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EVIDENCE OF *'THROWING IN THE CLAYES'*: BACKFILLED MINEPITS AND OTHER ARCHAEOLOGICAL FEATURES AT THE ROSEMEAD PLACE DEVELOPMENT, HOREBEECH LANE, HORAM, EAST SUSSEX

Simon Stevens

INTRODUCTION

This article provides the results of a programme of archaeological work carried out by Archaeology South-East (ASE, UCL Institute of Archaeology) on the Rosemead Place Development, Horebeech Road, Horam, East Sussex (TQ 58374 17000; Fig. 1). The fieldwork was undertaken in advance of residential development, as a condition of planning, and was commissioned and funded at all stages by Bovis Homes.

Full details of the site including descriptions of features and specialist reports on finds are available on request (ASE 2020).

THE TOPOGRAPHIC AND GEOLOGICAL SETTING

The site lies on the northern side of Horebeech Road, to the south-east of the centre of the Wealden village of Horam. It is situated on a gentle north-west to south-east slope at heights between 63mAOD and 69mAOD. The development lies within the High Weald Area of Outstanding Natural Beauty, with extensive views over the valley of the Waldron Gill and land to the north.

According to the most recently available data from the British Geological Survey, the underlying geology consists of the mudstones of the Wadhurst Clay, with the sandstone, siltstone and mudstones of the Ashdown Formation immediately to the north. Superficial deposits of alluvium exist within the

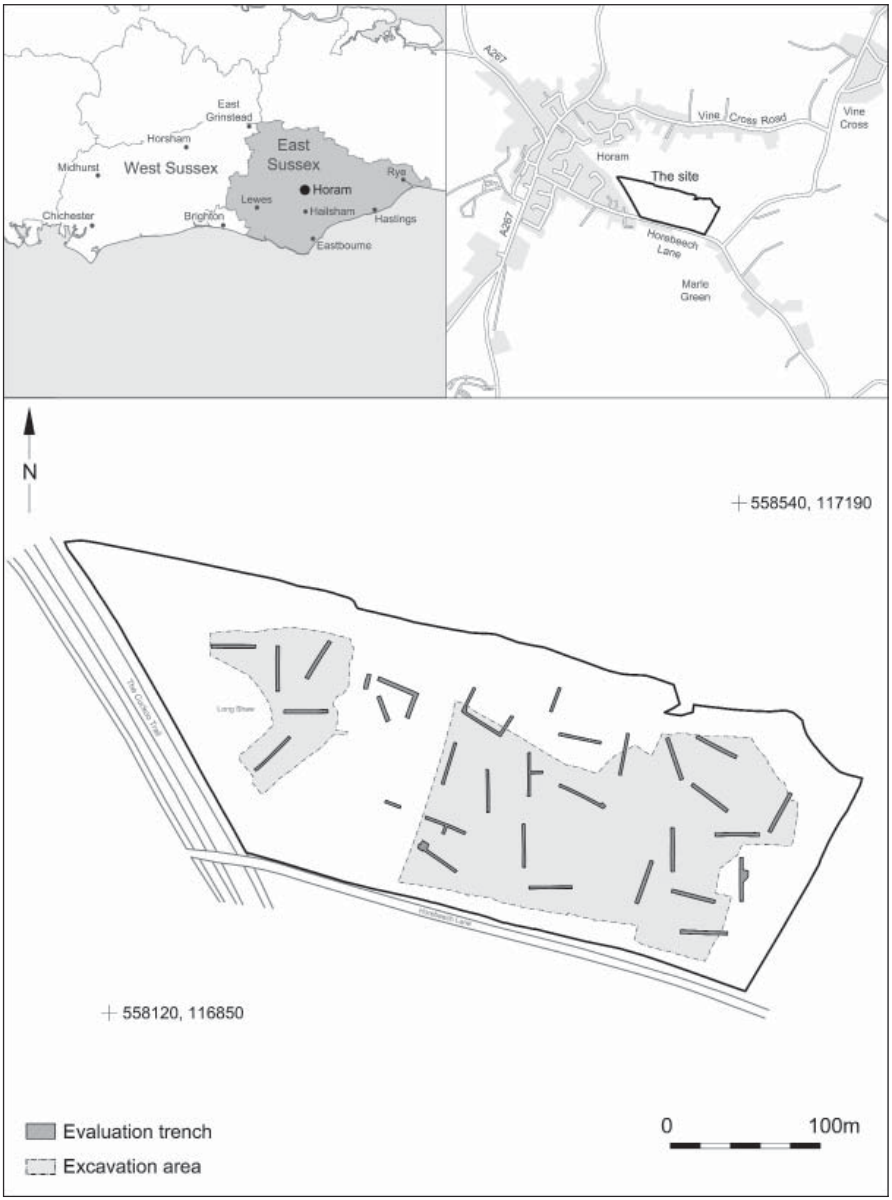


Figure 1: Site location

valley (BGS 2022). Seams of iron ore (the mineral siderite) occur in the 'natural' Wadhurst Clay and have been utilised by the Wealden ironworking industry for more than two millennia (Hodgkinson 2008, 10–12).

