

OXBLZCEX (OX)

Blackbird Leys 'Zone C', Oxford

NGR SP 554 022

Archaeological Salvage Excavation Report



Oxford Archaeological Unit

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**OXFORD, BLACKBIRD LEYS 'ZONE C':
SUMMARY REPORT ON SALVAGE EXCAVATIONS
BY
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Summary

Limited salvage excavation revealed part of a system of enclosures and other ditches of Roman date. These were associated with relatively poorly-preserved features probably relating to the Oxford Roman pottery industry. The associated pottery assemblage was principally of late 3rd-4th century date and contained a number of pieces of considerable intrinsic interest.

INTRODUCTION AND BACKGROUND TO THE PROJECT

A large area (c 25 ha) of land lying south-west of the present Blackbird Leys housing estate, on the south-east side of Oxford, is currently under development for housing. Much of this development is for social housing and is being funded by Oxford City Council.

The archaeological potential of the area, particularly in relation to the nationally-important Roman pottery industry, is clear and has been evident for a long time. Roman pottery kilns lying less than 100 m north of the present development complex were excavated as long ago as 1879 and three kilns were recovered in 1961 during the construction of the existing housing estate. Further kiln sites are distributed across the whole of east and south-east Oxford (for a summary of the archaeological background to the area see OAU 1995a, for the Oxford pottery industry as a whole, Young 1977).

Despite this potential the site was only subject to low-level evaluation, comprising a 50% sample magnetometer survey and limited trenching, the latter being carried out by the Oxford Archaeological Unit (OAU) and Tempus Reparatum in 1995 (OAU 1995a; Richmond 1995a; 1995b). A watching brief was then maintained during the construction of the peripheral road for the new housing area (OAU 1995b). Together this work revealed several concentrations of Roman activity, mostly thought to relate to pottery production, spread across much of the development area. An important Iron Age settlement, probably with Bronze Age origins, was also located at the extreme south-eastern corner of the development area.

In the light of these results an 'Extended Master Brief for archaeological mitigation' of the threat to the archaeological deposits posed by the development was prepared by the Oxford Archaeological Advisory Service (OAAS). This document (hereafter 'The Brief'), completed in December 1995, defined a number of areas of particular archaeological importance, including three Zones (C, D and

E) within the main part of the Social Housing development area. Subsequently, separate supplementary briefs were prepared relating to each of these three areas, and on 9th April 1996 OAU was requested to draw up a proposal for the archaeological examination of Zone C, which lies towards the north-eastern corner of the development area. The consequent Written Scheme of Investigation (WSI) was of limited scope in view of the following constraints:

1. The deadline for completion of the on-site work was 8th May.
2. More importantly, the budget for the total operation, including preparation of the WSI and all post-excavation, reporting and archive costs, was pre-set at £8000.

The imposition of these constraints resulted in the establishment of strictly limited objectives for the excavation and subsequent work. The approach adopted was to target resources at the recovery of reasonable quality archaeological data from the ground, usually at a generalised level. The primary objective was therefore seen as the recovery of an overall plan of the examined area(s). Excavation of identified features was to be at the lowest level possible compatible with determining their form, relationships, function and date. The recovery of adequate dating material to allow understanding of the character and development of the site, and of ecofactual material where present, was also considered important. This data was to be presented in an ordered archive, with only very summary reporting at this stage and no detailed analysis of either the stratigraphic sequence or artefactual material. It was felt that adoption of a more formal approach to post-excavation would reduce the resources available for on-site work to the extent that the possibility of recovering any meaningful data would be seriously compromised. In addition, the dissipation of resources in watching brief work was thought likely to absorb a disproportionate amount of the limited resources in relation to the quality of the data that might emerge from such an exercise. No provision was made for such work, therefore.

The present report may be regarded as a summary of the stratigraphic and artefactual record for Zone C. OAAS has expressed the hope that further resources can be made available in due course to facilitate more extensive analysis of the results of the fieldwork, both for Zone C and for Zones D and E.

ZONE C (Fig 1)

Zone C as defined by the OAAS brief covered an area of c 0.5 ha, centred c SP 5442 0217. It was partly examined in evaluation trenching in 1995 by OAU and Tempus Reparatum. This revealed ditches belonging to a possible enclosure or enclosures, perhaps associated with a trackway (in OAU Trench 6), and producing Roman pottery. The character of the latter suggested an association with pottery production and the favoured interpretative model for this area before further excavation commenced saw it as part of a dispersed pottery workshop complex within a system of enclosures. The Tempus Reparatum Trench 8 suggested a concentration of features towards the centre of the Zone. Tempus' Trench 12, at

the western extremity of Zone C, produced very little pottery, suggesting that it lay near the margin of this area of activity.

