shallow linear ditch (F014) running across the centre of the trench immediately beyond the ranging poles, looking east (scale = 2m). Note the vague darker stain, parallel with F014, about 4m beyond which is all that survived of the eastern linear ditch.

2.2.3 The shallow linear ditch (F014) was located 6.4m from the western end of the trench and ran across the width of the trench on a north to south alignment (Figs. 15 and 16). The second, eastern ditch did not survive as a defined feature due to having been almost completely truncated. The only indication of this feature was a vague linear band of slightly darker soil that could be seen running parallel to the western ditch approximately 4m away (see Fig. 16). Linear ditch F014 had a maximum width of 0.7m and was 0.2m - 0.24m in depth with a regular concave cut. It contained a single uniform fill of silty sand, dark brown in colour (10YR 3/3) and contained angular sandstone fragments and flecks of charcoal. This linear ditch, and its parallel, albeit heavily truncated, counterpart to the east, are interpreted as drainage ditches flanking a trackway. Although the trackway appears to have a right-angled corner it, based on the geophysical



Plan of Trench Two
1:100



South facing section of ditch (014)

Archaeological Research Services Ltd
Angel House
Portland Square
Bakewell
DE45 1HB

Site Code: WHIR 11
Drawing Ref: -
Date: August 2011
Drawn: JS
Scale: At A4

Figure 15

Trench 2 plan

Key:

Notes:

results, the line of the trackway can be seen to follow the higher ground in this area, presumably to avoid the wetter ground to the south and east that was occupied by the stream course that has now been routed underground. The western drainage ditch of the trackway (F014) follows precisely the same alignment and line of the eastern side of the Roman enclosure where its second entrance is located. Only two pieces of identifiable charcoal were retrieved from the ditch fill (014), these being fragments of oak and hazel respectively. Only the hazel is suitable for future radiocarbon dating, being a short-lived specie.

Figure 17. South facing section of linear ditch F014, looking north (scale = 2m). The material removed from the right hand side is where the ditch was overcut when it was trying to be established whether there was an earlier cut to the ditch, which in the event showed there was not.

3. RADIOCARBON DATES

Gordon Cook and Clive Waddington

Introduction

A total of two samples were submitted for AMS dating to the East Kilbride radiocarbon laboratory. Each sample consisted of a small fragment of single entity charred hazel wood, a shortlived specie suitable for dating. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal4.

Context	Material	Lab No	$\delta^{13}C$ (‰)	Radiocarbon Age (BP)	Calibrated date range (95% confidence)
Primary ditch silt	Single entity hazel	SUERC-36826	-26.8	2155 ±30	358-94 cal BC
Pre-metalling pit	Single entity hazel	SUERC-36830	-27.2	1890 ±30	55-219 cal AD

Table 1 Radiocarbon dating results.

The date from the primary ditch silt has the potential to be residual material from previous activity on the site that has later become incorporated into the ditch fill. Without dating of further samples from this deposit this remains to be determined. It could, however, be directly associated with the initial infilling of the ditch and if this were the case then it provides a useful indication of the date at which the first phase ditch was excavated. If the date does genuinely relate to the time when the ditch was first cut then it suggests Iron Age activity on the site in the centuries prior to the Roman invasion.

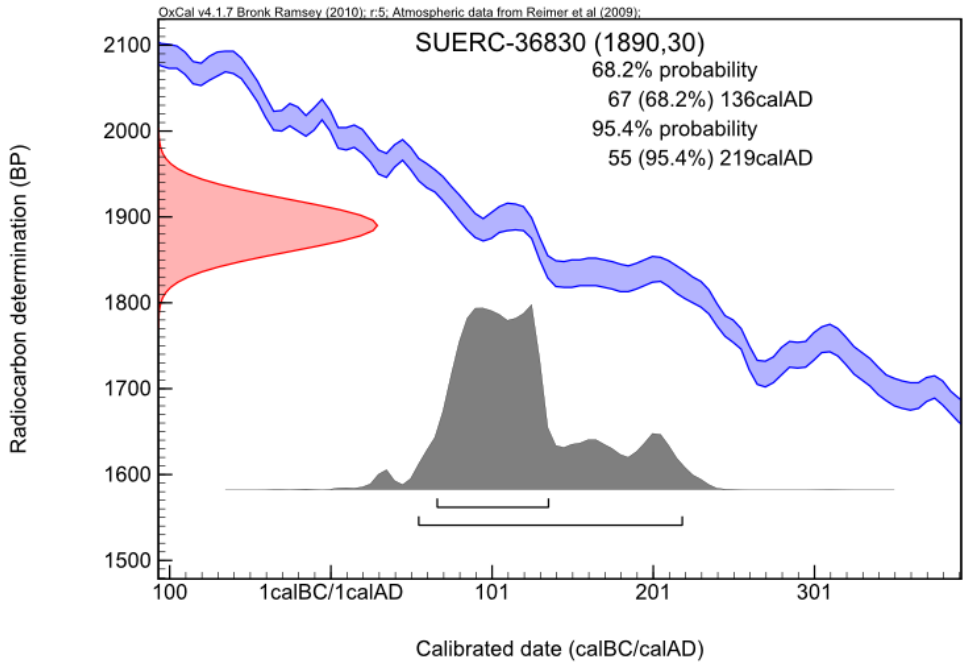


Figure 18. Graph showing calibration of the date from the primary ditch silt at 95.4% and 68.2% probability.

The date from the pit sealed below the metalling layer is from in situ burning and the sample can be considered to be secure. Given that the activity represented by the burning took place before the metalled layer was laid down over it the date from this sample provides a terminus post quem for the construction of the metalling and other Roman features on the site. Observing the calibration graph (Fig. 19) it is evident that this date probably falls in the period AD 67 – 136 which accords with the late 1st century and 2nd century dates for Roman activity based on the ceramic analysis.