RESULTS

Desk-Based Assessment and Geophysical Survey

The results of initial examination of cartographic material and data held on the East Sussex County Council Historic Environment Record (ESHER) did not suggest the site offered much potential for the survival of buried archaeological remains (ASE 2016a). However, a geophysical survey provided more optimistic results, with anomalies suggesting some level of pit digging at the site (ASE 2016b).

The Evaluation

The Rosemead Place Development was archaeologically evaluated by the mechanical excavation of trial trenches (Fig. 2). Most of the available area had suffered considerable damage from a destructive ecological survey which had destroyed any evidence of earthworks. However, numerous archaeological features were found spread across the site, mostly large extraction pits, with exposures of seams of iron ore in the edges of the features (ASE 2019). It was decided that further archaeological mitigation work was necessary to meet the terms of the planning condition.

The Strip, Map and Sample (Area Excavations)

Two portions of the site (Areas A and B) were stripped and excavated between March and July 2019. A range of archaeological deposits were encountered and recorded (Fig. 2). For ease of reference, some parts of the site have been labelled in the text and figures according to interpreted land use, i.e. Open Area (OA), Enclosure (ENC1), Ditch (D) etc. with groups of features labelled as G1, G2 etc.

Residual Prehistoric Material

The earliest material recovered from the site consisted of a thin residual 'background scatter' of struck and fire-cracked flint recovered from later deposits. A Mesolithic/Neolithic date for activity in the locale was suggested by two blades, a blade-like flake and an awl. The remaining worked flints

Figure 2: Site plan showing areas of archaeological intervention and all features

could be later prehistoric.

Period 1: Middle to Late Iron Age (c.200 BC to c.0 BC)

The earliest group (G5; Fig. 3) of archaeological features encountered at the site comprised a handful of small pits with charcoal-rich fills. These were notably different to the majority of features encountered at the site and all were found in Area A. The pits were sub-circular in plan, with near vertical sides and flat bases. None of them were more than 1m in diameter or more than 0.15m in depth.

Though no pottery or other datable artefacts were recovered from any of these pits, a sample of charcoal taken from one of the features gave a radiocarbon date of 174 cal BC to 0 cal BC (Beta–543502; 2070 ± 30 BP; 95% probability).

This dating places the features in the Middle to Late Iron Age. Unfortunately, the deposits produced no other evidence of domestic or industrial activity, so further interpretation of the site at this time remains speculative. The complete absence of iron-working debris found in these pits nevertheless suggests that iron smelting was not being undertaken at the site at this time, despite the presence of local ore deposits.

Period 2: Early Romano-British (c. AD 50 to AD c.120)

A curved ditch, interpreted from its shape as forming part of a hilltop enclosure, was excavated in Area B (ENC1; Fig. 4). The ditch was investigated in six 1m wide sections, to reveal a consistently flat-bottomed feature, which varied in width from 0.5m to over 2m. The fills were all grey or orangey grey silty clays. A small assemblage of pottery dated to the AD 1st and 2nd centuries was recovered, as well as debris from ironworking including slag and fired clay.

A thin scatter of small pits and/or post-holes were found within the enclosed area some containing contemporary pottery and similar metalworking debris to that recovered from the enclosure ditch. The features were never more than 0.30m in diameter or more than 0.26m in depth, with near vertical sides, flat bases and orangey grey silty clay fills.

Two large elongated pits were found close to Area B's eastern limit of excavation (G3). They contained the largest groups of AD 1st and 2nd century pottery from the site, incorporated into backfills mostly consisting of ironworking debris, mainly bloomery slag, as well as oak charcoal and