Zone C was stripped of topsoil by a tracked bulldozer before excavation commenced. This was part of an operation to remove topsoil from the whole development area. The clearance technique, involving the use of inappropriate machinery, at times in poor weather conditions, resulted in a surface in which confident identification of archaeological features was not possible. Superficial inspection showed that a few potential archaeological features were visible, including a possible pottery kiln, but the stripped surface did not allow assessment of the character, density and distribution of features. Recleaning of the surface of the site was therefore necessary.

One consequence of the general topsoil stripping was to render any archaeological features or deposits within Zone C vulnerable to damage by movements of contractors' machinery etc across them, with little indication that features within the footprint of particular proposed buildings would be at significantly greater risk than those outside. Therefore, no attempt was made to target excavation at specific proposed building locations within the Zone.

The initial excavation proposal envisaged re-machining of the area in a series of strips roughly 8-10 m wide aligned east-west across the Zone. These were intended to cover about half the total area of the Zone, with at least some exposure of sample areas right across it, but with effort targeted on the areas of greatest feature density if that appeared appropriate. Flexibility of approach was considered very important. A specific objective was to relocate the features identified in the OAU and Tempus Reparatum evaluation trenches (6 and 8 respectively), if not the positions of the trenches themselves, at an early stage.

In the event some 60% of the Zone was cleared using a 360° machine. The resulting surfaces were planned and further hand cleaning and excavation carried out as far as resources would permit. The excavation took place over a period of some 10 days, during which time progress was hampered periodically by poor weather conditions.

GEOLOGY

The underlying geology of the site, revealed during excavation and by an adjacent engineers' test pit, consisted of silty sand banding (4) beneath blue-grey clay (3). This was overlain by a yellowish-brown fine sandy clay (2). An irregularly curving clay spread (27), at one time thought to be the fill of a cut feature (28) was shown to be convex in section and it was probably an anomaly within the natural subsoils, most likely equivalent to layer 3. Otherwise layer 2 formed the subsoil exposed across most of the site. This deposit was typically c 0.40 m in depth where tested. The subsoil was subject to some local variations in colour, which complicated the identification of soil colour changes as features in some cases.

The site drained poorly and problems were caused by areas of standing water.

When it did dry the sandy clay formed a crusty surface in which significant colour changes were only seen with great difficulty.

THE EXCAVATION (Fig 2)

Summary

An area of very roughly 3000 sq m was exposed in re-machining of the site. Within this area the main Roman features, dating from the 2nd-3rd centuries onwards on the basis of the pottery recovered, were:-

1. A possible, fragmentary ditch system (Phase 1), perhaps dating from the 2nd or 3rd century AD.
2. An enclosure ditch system (Phase 2) dating to the 3rd-4th centuries, although this was only partly revealed within the limits of excavation.
3. Two large pits containing pottery and charcoal fragments.
4. The remains of a probable kiln base.
5. A "U" shaped feature cutting a section of the Roman ditch complex, containing much pottery and some charcoal. This was of unknown purpose but may have been associated with pottery manufacture.
6. A portion of a 'crescent shaped' ditch, also containing much pottery, thought to be associated with (5) above.

Undated and post-medieval/modern features were also located. On the general plan (Fig 2) none of the post-medieval features and selected undated features are numbered, and only cut feature numbers are given.

Archaeological results and sequence

1. Roman features

The principal archaeological features consisted of linear ditches, probably belonging to two phases of a Roman ditch system. Most of the ditches had fills of sandy or silty clay, generally grey or brownish-grey in colour. Distinction between ditch fills, both in plan and section, was therefore difficult. The upper fills of a few ditches were distinctively dark grey, with a relatively high charcoal component.

The ditch/enclosure system

The focus of the ditch system appeared to be a sub-rectangular enclosure, aligned very roughly north-south and east-west, with maximum dimensions of c 35 m east-

west and 40 m north-south. Further ditches ran from this enclosure in various directions.

The western side of the enclosure was formed by ditch 63. The north-west corner lay just beyond the northern limit of the excavated area, but at this point ditch 63 presumably met the east-west aligned ditch 65, located a little further to the east, which formed the northern side of the enclosure. 65 continued further east as ditches 118 and 120. These may have been continuous with 65, the apparent break between 65 and 118 corresponding with the projected alignment of a field drain which may have obscured the earlier features. Ditches 118 and 120 were themselves partly obscured by deposits of yellow clay which may have been of recent date. The eastern end of 120 probably marked the north-east corner of the enclosure (the corner itself lay in a part of the site which was not re-machined), the east side of which was formed by ditch 51. Ditch 51 was continuous with ditch 25 which formed most of the south side of the enclosure, the junction between the two forming a rounded corner south-east corner. Ditch 25 terminated c 6 m short of the south-west corner of the enclosure. There was a gap of just over 1 m, presumably an entrance, between this terminus and the end of ditch 99, which formed the remainder of the south side of the enclosure and then projected some 15 m westward beyond the south-west corner.