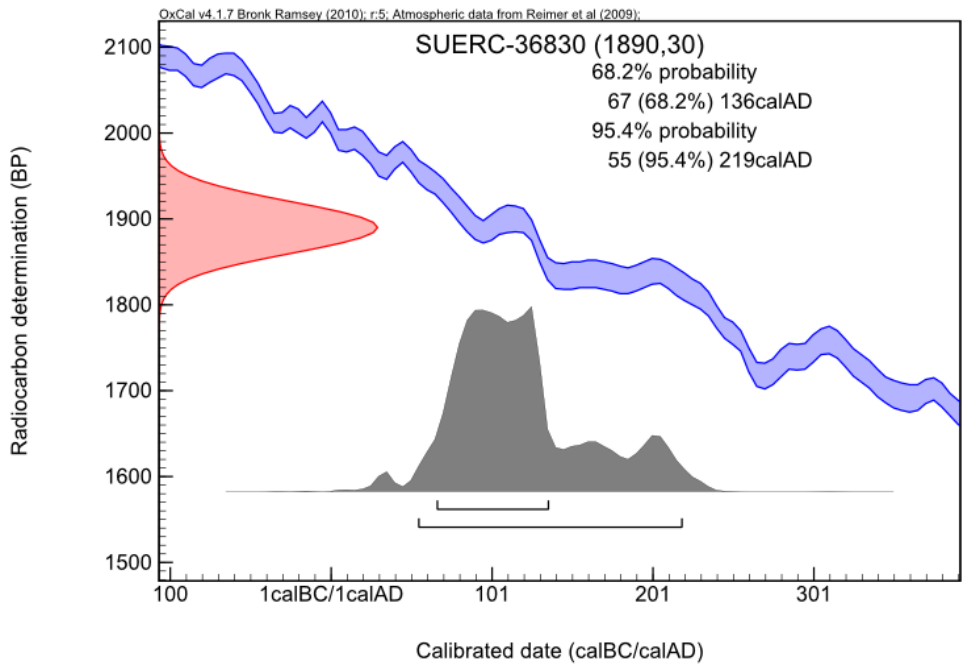


Figure 19. Graph showing calibration of the date from the primary ditch silt at 95.4% and 68.2% probability.

4. FINDS

4.1 LITHICS

Clive Waddington

Introduction
A total of 12 lithics were retrieved from Trench 1, of which six were retrieved from the unstratified topsoil (001) and six from within stratified deposits. The pieces from stratified deposits are considered to be residual from earlier activity on the site and therefore represent material that has become incorporated into the later prehistoric and Roman deposits on the site. Table 2 below shows the breakdown of lithic types by context. All finds were located according to the context in which they were found and each find was bagged and given a unique find number. A full catalogue with details of each individual lithic was produced. Measurements are given for complete pieces only in accordance with lithic recording conventions (Saville 1980). Although the assemblage of lithic material is small, those that can be ascribed to a period are all typical of the Mesolithic.

Chronology
Most of the assemblage sits comfortably in the later Mesolithic lithic tradition (c.8400-4000 cal BC), as evidenced by the concern for blade production, many with triangular sections and being small and narrow, and the occurrence of a microlith, a utilised microblade, which could also be classified as a form of microlith, and a typical small end scraper made on a blade. Clearly this material dates to a far earlier phase of activity on the site than that belonging to the later prehistoric and Roman periods.

Distribution
The inclusion of flint artefacts in a range of deposits, including the unstratified topsoil, reveals little other than that the lithic material has become incorporated into later deposits when the ground was disturbed to construct the later prehistoric and Roman features on the site.

Raw Material
All the lithic raw material recovered during the excavation is flint, of which one large flake is from a nodular source (chalk bearing strata) and one is probably from a glacial, or secondary, source. The rest of the material has no, or insufficient, cortex remaining to suggest the provenance of the raw material. The nearest nodular source is the Lincolnshire Wolds which lie 55km distant from the site at their nearest point. The nearest sources of secondary flint probably lies in the tills and sand and gravel deposits of the lower Don Valley and the Trent Valley. Any flint found on the site has, therefore, to have been imported and this indicates that material was being brought to the site over a considerable distance during the Mesolithic. It should be noted that the nodular flake (small find 26) is not attributable to any period, but given its larger size it might suggest that this piece is of later date than the Mesolithic material, and therefore there may have been a different pattern of flint acquisition obtaining in later periods.

There are six light grey, three medium grey, two dark grey and one brown coloured flints. The range of colours is likely to reflect a variety of different sources, although there can

be much variation in flint colour, even within a single nodule. Much of the flint was of high purity with very few pieces being speckled.

Flaking and Manufacture
The assemblage displays evidence for the use of both hard and soft hammer working, with most of the edge-trimming and retouch being unifacial. The manufacturing tradition for Mesolithic material relies on a blade-based technology, that includes slender blades where possible, but also thicker stubby blades when the raw material dictates. The blades typically have a triangular section and the production and use of microblades is featured within the assemblage.

Types
A range of tool types is present in the lithic assemblage and these are summarised in Table 2 below.

The presence of processing tools, such as the various retouched and utilised pieces and the scraper, indicate a wide range of processing activities, which are usually taken as an indicator of settlement sites (Schofield 1991, 1994). The presence of the scraper might imply that hide working was an important activity. The presence of a microlith, and a second possible microlith (utilised blade 30), indicates that the use and maintenance of hunting weapons took place on the site, suggesting that hunting, and perhaps fishing, might have been an important activity in the areas around the site.

Type	Unstratified 001	Upper ditch fill 003	Lower ditch fill 013	Metalling 005	Total
Flakes	4	1			5
Blades	1				1
Utilised Blades	1	1			2
Retouched Blade			1		1
Retouched Flake				1	1
Scraper			1		1
Microlith			1		1
Total	6	2	3	1	

Table 2. Summary of lithic types by context.

Discussion
The area around Whirlow Hall Farm has evidently formed a focus for Mesolithic activity, as evidenced by the Mesolithic material recovered by fieldwalking in two nearby fields. The main lithic scatter identified by the fieldwalking was situated to the north-west of the excavation trench on high ground close to the eastern top of the Limb Valley. The valley provides a natural routeway for both animals and humans and gives access from the head of the Sheaf valley on to the high moorlands above. The excavation trench is in a similar setting, although in this case it is set back from the edge of the valley side by approximately 140m. By being located over the lip of the eastern valley side groups would have been sheltered from the prevailing westerly winds while also being strategically located to monitor and control human and animal access up and down the valley. This would have afforded many opportunities to take a variety of animals, such as red and roe deer, wild pig and so forth, as well as to trap fish in the Limb Brook and take nesting birds form the rich woodland that would have mantled much of this area. The

Limb Brook would have provided access to nearby freshwater, whilst the area chosen for the settlement-type activities evidenced by the flint assemblages would have been relatively free-draining. The abundance of foodstuffs available in this general location must have been an important draw. Animals will have been attracted to water in the Limb Brook, whilst fish, fowl and birdlife could also have been easily taken. Furthermore, the plant foods and vegetation within and above the Limb Valley would provide important sources of food, building materials and possibly even clothing.

Figure 20. Flint tools recovered from Trench 1. Far left = microlith, left = utilised bladelet, right = utilised blade, far right = end scraper.