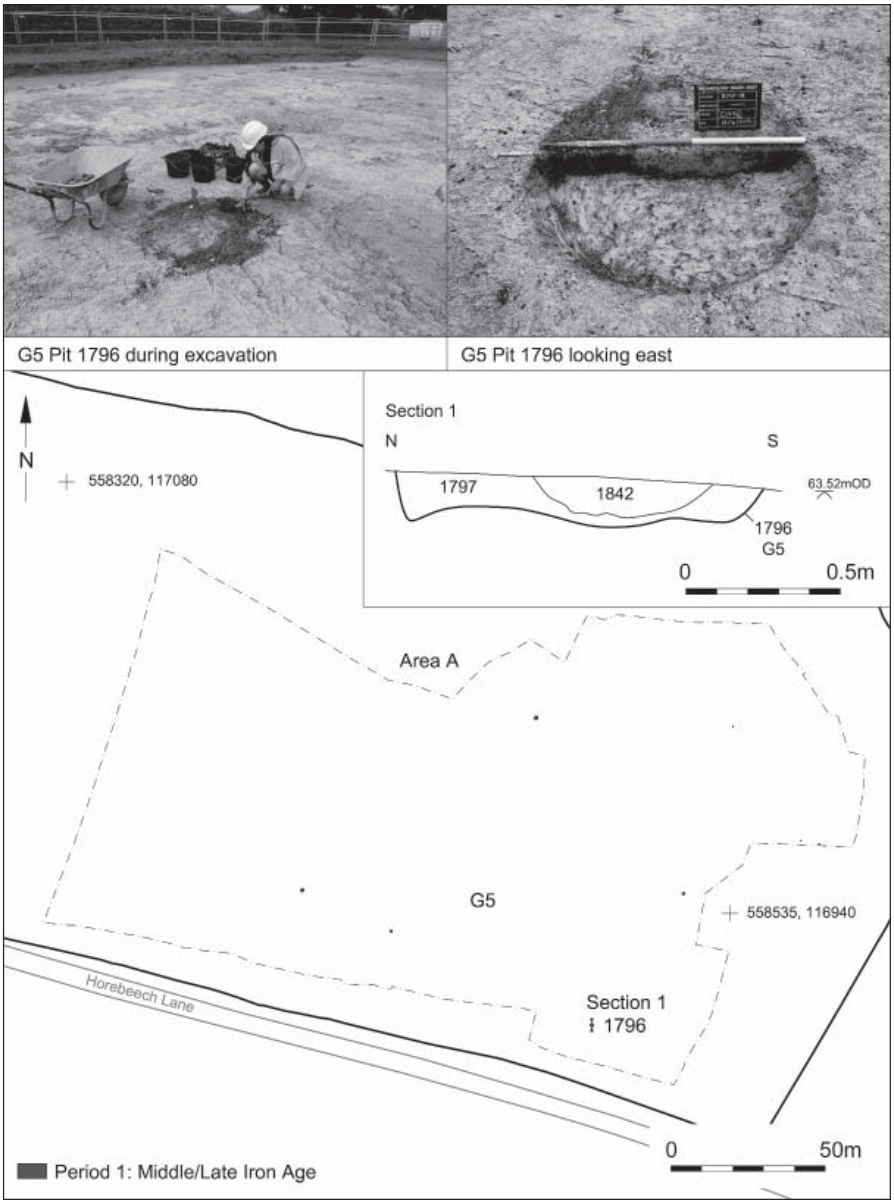


Figure 3: Period 1 – Middle/Late Iron Age plan, section and photographs

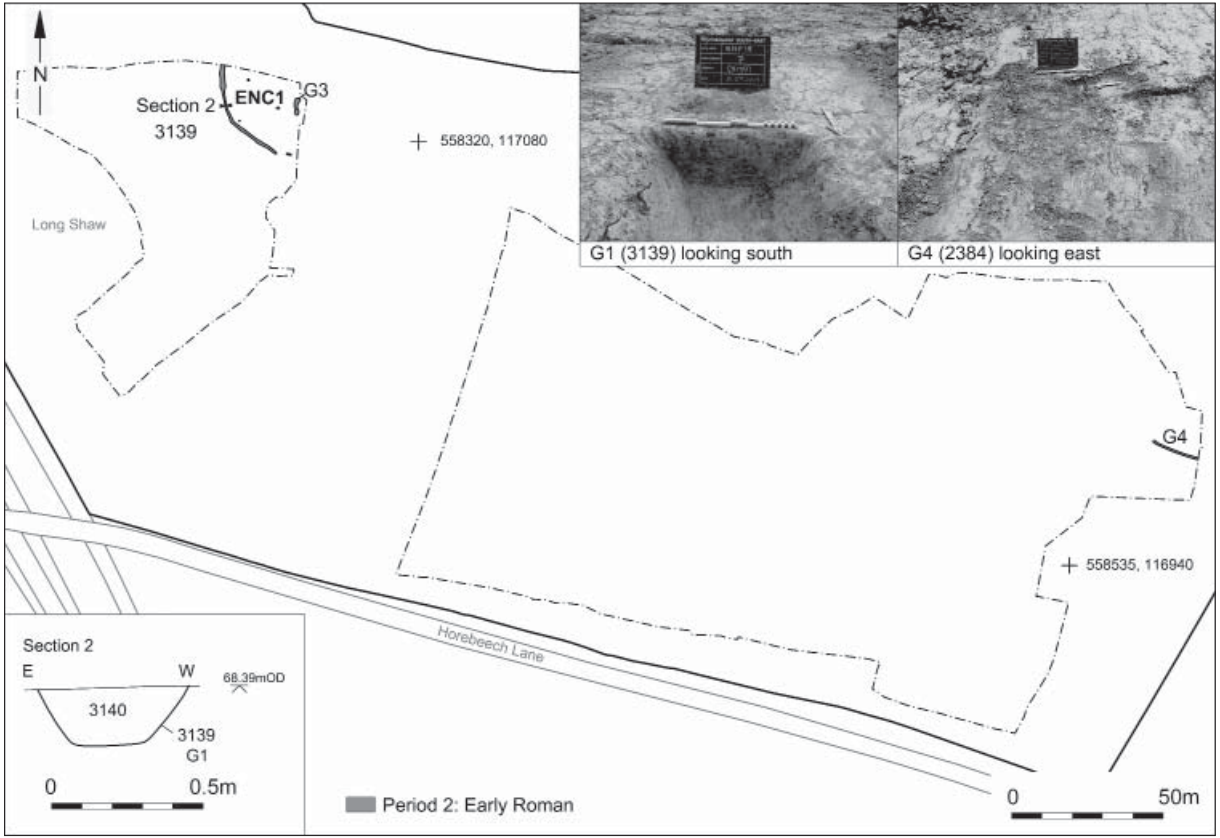


Figure 4: Period 2 – Early Roman plan, section and photographs

fragments of fired clay, presumably from construction and/or repair of a furnace (or furnaces), as well as more obvious furnace lining with slag adhering to it.