The area south of the south-west corner of the enclosure may have been part of an extension of the enclosure scheme, albeit incomplete. A north-south aligned ditch (89) ran c 6.50 m south from ditch 99 starting from a point some 6 m west of the south-west corner of the main enclosure. A slight continuation of the west enclosure ditch (63) also extended 3 m south of the same corner, and further east a more substantial ditch or series of ditches (91, 126) extended 12 m south of the south enclosure ditch (25) before forking irregularly at the extreme southern margin of the excavation and running out of the site.

North of the south-west corner of the main enclosure a roughly east-west aligned ditch (21), of at least two phases, projected c 14 m from the west enclosure ditch. This was roughly parallel to and about 10-11 m distant from the westerly continuation of ditch 99. Ditches 21 and 99 both terminated about the same distance from the west side of the main enclosure and might have formed part of a small subsidiary enclosure, but apparently without a substantial boundary on its west side. A 2.80 m length of an unnumbered ditch-like feature lay between the two termini at an appropriate distance from the west ditch of the main enclosure. This may have been a remnant of the putative west side of the subsidiary enclosure, but this is not certain.

Further elements of ditches were observed to the east of and within the main enclosure. Short, approximately linear features 117, 113 and 115 may have been part of an easterly continuation of the north ditch of the main enclosure at least 10.50 m beyond the north-east corner, but these features were not excavated and their interpretation as ditches is not certain. A comparable ditch (160) extended at least 7.50 m east of the south-east corner of the main enclosure to the edge of the excavated area at this point. The fill of this feature, 161, appeared to be cut by

the main enclosure ditch (25) at the point of junction, but this relationship was not entirely clear.

The main enclosure was divided into two unequal parts by another roughly east-west ditch alignment, like 160 apparently earlier than the main enclosure ditches themselves. The component cuts of this ditch were 5, 7, 16, 29, 57 and 67. This ditch was of fairly uniform profile with 45° sloping sides and a concave base. It was up to c 1.10 m wide, but more commonly between 0.80 and 0.90 m across, and had a maximum surviving depth of 0.30 m, becoming gradually shallower and less distinct towards the east. This ditch was sectioned at its eastern end where it met the eastern main enclosure ditch 51. It appeared to be cut by 51, but distinction between the fills of the two ditches was poor here due to localised flooding.

10 m east of the west side of the main enclosure there was a small gap, about 1 m wide, between ditch segments 7 and 59. The suggestion that this was an entrance was reinforced by the presence of an isolated 4 m length of ditch (101) sited just north of the gap, in the manner of a *titulum*.

The ditch system - phasing (see Fig 3)

Phasing of the ditch sequence is difficult owing to the very limited extent of excavation. Relationships observed principally in plan suggested that the ditch subdividing the enclosure, and ditch 160 running from its south-east corner, were earlier than the enclosure ditches. The possible ditch alignment running east from the north-east corner of the main enclosure should perhaps also be seen with these features since it was comparable to 160 in terms of its spatial relationship with the enclosure. Most of these elements make little sense, however, if divorced from the main system of enclosure and other ditches. They did not form a coherent pattern separately. If they had formed part of an earlier system of enclosures most of the components

of this system had either not survived to be identified in the excavation or, more likely, had been replaced directly by elements of the main enclosure system. While many of the 'Phase 1' ditches appear to have formed an internal boundary within the main enclosure the recorded relationships indicate that this was an earlier, rather than a contemporary feature. It is unclear if it retained any significance during the life of the main enclosure; the location of two large pits on the line of the earlier ditch may indicate that a hollow was still evident at the time the pits were dug, but no more.

The likely extant elements of 'Phase 1' were therefore features 5, 7, 16, 29, 57, 67, 101, 113, 115, 117, 160 and perhaps also the earlier version of ditch 21, represented by fill 23.

Although sectioned at several points only one fragment of pottery was recovered from ditch fills of this phase. This was not closely datable, being assigned to the 2nd century or later.

The 'Phase 2' ditch complex consisted of feature numbers 21, 25, 51, 63, 89, 91, 99,

126, 130 and 65, 118 and 120, comprising the main enclosure with additional elements. Where sectioned these ditches were similar in profile to the Phase 1 ditches but they were generally deeper, at up to 0.52 m deep. The area covered by the Phase 2 ditches may have been more extensive than that occupied by the Phase 1 features, but even this is uncertain.