Figure 21. Retouched flint blade tool, possibly also used as an end scarper.

4.2 POTTERY

4.2.1 Prehistoric Pottery

Pauline Beswick

Introduction
This is a small but significant assemblage of around 122 sherds, total weight 807g. The bulk, about 100 sherds (736g), was recovered from the truncated fill of a pit [018] and includes two vessels; one a fine ware jar with an everted rim (vessel 1), and the other a heavy duty, bucket-shaped container (vessel 2). Vessel 3, represented by two non-joining rim sherds, comparable in profile with vessel 1, was found in the upper fill of the south ditch [009] together with a number of small sherds (29g). In addition single featureless body sherds, relatively unabraded and of similar fabric, came from the upper fill of the north ditch [003] (13g) and the metalled surface [005] (4g), respectively. Rare analogies for the form of vessels 1 and 3 suggest an Iron Age date with close comparisons in the East Midlands (Elsdon and Knight 2003). Baked and fired clay fragments also found in the pit [018] are described separately at the end of the pottery report. A radiocarbon date of 1890 ± 30 BP (GU 25354) has been obtained from a charred hazel fragment from *in situ* burning within the pit (see above).

Method Statement
The pottery was examined macroscopically using a hand lens (x10 and x20) and weighed to the nearest gram. The fabric was analysed using the system recommended by the Prehistoric Ceramics Research Group (1997) and details are in the archive. No thin-section petrography or residue analysis was carried out.

Catalogue (Fig. 00)

No	Context	Description
V1	018	Vessel 1 from the truncated pit comprises 8 sherds (69g) probably from the same vessel and representing parts of the rim, neck and shoulder of a round shouldered jar with a widely everted, bevelled and channelled rim and a strongly marked junction of neck and body. Too little survives to determine the rim diameter accurately but it appears to have been over 200mm and the body is relatively thin, up to 6mm. The pot was coil built and surfaces are smooth with fine parallel horizontal lines visible on the outer surface of a less abraded piece suggesting careful finishing, possibly by brushing on a turntable. The soft reddish brown exterior and core and the brown or black interior are indicative of bonfire firing. Apart from one large, relatively unabraded rim sherd, the rest of the sherds are abraded and comprise five small rim pieces which all join on old breaks and one neck and one shoulder sherd which also join along an old break. Contrasts in their condition may indicate separate vessels or that following breakage the sherds underwent different depositional histories. Truncation of the pit, however, forestalls recovery of that story and the sherds' similarity in fabric, colour and body thickness is considered to justify their interpretation as one vessel. A number of featureless and thin body sherds from pit [018] could belong with this vessel, or vessel 3 (see below) or with other unidentified vessels, but clearly much of vessel 1 did not survive. A number of vessels with close

analogies for the rim and neck form lie within assemblages from the Trent, Nene and Welland basins. This relationship and dating is explored in more detail below.

V2 018 Vessel 2 is represented only by base (6 – 83g) and body sherds (16 – 397g) which are related by their thickness (10-15mm), colour (orange brown sides to black at base) and plain, straight-sided form. None of the sherds join, no rim sherd is present and the blackened base, both inside and out, suggests contact with heat and burnt contents. Overall the sherds' character suggests a bucket-shaped vessel of a type current in the Late Bronze Age but surviving in coarser wares into the Iron Age in the Midlands and North (e.g. Elsdon 1989, 21).

V3 009 Two rim sherds (25g) from the upper fill of the south ditch [009] are from a widely everted, bevelled and channelled rim, similar to vessel 1 but larger (7-9mm body thickness) and less complete. Both sherds are abraded.
In addition a number of mainly small and abraded body sherds (18 – 29g) also from [009] could be from vessels 1 and 3, and other unidentified vessels.

Fabric

All sherds are in the same distinctive fabric; an iron rich, fine to medium sandy clay with plate-like voids (up to 2mm) and soft, whitish fragments (in a variety of shapes and sizes) soluble in acid and probably representing decayed shell fragments - i.e. a vesicular, shell-tempered, sandy fabric. Currently no exact parallels are known to the author in prehistoric pottery from the Sheffield area, or the Peak District but it is strikingly similar to the descriptions of prehistoric fabrics from parts of the East Midlands. For example, the fabric used at Fiskerton, Lincolnshire, for vessels comparable in form with vessels 1 and 3, was a similar shelly fabric the raw materials for which were all locally available and included fossil shell from the nearby Jurassic limestone (Elsdon and Knight 2003, 87). That was not the case, however, in South Yorkshire so it is unlikely that the pots found at Whirlow were made locally and are more likely to have been brought in from further afield, possibly from the Trent Valley to the east and south, or beyond.

Form and date

From the above descriptions it is clear that none of the vessels was complete but that the surviving parts of vessels 1 and 3 represent an unusual form and analogies lie in the East Midlands, particularly at Fiskerton. Here two exceptionally large (0.50m and 0.60m diameter and 0.60m and 0.75m tall) and complete vessels (Elsdon and Knight 2003, 89), with high and widely everted rims and internally channelled necks, were excavated from below the timbers of a prehistoric trackway. They appear to have been placed deliberately sometime later than 375/4 BC, based on a dendrochronology date; 'a rare fixed point in the first millennium BC ceramic sequence of the East Midlands' (*ibid.,* 88). Dendrochronology has shown the trackway was constructed and rebuilt between 456 and 321 BC but was in use for considerably longer with finds of Roman material as well as Iron Age (Field and Parker Pearson 2003, 36). Elsdon and Knight (2003, 91) speculate that these pottery vessels represent a transition from Late Bronze Age/Early Iron Age to Earlier La Tene ceramic traditions with a date range in the fifth and fourth centuries BC, compatible with the *terminus post quem* dendro date. However, much of the Iron Age La Tene metal work found at Fiskerton was deposited, perhaps as votive offerings, probably during the third century BC (*ibid.,* 135-6) and it is not impossible that the pottery was also deposited around this time.

The estimated diameter of vessel 1 (over 200mm) from Whirlow is less than half the size of the smaller Fiskerton vessel which would perhaps suggest a height of around 300mm for vessel 1. Vessel 3, given its greater body thickness, was probably larger. The height

and channelling on the necks of these vessels may have functioned as seating for lids, probably in an organic material which has not survived. Knight (2002, 127) suggests the thin walls and distinctly tapered and internally bevelled rims continue a fashion for 'delicately moulded rims', a feature in the preceding 'plainware' tradition (e.g. *cf.* a large carinated jar from Mam Tor; Coombs and Thompson 1979, fig. 19.4).