The presence of debris from ironworking in such a high concentration is clearly indicative of the location of a Romano-British bloomery furnace or furnace(s) in the vicinity, presumably to the north of the site, closer to the valley side, in the preferred location for iron smelting furnaces of this era (Hodgkinson 2008, 32–3).

There were no features outside of the enclosure, and the only other Romano-British feature identified was a length of shallow, flat-bottomed gully encountered at the other end of the site in Area A (G4). The gully continued beyond the eastern limit of the site. Pottery found within the gully suggests that it is contemporary to the enclosure in Area B and suggests Romano-British remains may survive to the east of the site.

Period 3: Post-medieval (c. AD 1571 to c. AD 1793)

The vast majority of the recorded archaeological features at the site were assigned a post-medieval date. This was based on limited artefactual and scientific dating, represented by numerous pits mostly excavated deep into the underlying geological grey and orange clay strata of the Wadhurst Clay. Most of the investigated features consisted of near vertical-sided pits, some with a gently tapering cone-shaped profile, with no evidence of deliberate splaying near the base to form a 'bell pit' (cf. Crossley 1994, 204). The pits exposed the underlying geological deposits, which included seams of naturally occurring iron ore, confirming the interpretation of the features as 'minepits' (the traditional Sussex name for iron ore was 'mine'; Hodgkinson 2008, 12). Such pits were usually backfilled with the upcast either from the minepit itself, or from the next adjacent pit being dug; a technique described in 1741 as 'throwing in the Clayes' (letter written by local ironmaster, John Fuller to Hans Stanley; quoted in Blackman 1926, 43).

Analysis of the pattern of features showed an arrangement of larger pits for extraction surrounded by notably smaller pits thought to be for prospection. The latter were intended to trace the extent of the highly irregular siderite seams:

> *'The horizons or beds, containing the ore often end abruptly only to reappear again at a short distance away; they do not keep to a definite*

'line' in the clay. Such breaks or interruptions in the occurrence of the ore are shown by the repeated remains of old pits and workings found in various parts of East Sussex and Kent. It would seem that early workers on 'losing' the ore at one point would move on to about 50 to 100 yards and would begin again with trial holes and pits' (Sweeting 1944, 5–6)

This juxtaposition has been noted in woodland (Jonathan Prus pers. comm.) but was obviously clearer in plan at Horam, where the topsoil was stripped to reveal something of an exaggerated 'moonscape' across most of the investigated areas of the site (Figs 5 and 6).

Features interpreted as prospection pits were sometimes less than 1m in diameter, but usually between 1m and 1.5m in diameter, and investigated examples were up to 4m deep. Extraction pits on the other hand were found to be up to 5m in diameter, with a similar maximum depth. Examination of the surviving edges of the pits showed that there were up to five separate seams of ore per pit, with exposures varying in position from the surface of the Wadhurst Clay deposits to a depth of nearly 4m within them. The seams were never more than 0.15m in thickness, suggesting the successful removal of thicker deposits, and cessation of extraction when the seams became too thin. All excavated minepits showed characteristic layers of post-medieval backfill (Fig. 6).

Despite the categorisation of features based on morphology there are clearly issues with this implementation of an artificial dividing line between the supposed classes of feature. This is especially true given problems with exact measurements of the archaeologically unexcavated pits where post-medieval backfilling had left unclear edges. Arguably, the most valuable insight was simply to reinforce the idea that the pits were not dug randomly, but with clear evaluation of areas by small pits, followed by extraction of the highly irregular seams of ore in larger sub-circular pits extended until the siderite deposits became too thin (or perhaps too poor in quality) to be economically viable to extract. This may have led to the considerable variation in size of the larger pits.

In terms of analysis of features, numerical analysis of the ratio of prospection pits to extraction pits (based on diameter) is hamstrung by the limitations of the space available for archaeological excavation, i.e. no complete, discrete minepit area with discernible boundaries could be discerned.