Pits within the enclosure

Two large pits (11 and 12) lay roughly in the centre of the site. Aligned approximately east-west, both pits cut fills of the underlying Phase 1 ditch (6, 8 and 15). These features (2.70 x 1.00 x 0.30 m and 2.00+ x 1.60 x 0.30 m respectively), initially identified as possible kiln locations on the basis of their charcoal rich fills with much pottery within them, were quarter-sectioned to investigate their nature. The silty clay bottom fills of both pits (14 and 136) contained little charcoal (2% of total make-up) and no pottery, suggesting an initial silting of the features. No sign of in-situ kiln structure was found, although both upper fills contained moderate amounts of fired clay (825 g in context 13 and 895 g in context 9). This would suggest that these features were located in the vicinity of nearby kilns whose debris they contain. This is supported by the evidence of the charcoal within their upper fills and the presence of much pottery, especially at the surface of context 9. The pottery recovered from the top fills (13 and 9) of the features dated from the late 3rd century onwards.

Pottery kiln

Just to the south of the two pits the base of a probable pottery kiln was revealed by the initial re-machining. This feature (10) consisted of a heavily burnt area of clay, with distinctive areas of coloration and charcoal flecking within it (contexts 142-144). The deposit, aligned roughly north-south, occurred patchily over an area 2.50 x 0.90 m, and was at most 0.03 m thick. It included an area of very firm clay which may possibly indicate the position of the base of a pedestal structure. However, the shallowness of the surviving structure and its partial truncation by machining precluded further meaningful excavation.

Features south of the main enclosure

'U' shaped gully

In the southern part of the excavated area a 'U' shaped arrangement of gullies (17, 19, 111, 124 and 137), like pits 11 and 12 further north, was conspicuous because its dark upper fill contained much pottery on the cleaned surface.

This feature cut a north-south aligned projection from the Phase 2 enclosure ditch complex (92, 125 and 132). It consisted of two east-west running linear cuts some 2.50-2.90 m apart, with concave sides and bases, c 3.30 m in length and 0.20 m

deep, becoming slightly deeper towards their eastern ends where they were linked by a north-south running continuation of the cut. The north-south arm cut fills of the enclosure ditch complex, but distinguishing between its fills and those of the enclosure ditch complex here was very difficult, especially at the north-east corner of the feature.

Several sections were taken across this feature but no structure was revealed and there were no indications of in-situ burning. The fills (18, 20, 110, 140) were mostly of silty clay like those of other cut features. Fills 18 and 110 contained very small amounts of fired clay and all except 140 incorporated small limestone fragments.

The function of this feature is uncertain. Possible interpretations of the gullies include:

1. That they were flues for a possible kiln or (more likely) a drier with the principal structural elements above the present archaeological horizon. However a lack of burning/scorching in this area argues against this.
2. That they were cut to form a drain round three sides of a well-defined feature or space which required to be kept dry. This would have been accessed from the west.
3. That they simply formed part of a ditch complex, perhaps together with a crescent-shaped ditch (95) to the south-west (see below), both features having similar charcoal-flecked and pottery rich fills.

Crescent shaped ditch

A 'crescent' shaped ditch (95) at the extreme south of the excavated area may have been associated with the 'U' shaped feature (17, 19 etc) as mentioned above, on the basis of its alignment and the similar nature of its dark upper fill with much pottery. A 10 m length of this ditch was exposed. It had a maximum width of 0.90 m and in section was c 0.30 m deep, flat-bottomed and with steeply sloping sides. The lower fill of the ditch (141) contained only a few sherds dated to the 2nd century or later, while the upper fill (96) contained pottery dating to the 4th century, including one almost complete vessel. It is possible that the two fills, with the earlier located only on the north side of the feature, indicate that the ditch was recut, but this is not certain.

2. Undated features

Possible roundhouse

A group of features situated north of the east end of the 'Phase 1' east-west ditch dividing the main enclosure appeared as possible postholes. These features (71, 73, 75, 77, 79 and 81) formed a rough circle 7-8 m across and it is possible that they were the bases of postholes for a round house. A possible gully (70) just north of these features may have been associated with them. On examination the possible postholes proved to be of shallow and irregular cut. Their interpretation remains

uncertain, therefore.

Other features within the main enclosure

Three possible elongated features, all appearing as soil discolorations on a roughly east-west alignment, lay within the southern half of the main enclosure (83, 83, 135). None of these was examined and their function, if any, is unknown. They could have been short lengths of ditch or perhaps variations in the natural subsoil.

Pits east of main enclosure

Scattered possible features were planned after the re-machining of the site but were not examined further. These included three oval features, 49 and 53 some 3 m east of the east side of the main enclosure, and 39 about 13 m further east. South of these an elongated feature c 2.50 m long and 0.75 m wide (87) lay 2.50 m north of the line of ditch 160 and parallel to it. It is possible that this was segment of a further ditch, but like the similar 'features' within the enclosure (above) it is not certain that any of these were cut features.