Sherds of other vessels found at Fiskerton include bevelled rim forms similar to Whirlow vessels 1 and 3 (Elsdon and Knight 2003*,* fig. 5.2, 3 and 4). None of the Fiskerton examples, however, has the angled junction between the neck and high shouldered body evident on vessel 1.

Rim and neck profiles of this type are uncommon (Elsdon and Knight 2003, 88) but some of the closest comparisons come from pottery sequences found in trackway ditches at Gretton, Northamptonshire (Jackson and Knight 1985: ditches A and B: fig. 6. 22, 23; fig. 8. 51-4, 65; fig. 9. 98 and 99). Numbers 65 and 98 combine a high everted neck with an angled body junction comparable with the profile suggested for Whirlow vessel 1. Radiocarbon dates from Gretton (*ibid.,* 81: eg - *c.* 800 to 60 cal BC at 2 sigma), are too wide ranging to be helpful. However, dates for a pit group at Padholme Road, Fengate, with typologically comparable rim forms to Fiskerton, calibrated at 2 sigma to 410-200 cal BC, as quoted by Elsdon and Knight (2003, 91), would support the continuation of these ceramics into the third century cal BC.

No convincing evidence, though, has been located for continuity as late as the first century AD. On balance, comparative evidence suggests that the Whirlow radiocarbon dating (see above) could relate to the Roman intervention on the site rather than to the Iron Age pottery and that it is possible there was a gap in time between the two events. The incomplete and generally abraded character of the sherds could suggest secondary deposition which could have taken place during the Roman period.

Discussion

This Iron Age ceramic evidence from Whirlow is restricted to a minimum of three vessels comprising a small group of sherds from a truncated pit where in situ burning had taken place, together with a few sherds in the same fabric from a nearby ditch and metalled surface. Therefore, care needs to be exercised not to exaggerate its significance.

Nonetheless, for Sheffield and the Peak District this ceramic evidence is unique - in that the pottery is comparable with rare forms recognised in the East Midlands and is made from materials not locally available but paralleled also in the East Midlands. Moreover, dendrochronology at Fiskerton (Lincolnshire) has produced a more reliable indication of age than radiocarbon dates which are notoriously unreliable for this period and make pottery dating difficult (e.g. Knight 2002, 130).

Baked and fired clay

The truncated pit [018] also contained 12 lumps (159g) of clay. All the pieces are a medium to coarse sandy clay and show marks of finger shaping. Three – a rough ball, a small irregular lump and a sausage-shaped piece – are in a soft, orange/red, probably baked clay. Two fired pieces are oxidised on the outside but the inner core of a broken piece is black.

The rest comprises four fragments and three larger broken pieces of gritty, hard fired clay. Their outer surfaces are dark brown and the inner, present on the 3 larger pieces, is dark grey or black and relatively smooth - flat or angle-shaped. A small vitrified deposit on the inner surface of the largest piece, would justify further investigation to determine if this is a clue as to their function.

No shell is present in any of the clay and in character it resembles local clays variously 'contaminated' with sand from weathered gritstones and sandstones. It was not used to make the pottery found on site but could have been used for a number of other activities such as daub for walls or for constructing ovens or furnaces or, with the last group, possibly as moulds for casting metal. But scientific analysis must be employed to test such a hypothesis before it can be given any credence.

It is worth noting that the period beginning in the fifth/fourth centuries cal BC witnessed the production of the finest cast bronze metalwork in prehistory with the development of La Tene metalwork and the Celtic art style.

Conclusions

More evidence is needed to fully determine the nature of Iron Age activity at Whirlow but these discoveries suggest it could well be of regional significance and demonstrate previously undetected links between the eastern Pennine foothills of the Peak District and the Trent Valley and East Midlands.

Figure 22. Sherds from Iron Age vessels 1 -3.

Figure 23. Inside of rim sherd from vessel 1.

4.2.2 Romano-British Pottery

Ruth Leary

Sixty two fragments of pottery were submitted as part of this study. Of these 39 were Roman, 13 were possibly pre-Roman or early Roman, one was not pottery and nine were medieval or later.

Pre-Roman
The possible pre-Roman sherds were vesicular brown-orange wares which were flat and platey suggesting that these had contained shell originally (see also section above on Iron Age pottery). One diagnostic sherd came from a bowl or jar with a short everted rim and a shoulder cordon. This form would fit the range of cordoned bowls and jars made in the late pre-Roman/Iron Age or very early Roman period.

Roman
The Roman material comprised 15 sherds of Derbyshire ware, one fine, very abraded undiagnostic grey ware bodysherd, 19 medium sized quartz-tempered grey ware sherds, one gritty oxidised sherd that was undiagnostic, one very abraded slightly oxidised sherd, possibly Samian ware and one bodysherd from a Central Gaulish Samian open vessel of cAD120-200. The Derbyshire ware sherds were from jars. The only form identified was a cupped-rim jar, a type of vessel made in kilns around Belper from c.AD140 until the mid-fourth century. The gritty oxidised sherd probably belonged to the so-called pre-Derbyshire ware group datable to the early second to third century. The Grey ware types included sherds from two jars with short everted rims similar to the common Flavian-Trajanic jar form (Gillam 1970 no. 101-5) and a bowl with a heavy rounded bead rim more like Black Burnished Ware 2 (BB2) vessels of the late second or earlier third century (Gillam 1970 no. 225). The Grey ware sherd with a lug is most likely to belong to a lugged jar from the third century (Buckland *et al.* 1980 type F). One Black Burnished Ware 1 (BB1) sherd came from a jar with splayed rim of third or fourth century date (Gillam 1976 no 10).

Fabric	Count	Weight	Rim %
BB1	1	5	5
CT	13	58	3
DBY	15	276.6	7
fine grey ware	1	4.9	0
grey ware	19	277.8	65
Gritty oxidised ware	1	2	0
med/pm/mod	9	69.2	0
samian CG	1	3.4	0
samian?	1	2.1	0
Total	61	699	80

Table 3 Fabric quantification.

The vessel types were overwhelmingly jars suggesting this is a rural settlement and the presence of only one certain sherd of Samian, dating to the period when Samian was most prolific in the Hadrianic-Antonine period, would be consistent with this status.

Vessel type	Rim%
bowl	25
jar	52
jar/bowl	3
Total	80

Table 4 Quantification of vessels by rim percentage.