There was, however, some subtle (and some not so subtle) differences

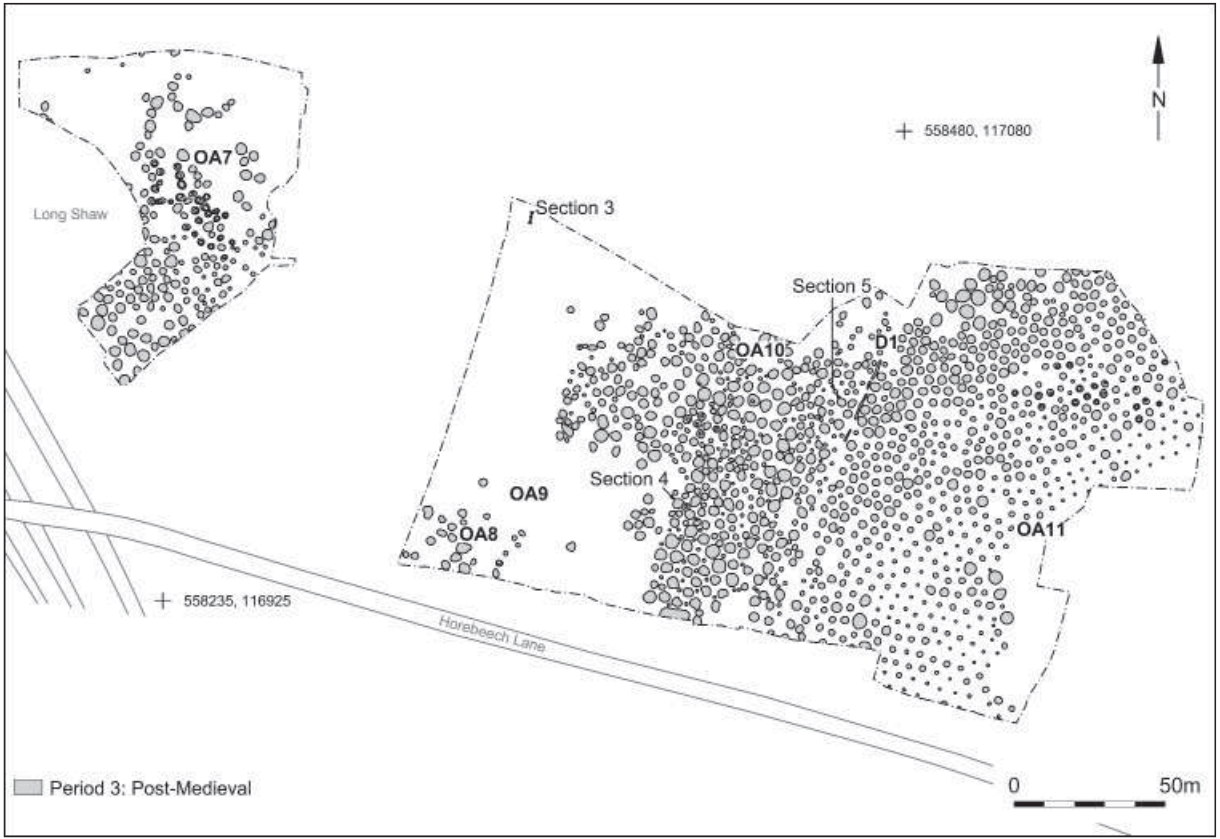
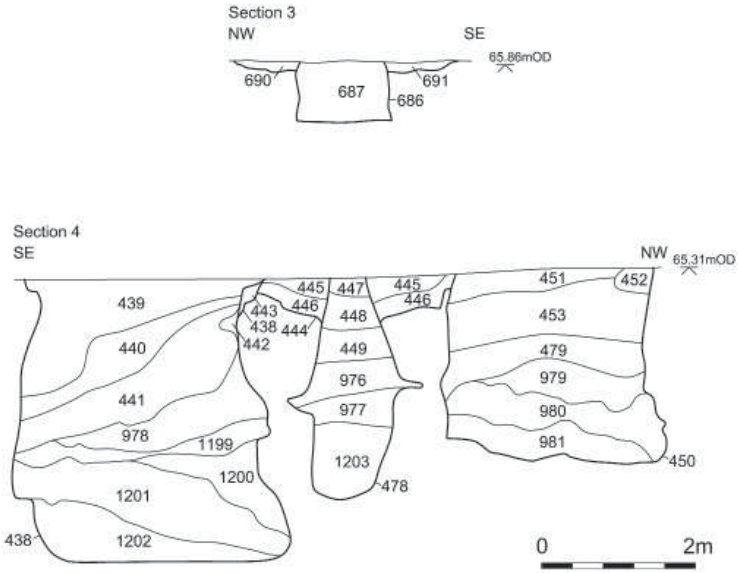
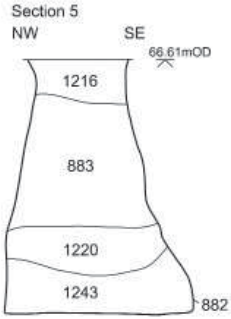


Figure 5: Period 3 – Post-medieval plan





Photograph of minepits

Figure 6: Period 3 – Sections and photographs

in distribution across the site, most notably on either side of a former field boundary (D1), which ran north-east to south-west across Area A. The landscape feature possibly had medieval origins and was marked on cartographic sources dating from the late 17th century. By the time of the late 19th century Ordnance Survey map it was no longer shown (ASE 2016a). The minepits clearly respected the feature (offering the first clue as to their date; see below), which survived in places as a shallow gully in the Wadhurst Clay.

Features to the east of D1 (OA11)

A total of 628 pits (170 surviving prospection pits and 458 larger minepits) were encountered and recorded in this area. There was an almost geometric pattern of prospection pits, with a notable concentration of extraction pits in OA11's north-western portion. This pattern apparently showed that the main ore seams considered to be economically viable were 'lost' or just absent in the south-eastern part of the area. This despite a clearly rigorous campaign of prospection. Arguably, the paucity of extraction pits left a much clearer pattern of the prospection pits visible, and this may have been the 'original' pattern across much of the site prior to the more concerted push for extraction.