3. Modern features

An irregular sided, NNW-SSE aligned linear cut (150) marked the continuation through the site of a modern hedge-line, extant to the south. Its dark brown heavily root disturbed fill was not excavated.

A further short length of east-west aligned ditch (not numbered) cut the west side of the main enclosure towards its north-west corner. The fill of this feature was heavily disturbed by roots and was very similar to the fill of 150. It, too, may indicate the location of a short length of hedge.

Two systems of modern field-drains on slightly different alignments were encountered. One group ran approximately north to south, while the second was on a NNW-SSE alignment, parallel to that of the modern hedge-line. In places material interpreted on site as patchily deposited up-cast from the excavation of these trenches was identified. It is more likely that this represented localised discoloration of the subsoil adjacent to the pipe runs.

The field drains were of variable depth. In some cases pipes were visible at the machined level of the site. In others sections were excavated quickly to prove the function of the narrow linear features as land-drains.

The western end of the excavated area was heavily disturbed by machine tracking, but no obvious features other than land-drains could be distinguished within this area.

THE FINDS

Generally small quantities of finds were recovered during the excavation. Only pottery occurred in significant (though not large) amounts.

The finds except pottery

Artefacts other than pottery consisted of:

2 copper alloy strip/bracelet fragments (SF2 and SF7), from contexts 110 and 132, the former a fill of the U shaped gully, the latter a fill of the adjacent north-south Phase 2 ditch complex.

1 unstratified copper coin (modern).

1 fragmentary iron object, possibly part of a knife blade? (SF10).

7 iron nails.

23 iron studs (hob nails, SF6) from ditch fill 129 at the south-east corner of the U shaped gully.

3 flint flakes (SF3, SF5, SF9), SF5 in a Roman ditch fill (24).

3 tile fragments, 1 small Roman fragment in 110, 2 probably post-medieval ?intrusive in late Roman ditch fills 24 and 96.

Fired clay. Some 116 fragments weighing c 1940 g, recovered from contexts 9, 13, 18, 24, 64 and 110. This was characteristic kiln debris material, mostly structural (ie kiln lining) with no fragments of kiln furniture. Two contexts (13 and 64) had fragments of possible 'dome plates'.

The Pottery

Summary

Just under 23 kg of pottery was recovered. The assemblage was dominated by local products, of which fine wares were most prominent. Mortaria were also well-represented. The material is consistent with production on or immediately adjacent to the site. There was little evidence that any of this activity was earlier than the mid 3rd century, and the emphasis was probably in the 4th century. The majority of the material was of standard types but a few unusual vessels of considerable intrinsic interest were noted.

Quantities and methodology

Some 1179 sherds of Roman pottery, weighing 22.765 kg, were recovered during the excavation. The pottery was scanned very rapidly by context and a paper record was made on the same basis. The material was divided into major ware groups according to the system developed by the Oxford Archaeological Unit (OAU) for recording of Iron Age and Roman material from the region (for a fuller account of some aspects of this system see Booth *et al* 1994, 135-136). In some cases material was identified to the level of individual wares (see below). The pottery was quantified in terms of the ware groupings by sherd count and vessel rim count, and the total weight of pottery in each context was also noted. Vessel types were recorded according to the typologies of Young (1977) where possible, or in terms of the more general form categories defined by the OAU system where it was not possible to assign vessels to specific Young types. At this stage, quantification of vessel types was by rim count only. EVEs measurements should be employed in any further analysis. Limited aspects of decoration were noted, along with an assessment of the date of each group.

Condition

The pottery was in moderate condition. The overall average sherd size (weight), 19.3 g, was boosted in some cases by the presence of relatively large quantities of white ware mortarium sherds, which always have a significantly higher than average sherd weight. A few small groups, in which mortaria were absent, had a relatively low average sherd weight (ie below 10 g).

Many sherds had very poorly preserved surfaces, a function largely of the soil conditions on the site. Because of this it was very difficult to assess the proportion of colour-coated and white-slipped wares, for example, since it is likely that many sherds in these fabrics had lost all traces of their surfaces. A partial solution to this problem is discussed below (see Fabrics). Very few sherds were positively identified as wasters, despite the likelihood that much material derived from pottery production waste. This situation is exactly paralleled, however, amongst material from the production site at Lower Farm, Nuneham Courtenay (Booth *et al* 1994, 135) as well as elsewhere within the Blackbird Leys complex. At Lower Farm, as perhaps also at Blackbird Leys, the principal reason for rejection of pottery may have been underfiring rather than overfiring (only the latter produces distorted vessels). Had this been the case, this would have exacerbated the problem of preservation of the surfaces of sherds which, being relatively soft, would have been more than usually prone to erosion by whatever means.