The pottery from the upper fill of the north ditch (context 003 find 39) suggested a Roman date with activity in the late 1st or early 2nd century, indicated by the everted rim jar type. In the upper fill of the south ditch (context 009 finds 34 and 48) a sherd from another everted rim jar (context 009 find 48) of a similar date to that from the north ditch was found along with a shell-tempered cordoned jar of a late pre-Roman or Conquest period date. Other sherds from this fill dated to the second and third century. The latest sherd is from a BB1 jar with a splayed everted rim (context 009 find 34) and is of a type dating to the later third or early fourth century (Gillam 1976 no. 10); this particular example is probably of a later third century date. More of the pre-Roman/early Roman shell-tempered ware came from the metalling surface adjacent to the south ditch (context 005, find 37). A sherd within the floor surface (023 find 46) next to the internal wall structure has a long possible date range from the early second century until the third century. This type was used at Derby to make rebated-rim jars which generally lacked the deep cupping of the Derbyshire ware cupped-rim jars but compared closely with the rebated-rim jars made in the fine, reduced and oxidised wares at the Racecourse kilns (Brassington 1971, 59-60). The ware was probably being made in kilns 1, 2 and 5, where production seems to date from the Trajanic period to as late as the mid-second century. Since this type was identified by Brassington at the Racecourse kilns, it has also been identified at Brough-on-Noe in the rebated-rim jar form and in classic Derbyshire ware forms elsewhere suggesting this type's use overlapped with the production of true Derbyshire ware. Softer, buff fabrics were recorded at Holbrook and Hazelwood kilns by Kay (1962, 31) but were interpreted by him as underfired wasters.

Given the evidence at Brough-on-Noe, now repeated at sites such as Staden, Derbyshire, where a softer "Derbyshire ware" was found in association with second century material (Makepeace and Bishop 1989, 25-9), it is more likely that this softer fabric continued to be produced to at least as late as the early 3rd century AD (Leary 1993, 120). Material from the metalled surface (context 005 find 40) included Samian of *c.*AD120-200, although later post-Roman ware were also found impressed into the upper surface of this feature (context 005 find 40).

Context	Find No	Comments on bag	Fabric	Date	Count	Weight	Abrasion	Part	Form	Vessel type
unstrat	49	single sherd from west of wall F0006 immediately above metalling 005	glazed ?pipe	Mod?	1					
unstrat	44		med/pm/mod		7	63.4				
unstrat	44		CT	PRIA?	6	14.3				
unstrat	44		DBY	140+	1	55.9	u	body		
unstrat	44		DBY	140+	1	58.4	u	incomplete rim	cupped	jar
unstrat	44		grey ware		4	48.3	a	body		
unstrat	44		grey ware	3+	1	43.2	a	lug	lugged jar	jar
unstrat	44		samian, possibly burnt?	2	1	2.1	v	body		
3	39	upper fill of north ditch	stone		1					
3	39	upper fill of north ditch	grey ware	L1-E2?	7	69.4	u	rim and body	jar with short everted rim	jar
3	39	upper fill of north ditch	grey ware	RB	1	5.3	a	basal	footring	
3	39	upper fill of north ditch	grey ware	RB	1	22	v	body		
3	39	upper fill of north ditch	small fine grey sherd with brown surface	RB	1	4.9	a	body		
9	34	upper fill of south ditch	DBY	140+	10	113.8	u	rim and body	cupped rim jar	jar
9	34	upper fill of south ditch	CT	PRIA?	4	26.3	a	body		
9	34	upper fill of south ditch	BB1	L3-4	1	5	m	rim and body	splayed rim	jar
9	48	upper fill of south ditch	DBY	140+	2	38.7	m	basal and body		jar

Context	Find No	Comments on bag	Fabric	Date	Count	Weight	Abrasion	Part	Form	Vessel type
		upper fill of south ditch	DBY	140+	1	9.8	m	body		jar
9	48	upper fill of south ditch	grey ware	L2-3	2	70	m	rim and body	bead rim bowl	bowl
9	48	upper fill of south ditch	grey ware	L1-E2?	1	2	a	rim	everted	jar
9	48	upper fill of south ditch	CT	PRIA-early RB	1	6.5	a	rim and body	everted rim vessel with cordon n shoulder or upper body	jar/bowl
5	37	metalling surface adjacent to south ditch	CT	PRIA/early RB	2	10.9	a	body		
23	46	sherd found inside "floor surface" within building defined by wall F006	Gritty oxidised ware	2+	1	2	m	body		
5	40	from metalling surface	grey ware	RB	2	17.6	m	body	closed vessel	
5	40	from metalling surface	samian- CG	120-200	1	3.4	m	body	b/d	
5	40	from metalling surface	med/pm glazed	med/pm	1	5.8	u	rim		

Table 5 Catalogue of pottery sherds.

Figure 24. Roman ceramics from upper ditch fills (003 and 009).

Figure 25. Roman ceramics from metalling layer (005). Samian Ware to the left and Grey Ware to the right.

Figure 26. Unstratified Roman pot including sherds of Grey Ware and Derbyshire Ware.

5. CHARCOAL IDENTIFICATION AND CONSERVATION ASSESSMENT

Jennifer Jones and Lorne Elliot

5.1 Charcoal Identification

Methods

The flot was examined at up to x60 magnification for charred botanical remains using a Leica MZ7.5 stereomicroscope. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Habitat classification follows Preston *et al.* (2002). Plant nomenclature follows Stace (1997).

Where possible, fragments of charcoal were identified from the samples. The transverse, radial and tangential sections were examined at up to x600 magnifications using a Leica DMLM microscope. Identifications were assisted by the descriptions of Schweingruber (1978) and Hather (2000), and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Material recommended for dating was cleaned of adhering roots and other organic material, wrapped in foil and put in labelled bags.

Results

The flot sample (context 20) comprised small fragments of hazel, birch and oak charcoal. The largest fragment (hazel 15mg) may be of insufficient weight of carbon for dating. The only charred plant macrofossil was a charred seed of the pink family, which is too small for radiocarbon dating. The results of the flot assessment are presented in Appendix 1.

Identification of charcoal was undertaken from a total of 60 samples, of which 22 contained material suitable for radiocarbon dating. These included samples 2, 3, 4, 6, 7, 8, 9, 10, 11, 18, 25, 27, 28, 29, 31, 40, 51, 52, 53, 55, 56 and 60. A minimum of eight different tree species was identified from the charcoal samples including hazel, alder, oak, birch, pine, blackthorn, holly and willow/poplar. An additional ten samples comprised material that may provide a radiocarbon date, however, they either contained species not recommended, such as oak heartwood (possibly long lived) and pine (possibly bog pine), or the material was possibly of insufficient weight (between 10-30mg). A list of material suitable for radiocarbon dating is presented in Table 7.