The largest of the extraction pits was over 5m in diameter, with mechanically excavated examples of up to 4m deep with four or five exposed siderite seams. All pits were backfilled with layers of 'Clayes'. A group of nineteen intercutting features of a distinct type of concentric minepit where one deep pit clearly cut through a wider, shallow silted up pit was also identified. The later, inner pit, often varied in its position in relation to the larger outer pit. The reasons for this arrangement remain obscure, perhaps evidence of localised systematic tree removal. What was clear was that a small number of pits had been dug through shallower examples (noticeably these were not deliberately backfilled, but apparently silted up over time; Fig. 6).

A number of the features in the area were manually or mechanically investigated. Timbers were recovered from the backfill of two of the larger minepits, although neither were suitable for scientific dating. A fragment of clay pipe stem recovered from the surface of a minepit was dated to between c. AD 1610 and c. AD 1710 providing a date range which broadly corresponds with two radiocarbon dates obtained from charcoal from a

sealed context in one of the minepits; cal. AD 1726 – cal. post AD 1950 (Beta – 543503; 190 ± 30 BP; 95% probability) and cal. AD 1619 – cal. post AD 1950 (Beta – 543504; 260 ± 30 BP; 95% probability). An iron pick head (RF <1>) discovered lodged in the natural clay between two minepits in this area may to relate to the ore extraction, but this was far from certain. The pick head was complete, with a large oval socket for a wooden handle, and measured 290mm in length. It is in good condition and of probable late post-medieval date.

Figure 7: Iron pick head, RF <1>

Features to the west of D1 (OA10)

A total of 480 pits (117 surviving prospection pits and 363 larger minepits) were encountered and recorded in this area. The extraction pits formed the most concentrated arrangement of minepits at the site, evidence of targeting of seams of apparently economically viable ore. There was a cluster of six pits of the concentric type identified in plan (Fig. 3, Section 3).

Given the high concentration of larger pits, the potential geometric pattern of any initial prospection had been lost, but it is clear that there had been some form of systematic prospection prior to the excavation of the larger pits. The features extending westwards from the field boundary (D1) ceased at apparently clearly defined boundaries, which did not survive as discernible archaeological features (see below).

It was possible to manually archaeologically excavate a number of features in this area by systematically reducing the surrounding areas by machine to

allow safe ingress. A cluster of three features excavated in this way clearly showed prospection pits that predated larger extraction pits. A 2.90m deep conical prospection pit (which showed signs of limited collapse at depth) was recorded as single pit [444], but was actually shown in section to be two concentric pits ([444] and [478]) with the outer fills cut by minepits [438] and [450]. The latter were 3.1m and 2.6m in diameter, and 3.6m and 2.5m deep respectively. All three of the features show the expected post-medieval method of backfilling (Fig. 6, Section 4).

Another manually excavated feature, minepit [882] was 3.31m deep, again slightly conical in shape rather than bell-shaped (Fig. 6, Section 5).

No datable material was encountered in the manually excavated features; a single piece of residual bloomery slag was found in the backfill of one, and a piece of preserved timber was recovered from another, but neither could be used to date the features.

Samples of in situ iron ore deposits were taken from the margins of two minepits in the area, and were submitted to Alan Davies for analysis. The ores were found to be more suitable for smelting in a blast furnace than a bloomery furnace, further supporting a post-medieval date for the campaign of extraction (Davies 2020, 62–3).

Separate Fields? (OA8 and OA9)

A clearly defined right-angled area possibly corresponding to two rectilinear fields (OA9) had virtually no minepits within it, although there appeared to be some encroachment around the areas edges. Presumably this zone was in use for some other purpose, perhaps even managed woodland for the production of charcoal, although this is pure speculation.

There was another area of extraction to the south-east (OA8). Twenty-eight pits were encountered (only 4 surviving prospection pit and 24 larger minepits) with no obvious pattern to the prospection pits. Some of the investigated extraction pits were up to 4m in diameter with a maximum archaeologically machined depth also approaching 4m. A fragment of tile was recovered from the upper fill of one, suggesting a late post-medieval date.

In addition to the arrangement of pits, two small, shallow hearths (G16) were encountered. Both were surrounded by a characteristic 'halo' of baked 'natural' clay showing significant heat had been generated within the

features. Evidence of this in situ burning and the presence of roasted ore in the oak charcoal-rich fills (coupled with a total absence of slag) provided clear evidence of ore roasting at the site, but only on a small scale. Although ore roasting is usually a pre-smelting process which alters the chemical composition of the ore, drives off water, and breaks it into more manageable pieces (Hodgkinson 2008, 15–17), given the limited capacity (and limited number) of these features, it is suggested that they were for some form of quality control/testing rather than wholesale processing of ore on-site to create the 'Burnt Mine' for the local furnace(s) (Blackman 1926, 30; Salt 1966, 78).