Fabrics

The pottery fabrics were defined using the OAU system. This works hierarchically, so that it is possible to identify the fabric of a sherds at one of three levels of precision; major ware group, principal subdivision of major ware group, or specific

fabric within major ware group. Much of the Blackbird Leys material, particularly the coarse wares, was identified at the intermediate level of precision. Individual fabrics were identified where possible. The fabrics present on the site, and their codes and quantities, are listed below.

The pottery consisted almost entirely of locally produced fabrics, as would be expected with production derived material. Most of the major products of the Oxfordshire industry were present: white and white- and red-slipped mortarium fabrics, white wares, red colour-coated wares and oxidised and reduced coarse wares. Only one possible sherd of parchment ware were noted, and the same was true of white-slipped ware, though the latter fabric could have been under-represented because of the preservation problems discussed above.

The problem of identification of colour-coated ware (fabric F51, see below) has already been mentioned. Likely sherds of this fabric were examined quite carefully for minute traces of slip. The result of the total erosion of the slip was generally an oxidised sherd, effectively indistinguishable from the majority of oxidised coarse wares (ware group O) in terms of its fabric. In some cases, where such sherds occurred in forms which were characteristic of the F51 repertoire, they were assigned to an intermediate ware category, OF, indicating that, despite the total lack of a colour-coated surface, they were likely originally to have had such a surface. This identification was only possible for certain rim and other very distinctive feature sherds, however, and it is likely that some of the sherds assigned to the general oxidised ware category (ware group O10) were originally colour-coated. A very small number of reduced (unslipped) sherds were thought to be misfired colour-coated products and were similarly coded RF. The total figures for colour-coated ware given below, a combination of those for ware groups F51, OF and RF, probably slightly underestimate the original importance of this ware group.

The wares present in the assemblage, in ware group order, are as follows:

'Fine' (colour-coated) wares

F51. Oxfordshire colour-coated ware. 264 sherds.

OF. Probable Oxfordshire colour-coated ware (see above). 317 sherds.

RF. Probable Oxfordshire colour-coated ware (see above). 4 sherds.

Mortarium fabrics

M22. Oxfordshire white mortarium fabric. 127 sherds.

M31. Oxfordshire white colour-coated fabric (Young 1977, 117, fabric WC). 23 sherds.

M41. Oxfordshire red colour-coated fabric (= F51). 64 sherds.

White wares

W11. Oxfordshire parchment ware. ?1 sherd.

W12. General Oxfordshire white ware, fairly fine. 16 sherds.

W20. Oxfordshire coarse sandy white ware. 9 sherds.

W23. ?Oxfordshire 'burnt white ware' (Young 1977, 113). 27 sherds.

White-slipped ware

Q21. Oxfordshire white-slipped ware. 1 sherd.

Oxidised 'coarse' wares

O10. Oxfordshire fine oxidised ware. 118 sherds.

O80. Oxfordshire coarse-tempered oxidised fabrics. 2 sherds.

Reduced 'coarse' wares

R10. Oxfordshire fine reduced ware. 12 sherds.

R20. Oxfordshire coarse sandy reduced ware. 10 sherds.

R30. Oxfordshire medium sandy reduced ware. 108 sherds.

R50. Oxfordshire medium sandy reduced ware, black surfaces. 15 sherds.

R90. Oxfordshire coarse-tempered reduced fabrics. 2 sherds.

Miscellaneous fabrics

S30. Central Gaulish samian ware. 1 sherds.

F52. Nene Valley colour-coated ware. 2 sherd.

R39. Alice Holt grey ware. 1 sherd.

B11. Black-burnished ware (BB1). 2 sherds.

C11. Shell-tempered ware (late Roman). 51 sherds.

The combined 'fine ware' fabrics totalled almost 50% of all sherds and the mortarium fabrics just over 18%. White wares were relatively scarce and neither oxidised nor reduced coarse wares were very important, though the exact representation of the former is uncertain. Non-local fabrics amounted to 5% of the total sherds. The great majority of these were in the late Roman shell-tempered fabric C11.

Vessel types

The proportions of vessel types represented by rim count (excluding duplicate sherds of the same vessel) were broadly in relation to the importance of the ware groups ie which they occurred. The principal exception to this was in the case of mortaria, which amounted to 26.3% of the total rims, a significantly higher total than for sherd count. White ware mortaria consisted entirely of late 3rd-4th century types: M17 (7), M18 (5), M20 (3) and M22 (22), with a single possible example of M23. As elsewhere at Blackbird Leys the 'earlier' white- and red-slipped mortarium types appeared to be more common than the later ones: C97 outnumbered C100 by 16:2, and WC5 outnumbered WC7 by 8:3. This may indicate a chronological facet of the assemblage.