5.2 Conservation Assessment

Methods

Three copper alloy (CuA) objects were received for examination, conservation assessment and X-radiography. The objects (SF3, SF16, SF18) were X-radiographed on the same plate (XR 6287) using a range of different exposures, to try to recover maximum detail

The plates were processed and examined using an illuminated X-ray viewer. The objects were also examined under x16 microscopy to assess their condition and the potential for further conservation work.

Results

SF3: A flat, circular CuA object 16mm diameter and 1.5mm thick, with the remains of a shank on one side. The X-radiograph revealed no decoration or other surface detail. This is possibly a small button or stud. X16 microscopy detected traces of gilding on the underside of the object, below the soil cover. The object is highly corroded but stable.

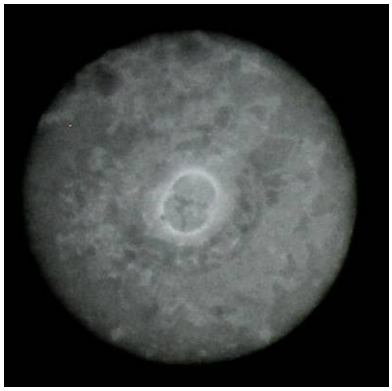


Figure 27. X-ray image of copper disc thought to be a button (find number 3).

SF16: An originally circular object *c.*21mm diameter, varying in thickness from 0.6-1.25mm. The piece has been sharply bent and its edges are damaged, torn and fragile. X-radiography revealed no surface detail to identify this as a coin, and the variability in its thickness would perhaps suggest that it is not. Highly corroded and fragile but stable.

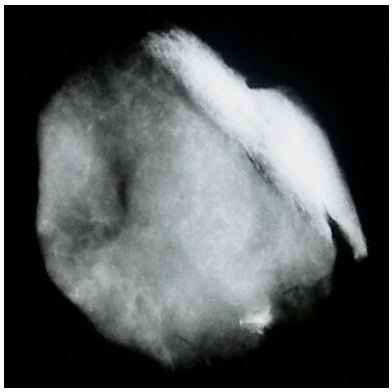


Figure 28. X-ray image of circular metal object (find number 16).

SF18: Complete circular coin or token 26mm diameter and 1.5mm thick. The surfaces are covered by gritty soil which overlies a powdery corrosion surface. X-radiography revealed surface detail/legend, but the object does not appear to be a Roman coin. It may be a later coin, though no head could be discerned and the (indecipherable) legend appears to be set out in several short horizontal lines. The object is highly corroded but stable.

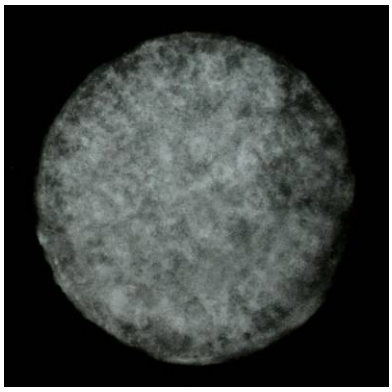


Figure 29. X-ray image of a small circular coin of unknown date (find number 18).

Recommendations

No further analysis is required for the flot or charcoal samples.

If find number 3 is archaeologically significant, it could be surface cleaned to reveal the extent of the gilding. No further conservation work is recommended for find number 16. Find number 18 could be surface cleaned to reveal any surviving details of surface decoration or legend.

Context		020
Feature		primary ditch silt
Material available for radiocarbon dating		(□)
Volume of flot assessed (ml)		3
Flot matrix		
Charcoal		+
Charred remains (total count)		
(t) Betula sp (Birch)	charcoal	(+)
(t) Corylus avellana (Hazel)	charcoal	(+)
(t) Quercus sp (Oak)	charcoal	(+)
(x) Caryophyllaceae undifferentiated (Pink family)	seed	+

[t-woodland/scrub; x-wide niche. (+): trace; +: rare; ++: occasional; +++: common; ++++: abundant (□) there may be insufficient weight of carbon available for radiocarbon dating (15mg hazel charcoal)]

Table 5 Data from palaeoenvironmental assessment.

Sample	Context	Context information	Single Entity 1	Weight	Single Entity 2	Weight	Notes
1	013	lower fill of North ditch	-	-	-	-	Nothing available for dating, (clinker/cinder) only.
2	003	upper fill of North ditch	Alder charcoal	91mg	Alder/Birch charcoal	246mg	Both fragments suitable for dating. The fragment of alder (91mg) has young branch growth attached. Birch (88mg) and oak charcoal were also identified
3	003	upper fill of North ditch	Birch charcoal	456mg	-	-	Suitable for dating. A fragment of clinker/cinder also present.
4	013	lower fill of North ditch	Alder charcoal	65mg	-	-	Suitable for dating.
5	013	lower fill of North ditch	-	-	-	-	Flecks of charcoal too small to identify or to date.
6	013	lower fill of North ditch	Alder charcoal	227mg	-	-	Suitable for dating (twisted/distorted growth rings noted).
7	013	lower fill of North ditch	Oak charcoal	205mg	-	-	Oak charcoal suitable for dating (branchwood). A fragment of clinker/cinder also present.
8	013	lower fill of North ditch	Hazel charcoal	41mg	-	-	Suitable for dating.
9	013	lower fill of North ditch	Holly charcoal	294mg	-	-	Suitable for dating.
10	013	sealed below wall (N.	Alder/Hazel	46mg	-	-	Suitable for dating.
11	013	base of lower fill North	Oak charcoal	455mg	-	-	Suitable for dating (branchwood).
12	014	linear ditch (Trench 2)	Oak charcoal	60mg	-	-	Not recommended for dating (possible heartwood).
13	014	linear ditch (Trench 2)	-	-	-	-	A fragment of clay/soil (possible burning?). Nothing available to date.
14	014	linear ditch (Trench 2)	-	-	-	-	Soft/crumbly material with no visible wood anatomy (clinker/cinder material?). (nothing available for
15	014	linear ditch (Trench 2)	-	-	-	-	Vitrified material with no visible wood anatomy (clinker/cinder), (nothing available for dating).
16	014	linear ditch (Trench 2)	-	-	-	-	A fragment of oak charcoal (30mg) (not recommended for dating) (possible heartwood).
17	014	linear ditch (Trench 2)	-	-	-	-	Clinker/cinder material only (no material for dating).
18	014	linear ditch (Trench 2)	Hazel charcoal	42mg	-	-	Suitable for dating.
19	014	linear ditch (Trench 2)	-	-	-	-	Dense indeterminate material, no wood anatomy visible (form of coal shale). Nothing available for
20	013	base of lower fill North	-	-	-	-	Nothing to date, soil only.
21	013	base of lower fill North	Oak charcoal	161mg	-	-	Not recommended for dating (possible heartwood).
22	014	linear ditch (Trench 2)	-	-	-	-	A fragment of clay/soil (possible burning?). Nothing available to date.
23	007	side of posthole	-	-	-	-	Tiny fragment of oak charcoal too small to date (3mg).
24	020	basal fill of North ditch	-	-	-	-	Dense material (fragment of coal shale) no visible wood anatomy. Nothing available for dating.
25	009	base of 009 in South	Hazel charcoal	57mg	Hazel charcoal	49mg	Suitable for dating.
26	009	base of 009 in South	Oak charcoal	26mg	-	-	Not recommended for dating (possible heartwood).
27	009	base of 009 in South	Hazel charcoal	85mg	Alder charcoal	36mg	Suitable for dating.
28	009	base of 009 in South	Blackthorn charcoal	41mg	-	-	Suitable for dating.
29	009	base of 009 in South	Hazel charcoal	19mg	-	-	May be insufficient weight for dating.
30	009	base of 009 in South	-	-	-	-	Nothing to date, soil only.
31	009	base of 009 in South	Birch charcoal	50mg	-	-	Slight vitrification/radial cracks, possible dating material.
32	009	base of 009 in South	-	-	-	-	Oak charcoal (12mg), not recommended for dating (left in sample bag).