OA7

A total of 153 features were encountered in Area B (35 surviving prospection pits and 118 larger minepits). They were more concentrated in the southern part of the area, noticeably thinning to the north and north-west. Twenty eight examples of the concentric pit arrangement were encountered and recorded. Limited manual, and deeper mechanical, excavation showed the familiar near vertical or slightly conical profile of the minepits, with no evidence of splaying near the base. Diameters of the extraction pits were sometimes over 4m, with mechanically excavated examples as deep as 3.1m. Samples of iron ore were recovered from seams revealed by minepits, and were submitted for analysis to Alan Davies (see above).

DISCUSSION

Arguably any discovery of archaeological remains in the general area is important given the relative scarcity of known sites in the Weald, although increasingly this seems to reflect the historic rarity of fieldwork rather than the true situation on/in the ground (Margetts 2018). The excavation produced a small quantity of worked flints that reflect human presence during the remote past. This adds to the corpus of sites with evidence of hunter/gatherer activity in the Weald, but little else of value can be said.

Although no evidence of Iron Age iron-working per se was recorded, the charcoal-rich pits might suggest that such activity was occurring at this time; possibly situated close to the site or truncated away by the intensive post-medieval mining activities. The Romano-British iron-working evidence might support a model that there was an Iron Age precursor, however given

the available evidence, this is pure supposition.

Given that the usual method of discovery of Wealden bloomery sites is from the identification of deposits of inherently undatable slag, any site with closely datable pottery found in close association with iron-working debris must be considered of great importance. In the last published survey only 29% of Wealden bloomery sites had been dated and of those only 70 could be firmly dated to the Romano-British era (Hodgkinson 2008, 27). WIRG's database currently shows that although the percentage of dated bloomery sites has remained the same, the number of sites securely dated Romano-British period has increased to some 136. Clearly great progress has been made in the intervening years (e.g. on WIRG's ongoing excavations at the Romano-British site at Great Park Wood, Brede; Stevens 2019), the Horam site enters a relatively small corpus of investigated sites of this date. Although it was unfortunate that the furnace or furnace(s) lay outside of the investigated area, the nature of the evidence strongly suggested that iron smelting was undertaken on the valley side closer to the Waldron Gill to the north (cf. Hodgkinson 2008, 32–3).

In terms of activity within the excavated area, (as opposed to outside of it), analysis was somewhat handicapped by the paucity of features within the investigated element of the enclosure (ENC1), and the somewhat limited range of artefactual evidence. It would appear that a small assemblage of pottery dating from the 1st and 2nd centuries AD had become incorporated into deposits of ironworking waste. This is not indicative of any extensive domestic local occupation, but more likely the result of consumption of food and drink during the hard (and thirsty) work of iron smelting. However, pottery of a broadly similar date was recovered from a substantial deposit of slag and furnace debris in Clappers Wood c.1km to the east of the site in 1990 (Hodgkinson 1991, 5), with another deposit of undated slag even closer (Straker 1931, 383), indicative of at least some concentration of Romano-British iron smelting in the vicinity.

The investigation of the methodologies employed in ore extraction are amongst the rarest areas of study into the Wealden iron industry. A search of the Wealden Iron Research Group database (WIRG 2022) reveals numerous examples of places with names such as 'Minepit Wood', and there are a number of examples of recently published surveys of the distribution of minepits within tracts of woodland (e.g. on a large scale at St. Leonard's

Forest; Blandford 2013, or in a single small plot of woodland as at Waldron; Smith 2016). Examples of excavated minepits are, however, much rarer, limited to a mere handful of investigations.

Published examples are restricted to undated minepits at Herstmonceux (Tebbutt 1978), Rotherfield (Swift 1982), a possible Romano-British example at Battle (Lemmon 1951–2) and the firmly dated medieval minepit at Sharpthorne (Worssam and Swift 1987). Anecdotal evidence suggests some others may have been excavated in the past, for instance at Fernhurst (Jonathan Prus pers, comm.), but the published dataset remains extremely limited. What all the features revealed was that extraction was undertaken by the excavation of a near vertical shaft with no evidence of deliberate splaying at the base to form the characteristic bell-shaped profile of other types of mineral extraction pit (cf. Crossley 1994, 204).

What is now absolutely clear is that it is time to finally abandon the term 'bell pit' in reference to iron ore extraction in the Weald, as firmly stated by Hodgkinson (2008, 13), and previously partially addressed by Cleere and Crossley (1995, 263). The evidence from the minepits excavated at the current site (and the limited pre-Horam dataset) clearly counters Straker's assertion that the term minepit 'usually denotes a bell-pit' (Straker 1931, xiv).

The discovery of the minepits in an area of open ground bucked the trend of the 'usual' recorded location of these remains in woodland (Cleere and Crossley 1995, 16–18). It appeared that the Horam site had been subject to an organised campaign of reinstatement and levelling allowing it to be put to agricultural use. This is unlike the more stereotypical Wealden minepit concentrations, which left the land too pockmarked with partially waterlogged holes to be of any economic use except as woodland. It should, however, be noted that still-visible minepits can occasionally be encountered in open fields (e.g. Worssam and Herbert 2000, 17–20).

In John Fuller's aforementioned letter of 1741, he states that if the backfilling and levelling are carried out correctly, 'then the ground will look as well and be more profitable to the Tenant than it was before the oare was dug' (quoted in Blackman 1926, 43). The current site offered the first evidence of the wholesale implementation of Fuller's advice on a Wealden ore extraction site.