The range of colour-coated types present was not particularly diagnostic of chronology. The most common types were C45 and C51, the former of which is probably, like the latter, to be seen as in production from the inception of the fine ware range (pace Young 1977, 158). A number of the types represented are dated

after AD 300 by Young, but none of these were particularly common: C68 (1), C71 (3), C81 (4) and C83 (1). C75 and C84, of which single examples were present, are dated after AD 325 and 350 respectively. The dating of C46 to after AD 340 seems less secure; five rims were tentatively assigned to this type.

There were no examples of C45 with stamps, such as were found in the evaluation of this area. Two very unusual colour-coated vessels were present, however. These were what appeared to be a hybrid form C47/75, and a variant of type C9 with a hollow handle and a projection of the neck into the body of the vessel to form a puzzle jug.

The remainder of the assemblage was generally unremarkable. Coarse ware forms were mostly jars, bowls and dishes, though beakers did occur in fabric O10 (it is possible that some of these should have been assigned to OF). Examples of relatively unusual coarse ware types were an R75 (dish?) in fabric R30 and a large O58 (cheese press) in fabric O10. Also apparently in the latter fabric was a substantially complete narrow necked globular beaker not paralleled in Young's corpus.

Chronology

The balance of the fabrics and the great majority of vessels present were assignable to the late 3rd century and later. The evidence of the locally produced material is supported by that of the non-local fabrics, all of which are consistent with a late Roman date and the principal one, C11, is more likely to have occurred in the 4th century than earlier.

In contrast with the situation noted with relation to the various phases of evaluation at Blackbird Leys (Booth 1995a-d), most of which appeared to have a heavy emphasis on the later 3rd century, more of the present assemblage is likely to date to the 4th century AD. This is shown by the proportion of mortarium types, in which M22 outnumbers all the late 3rd century types combined, and also in the higher representation of type C51 vis-a-vis C45, as well as in the presence of a few specific 4th century types. The almost total absence of stamped and painted decoration (the principal exception to the latter being the occurrence of a few examples of type C48) may, however, still indicate a relative if not absolute dearth of activity in the second half of the 4th century.

Thirteen of the 31 contexts which produced pottery had assemblages certainly or probably datable to the 4th century. These included all the large groups from the site (containing almost 75% of the total sherds). Five very small coarse ware groups were possibly of 2nd century date, but these only contained 17 sherds between them and their dating cannot be considered secure. All the other groups (13) can be assigned to the mid 3rd century or later but are not necessarily more closely datable within a range from c AD 250-400.

ECOFACTUAL MATERIAL

Animal bone

Some 310 small fragments of animal bone were counted. This total includes modern breakages, so the original fragment total would have been much lower. Apart from the high degree of fragmentation in some context groups the bone is in reasonable condition. It derives mostly from Roman ditch fills and presumably reflects a domestic rubbish component in the overall finds assemblage.

Carbonised and other plant remains Gregory Campbell

Soil samples were taken from a number of contexts. These were intended to be examined for ecofactual material, particularly carbonised plant remains and charcoal. Such remains were considered potentially important for understanding a number of aspects of the operation of the Roman pottery industry which have hitherto received little consideration, such as woodland management.

Methodology

Four soil samples were selected from those available, to assess preservation of the charred remains. These were processed by mechanical flotation in a modified Siraf machine, with the samples held on a 0.5 mm mesh and the flots caught on a 0.25 mm mesh. The resulting non-floating residues were then separated into fractions sized >10 mm, 10-4 mm and 4-0.5 mm by washing through 10 and 4 mm sieves. The coarse residue fractions were sorted for bone and artefacts and 25% of the 4-0.5 mm residues were retained unsorted. Pre-soaking with sodium carbonate was necessary to break down the high clay content of all the samples.

Charred remains

The flots were assessed by Dr Mark Robinson, head of English Heritage's Environmental Archaeology Unit at Oxford.

The initial samples showed that charred remains are preserved in low concentrations at the site, and may be the result of some small-scale crop processing, possibly in a domestic setting. Only one (SS 1, discussed below) was considered likely to merit further analysis.

SS 1, Context 13: The upper of two fills in an ovoid pit (context 11) produced a flot that was small in size and was especially dirty, containing a great deal of sand and fired clay. The dominant content was wood charcoal, mostly oak (*Quercus*). The small number of seeds preserved (approximately 15 cereal grains, including oat and barley, and some weed seeds including vetch or tare) would be consistent with the late stages of crop processing, possibly in a domestic setting. A small amount of comminuted coal, some of which was coked, may indicate recent contamination.

SS 2, Context 24: This material, from the single fill in ditch 25, was so heavily contaminated by recent herbaceous plant roots that the flot was thought to be waterlogged. It was not, and no seeds either waterlogged or charred were preserved. This flot was discarded.