Sample	Context	Context information	Single Entity 1	Weight	Single Entity 2	Weight	Notes
33	009	base of 009 in South	Oak charcoal	88mg	-	-	Not recommended for dating (possible heartwood).
34	009	base of 009 in South	Oak charcoal	116mg	-	-	Not recommended for dating (tyloses present, heartwood).
35	009	base of 009 in South	-	-	-	-	Small fragment of oak charcoal (13mg) (left in sample bag).
36	009	base of 009 in South	-	-	-	-	Small fragment of oak charcoal (21mg) (left in sample bag).
37	009	base of 009 in South	Willow/Poplar	12mg	-	-	Possibly too small for dating.
38	009	base of 009 in South	-	-	-	-	Tiny fragment of hazel too small for dating (left in sample bag).
39	009	base of 009 in South	-	-	-	-	Oak charcoal (28mg), not recommended for dating (left in sample bag).
40	009	base of 009 in South	Birch charcoal	44mg	-	-	Suitable for dating (radial cracks noted).
41	014	linear ditch (Trench 2)	-	-	-	-	Small fragments of hazel charcoal (18mg) possibly too small to date and not single entity.
42	014	linear ditch (Trench 2)	-	-	-	-	Coal shale. (Nothing to date).
43	014	linear ditch (Trench 2)	Hazel charcoal	16mg	-	-	Possibly too small to date.
44	014	linear ditch (Trench 2)	-	-	-	-	Small fragment of hazel charcoal (14mg) probably too small to date.
45	014	linear ditch (Trench 2)	-	-	-	-	Tiny fragment of hazel charcoal (8mg) too small to date.
46	009	upper fill of South ditch	cf. Pine charcoal	262mg	cf. Pine charcoal	181mg	Poor condition, mineral inclusion, splitting of resin ducts, (not recommended for dating).
47	009	upper fill of South ditch	cf. Pine charcoal	105mg	-	-	Poor condition (not recommended for dating).
48	009	upper fill of South ditch	-	-	-	-	Nothing available for dating, a fragment of clinker/cinder only.
49	018	pit fill sealed by metalling layer	Oak charcoal	129mg	-	-	Not recommended (possible heartwood).
50	018	pit fill sealed by metalling layer	-	-	-	-	Nothing to date, soil only.
51	018	pit fill sealed by metalling layer	Prunus sp charcoal	131mg	-	-	Suitable for dating.
52	018	pit fill sealed by metalling layer	Hazel charcoal	201mg	-	-	Suitable for dating.
53	018	pit fill sealed by metalling layer	Hazel charcoal	208mg	-	-	Suitable for dating.
54	018	pit fill sealed by metalling layer	-	-	-	-	Dense indeterminate material, no wood anatomy visible (form of coal shale). Nothing available for dating, (similar material to sample 19).
55	018	pit fill sealed by metalling layer	Hazel charcoal	133mg	-	-	Suitable for dating.
56	018	pit fill sealed by metalling layer	Hazel charcoal	274mg	-	-	Suitable for dating.
57	018	pit fill sealed by metalling layer	-	-	-	-	Nothing to date, soil only.
58	018	pit fill sealed by metalling layer	-	-	-	-	Nothing to date, soil only.
59	018	pit fill sealed by metalling layer	-	-	-	-	Nothing to date, soil only.
60	005	metalling layer	Hazel charcoal	44mg	-	-	Suitable for dating, (remaining small soft fragments from this sample appear to be from the same hazel

* Prunus sp (blackthorn, wild cherry, bird cherry).

Table 6 Material available for radiocarbon dating.

6. DISCUSSION

The excavation undertaken over the rectilinear enclosure at Whirlow Hall Farm has revealed a site of considerable interest, time depth and preservation. Rectilinear settlements are relatively common throughout England being particularly numerous in lowland agricultural settings where they appear as cropmarks. In South Yorkshire the majority of rectilinear enclosures are found in the east of the county on the Coal Measures, Magnesian Limestone, sand and gravel and alluvial deposits. They are less common in the uplands to the west. In these areas occasional Romano-British rural settlement enclosures occur as upstanding remains with stone banks, but these are usually curvilinear in form. Perhaps the most notable is the group of sites on and around Wharncliffe Crags where excavation at one site, Whitley, revealed a Romano-British building with double orthostat walls and a rubble core. There were remnants of a cobbled surface outside its entrance and in patches inside. Roman ceramics comprising Grey Ware, Derbyshire Ware, Samian Ware and mortaria was found and ascribed a mid 2nd – 3rd century date (Butcher 1970; Makepeace 1985). Other than this there has been little excavation of upland rectilinear sites in recent years and so little is yet known of their chronology, form and function in South Yorkshire, West Yorkshire or the Peak District. The site at Whirlow lies at the extreme south-western margin of South Yorkshire in a transitional upland-lowland location above the main tributary valley at the head of the Sheaf Valley. The Whirlow enclosure measures 71m in length and probably has a similar width, although because of the modern houses that encroach on the south side of the enclosure it can only currently be traced for 43m in this direction. It would therefore seem reasonable to estimate that the enclosure defined a space close to 0.5ha. This size places the enclosure in the larger category for rectilinear enclosures. Other rectilinear and sub-rectangular enclosures that have been examined in South Yorkshire tend to be considerably smaller as at Barnsdale Bar (enclosure encompasses 0.08 ha), Balby Carr (enclosure encompasses 0.01 ha), Hazel Lane Quarry (enclosure encompasses 0.23 ha), Roebuck Hill (enclosure encompasses 0.05 ha), Topham Farm (enclosure encompasses 0.33 ha) and Billingley Drive enclosure D, Thurnscoe (enclosure encompasses 0.1 ha). The site that probably provides the best comparanda for the Whirlow enclosure is the rectilinear enclosure at Oldfield Hill, Meltham, West Yorkshire, which is defined by a single upstanding bank and outer ditch, and which is of similar size and shape and is at a similar altitude (270m in the case of Oldfield Hill) and overlooks a small tributary valley. Further afield the rectilinear enclosure at Ingram South, excavated as part of the Ingram Valley Project (Frodsham and Waddington 2004, 182-4), has revealed a substantial multi-phase enclosure with a stone revetment wall on the inner side of the main enclosure ditch, echoing the discovery at Whirlow, and which has produced a suite of Roman period radiocarbon dates together with Roman ceramics and evidence for agricultural production, however this site still awaits publication.