This brings us neatly to the question of site ownership and the destination of the ore. It was presumed that the nearby Heathfield Furnace (in operation

c.1693 to c.1793; WIRG database 2022; Straker 1931, 374–6), or the Waldron Furnace (in operation c.1571 to c.1787; WIRG database 2022, op. cit. 381–2) would have been the receivers of the ore, dates of operation corresponding with the limited artefactual and more solid scientific dating. Both are within 2km (and broadly equidistant, to the north-east and west respectively) from the site. The WIRG site database shows three further known blast furnace sites within a 5km radius (at Cowbeech, Markly (Rushlake) and at Stream Farm near Chiddingly).

The Fuller family, the well-known local ironworking dynasty had built Heathfield Furnace, and ran the complex primarily as agun foundry during the 18th century. Although Straker (*op. cit*) was of the opinion that Waldron came into the possession of the Fullers in AD 1716, more recent research shows that it was leased to Thomas Hussey and John Legas during the 18th century (Hodgkinson, 2009). But if the Horam site was providing ore for one (or indeed both of them) perhaps the Fullers owned the land, and were following their own advice in terms of the backfilling. It is, however known that the Fullers obtained ore from other landowners (Salt 1966, 78). Extensive documentary sources are available for both furnaces, and further research might be able to more firmly link the current site to the Fullers (or otherwise), but full study of the 'superabundance of material' (Salt 1966, 65) was beyond the remit of the current site report.

Even a cursory examination of the published sources on the Fuller archive reveals numerous references to 'mine' and 'miners' as well as costs of digging and transporting the material. In the much-quoted letter to Hans Stanley, Fuller offers advice on managing the miners, so that they extracted the best ore rather than the most easily accessible material ('an ancient sin of the miners'; Straker 1931, 105), which could lead to flooding of deeper seams. Perhaps this advice was given to an 'iron miner' named Richard Barton who was attached to the Heathfield Furnace in AD 1741 (Blackman 1926, 33)?

An attempt was, however, made to match Fuller's well-known descriptions of local ore seams (reproduced in Cleere and Crossley 1995, fig. 9) with those encountered at the site. He described eight distinct seams in a c.5.5m deep shaft sunk into the Wadhurst Clay near Heathfield, each with different characteristics and names. The uppermost was intriguingly called 'Thirteen Foot Balls'. Sadly, this was somewhat doomed to failure at the outset, given:

> *'the only consistent factor at the site is how inconsistent the ore seams are across the excavated area, a problem made worse by the skill of the ore miners in removing so much of the material and yet leaving so little on the edges of their workings' (Davies 2020, 49).*

Comparison of the thin deposits of ore left behind by the miners with Fuller's descriptions of the 'his' ore was entirely unsuccessful, perhaps only highlighted the mineral's characteristic variability.

This fundamental problem of attempting to analyse material that was by its very nature mostly no longer available for analysis also applied to any calculations of the volume of ore that had been removed from the site. Although calculations have been attempted elsewhere (e.g. near Bletchingley; Worssam and Herbert 2000, 19–20; at Sharpthorne; Worssam and Swift 1987, 14), the unpredictability of the Horam ore seams added to the problem of accurate calculation of ore volume, especially given the full extent of the area of extraction could not be seen given the development-led nature of the excavation.

Hodgkinson (2008, 92) has argued that some 150 minepits similar to those recorded at Sharpthorne would have been needed to keep a furnace like Heathfield in operation for a single, usually annual campaign (Fuller confirms that Heathfield followed the usual practice as a 'winter furnace', quoted in Blackman 1926, 42). Although the Sharpthorne minepits were deeper than those at Horam, the observed pits were smaller in diameter and had equally thin, although more numerous surviving seams of ore. Whilst acknowledging the vagaries of the ore deposits at Horam, Hodgkinson's calculations offer a firm benchmark for a broad estimate of the capacity of the site's minepits to feed a hungry local blast furnace (or indeed furnaces). Given there were nearly 1000 extraction pits at the current site, and even presuming the Horam pits had higher yields on average than the smaller Sharpthorne pits, this suggests that the enormous number of minepits recorded in the excavated areas would only have kept a furnace like Heathfield in blast for a decade or so. This is stark evidence of the immense scale of work required in just one element of the Wealden iron industry.

CONCLUSION

In conclusion, archaeological mitigation work in advance of the development

of Rosemead Place, Horebeech Lane, Horam offered the chance to scientifically examine a large open area in the Weald, still a relatively rare opportunity. Scant but tangible evidence of prehistoric activity was followed by limited traces of Iron Age activity, in turn succeeded by more substantial evidence of Romano-British ironworking.

The site's greatest significance clearly lay in the first opportunity for the large-scale investigation of an ore extraction site in the Weald. Given the scarcity of archaeological investigation of these features (despite their key place in the iron production process) the site represents an all-too-rare window into an element of the recent past mentioned in surviving contemporary letters and accounts. Such features are often noted in the region's woodland, but have never before archaeologically investigated on such a scale.

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