The presence of a rectangular stone-founded building of Roman date with a wall surviving to two courses and with intact floor deposits at Whirlow represents a rare discovery, and particularly on a rectilinear enclosure site. Only a few stone-founded rectangular Roman buildings are known from rural sites in the region, the best known comparanda being some distance away in Derbsyhsire at Roystone Grange (Hodges and Wildgoose 1981), Carsington (Ling and Courtney 1981; Ling *et al.* 1990) and Ockbrook (Palfreyman 2001). A rectangular building is known to exist within the rectilinear cropmark enclosure at South Muskham, Nottinghamshire, but this building is positioned diagonally across the rectangular orientation of this enclosure suggesting that it either pre- or post- dates the enclosure. Therefore, the discovery of a Roman rectangular

building within a rectilinear enclosure would seem significant as such associations have been rarely documented before, and not within our study region. The site is also remarkable on another score; the regularity of the ditch, the stone wall built along its inner edge, the metalling and what we currently know of the gate arrangement all speak of Roman construction. It is possible that the first phase of the enclosure ditch is Iron Age in origin, as hinted at by the radiocarbon date from the primary ditch silt, but this is by no means certain as this charcoal fragment could very well be residual material. Other than this all the material culture from the enclosure deposits are ostensibly Roman or Romano-British indicating that the second phase of the enclosure, at least, was constructed by Imperial hands. Therefore, it does not seem appropriate to directly compare the Whirlow enclosure to the more common and typical Romano-British rectilinear rural farmsteads which typically appear to be made and used by native Britons. The earlier activity on the site, as evidenced by the pit sealed by the metalling layer and containing native British ceramics, has provided a late date for this activity which could be taken to imply that Iron Age occupation took place on the site in and around the time of the Roman invasion of Brigantia (northern England). Being located close to, or on, the tribal boundary of the Brigantes the site at Whirlow may have been of some strategic importance to both the Brigantes and invading Roman army. The stratigraphy on the site is complex but clearly differentiated and as further investigation takes place it should be possible to tease out a more accurate and precise chronology for the site.

The level of preservation on the site is important to note. The site not only preserves upstanding structural features, in the form of the building foundation wall, the wall along the inner edge of the ditch and the metalling, but the conditions of preservation appear good with well-preserved ceramics, metalwork and environmental residues. Furthermore, the Roman enclosure deposits seal Late Iron Age/native British archaeological remains. So far only a small area of the Roman layers has been removed and this has revealed the truncated remains of a sealed pit where *in situ* heating has taken place and broken pottery placed in it. It is therefore possible that a well-preserved and sealed Late Iron Age horizon extends underneath the rest of the Roman layers. Despite being in a field that has been ploughed, the ploughing never appears to have been deep and this has meant that the archaeological remains are relatively well-preserved.

The purpose of the site is not yet able to be determined with any certainty given that excavations are as yet in their infancy and only a small part of the monument has been started to be examined. What can be mentioned, however, is that this enclosure is sizeable, and it appears to have been built by the Roman administration. It contained at least one Roman stone-founded building, although given that it has been constructed close to the outer ditch this suggests that buildings may have been packed quite tightly into this enclosure. If this was the case then the enclosure could have contained a considerable number of buildings and supported a thriving population. The people who lived and used the site appear to have belonged to the Roman administration and the ceramics and C14 dating suggests that it was built in the late 1st or early 2nd century AD. This correlates with the timing of the Roman advance north into Brigantian territory which supports the view that the site was just inside the Brigantian border with the until it was incorporated under Roman rule during the governorship of Cerealis around AD 68-70. Being built on what had been the frontier of the Roman empire in what was newly acquired enemy territory provides an intriguing backdrop for understanding the enclosure's use and purpose. The landscape context of the site must also be considered as this no doubt is crucial to understanding the site's purpose. The western entrance of the site leads out immediately on to an ancient hollow way that runs up the ridge towards

Ringinglow where a Roman road is known to have traversed the moorlands so as to link the Roman forts at Navio (Brough) in the Hope Valley with the fort at Templeborough to the east of Sheffield, on the south side of the River Don. Although the precise route of this road has remained a topic of contention there is wide agreement that the road traverses over the moorland somewhere in the vicinity of Rininglow. This means that the enclosure at Whirlow would have been connected to the main communication route serving the nearest Roman forts. The presence of lead objects on the site hint at industrial activities and that the enclosure may not have just been associated with farming. Taking the above points into account it could be tentatively suggested that the Whirlow enclosure was a planned settlement built by the Roman administration on top of a pre-existing British site, perhaps to stamp authority over the local populace and to support the Roman military in its push north into Brigantian territory. Being positioned on a supply and trade route food, raw materials and manufactured goods could have been stored, recorded and kept safe at the site until such times as they were required to be moved along the supply routes to the stores in other military or administrative installations. The fact that it was built over an existing British site suggests that an existing farmstead was demolished and taken over by the new Roman administration.

There are still many unanswered questions concerning this interesting site and only further excavation will allow for the full constructional form, chronology, purpose and place within the Iron Age – Roman history of Sheffield to be established. It is rare to find Roman archaeology in Sheffield City limits and given the considerable potential of the site to inform, educate and enthuse residents, as well as the 10,000 plus school visits to Whirlow Hall Farm that take place each year. So far we have only a partial account and without further fieldwork this unexpected and potentially highly informative site will remain mute.

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