SS 6, Context 109: The upper of three fills at this point in the shallow ditch 19 = 11 forming an open-sided rectangular enclosure produced a small flot dominated by comminuted charcoal, mostly of oak, with some May-tree-like (*Pomoidaea*) charcoal. The seeds (approximately ten grain seeds including one of a hulled wheat (*Triticum dicoccum/spelta*) and other material (including some threshing debris and a fragment of a stone of plum or cherry (*Prunus*)) would be consistent with the late stages of crop processing possibly in a domestic setting. The flot also contained some amorphous blobs which could be fuel residue.

SS 19, Context 20: The flot was small in size, containing modern roots, wood charcoal too small to be identified, and two unidentifiable cereal grains.

Small fragments of pottery, fired clay and animal bone were recovered from the flots. These tests indicate that while quantities of plant remains are not generally high, the remainder of the unsieved samples have potential to shed light on functional aspects of the site. This work awaits the securing of additional resources.

GENERAL DISCUSSION

The excavation was able to recover some evidence of the character and extent of Roman activity within the area, at a fairly generalised level. The resources available did not permit adequate examination of all feature relationships, or, in some cases, the collection of sufficient dating material to place the chronology of the earlier ditches (for example) on a secure basis. Some possible features were not investigated at all.

Despite this, the general involvement of the site with pottery production is clear, at least in its later phases, but there were also slight indications of a domestic component in the range of activities practised on the site.

Deposit survival on the site was not particularly good. This was indicated by the relatively shallow depth of cut features, by the complete absence of vertical stratigraphy and by the extreme shallowness of the probable kiln structure (10). It was suggested on site that the latter might have been the base of a surface built 'clamp' kiln, but this is very unlikely (see further below). There were two factors which affected preservation as encountered. First, it is likely that there had been some truncation of deposits through post-Roman agricultural activity, the extent of which is reflected in part in the presence of two systems of field drains (additionally it should be noted that one of the drain alignments was very similar to that of the principal Roman features). Second, the amount of damage to and obscuring of deposits caused by the initial topsoil stripping of the site, which seems to have penetrated archaeological strata at least locally, inevitably meant that the

second stage of machining, essential to prepare a relatively clean surface in which features could be observed, probably involved the partial removal of damaged archaeological deposits. These might have survived *in situ* if the stripping had been carried out as a single operation under archaeological supervision and with suitable machinery. One consequence of the necessity for a second phase of machine excavation was that it was not possible to identify the original evaluation trenches on the ground. This was particularly unfortunate since there appeared to be a poor correlation between the features identified in those trenches and the site plan as exposed. It is unclear if this resulted from truncation of features after the evaluation phase (ie that features found in the evaluation did not survive repeated machining) or if there were errors in surveying whereby the evaluation trenches were incorrectly located in relation to the later excavation. It is certainly possible that the linear features recorded in the OAU Trench 6 were related to post-Roman agricultural activity, since they appeared to line up with features revealed in the excavation to be field drains of more than one phase.

The Roman site plan (Fig 3)

As discussed above, there are indications of two phases of Roman ditch digging on the site. Since the ditch which can be most confidently assigned to the earlier phase (ie the east-west feature dividing the enclosure) forms no coherent pattern on its own, it is likely that it formed part of a system of ditches which by definition must have been largely replaced by the Phase 2 arrangement. The only other possible explanations are that elements of the Phase 1 ditch system had existed on different alignments and were either not identified in the excavation, or they had been completely removed by a range of deposit truncation processes. Neither of these possibilities seems very likely.

If the extent of the Phase 1 ditch system is uncertain, so too is its chronology. It may have been of early Roman date, and have been largely superseded in the later 3rd-4th century by the Phase 2 system, or the two phases could have been of relatively short duration and rapid succession. Despite the limited extent of excavation, however, it is likely that the apparent absence of finds from the Phase 1 ditches is significant and indicates that they were filling up before Roman pottery production was taking place, otherwise they would have contained waste material. It is most likely, therefore, that when production did commence here, not before the middle of the 3rd century, the workshop area utilised part of a system of enclosures which was already in place, and may have been in existence for some time. The production was at least contemporary with the Phase 2 ditch system and may have post-dated its establishment.

Pottery production

The main evidence for pottery production on the site consists of the character of the pottery assemblage itself, the probable kiln base (feature 10) and the presence of kiln structural debris in a limited number of contexts. The extent of truncation,

discussed above, does present genuine problems of interpretation, however, since it may have removed completely other features and deposits which would have assisted in the interpretation of the production site, and makes assessment of the scale of production difficult.

The character of kiln base 10, of slightly pyriform plan, is consistent with a standard Oxford industry kiln and serves to indicate the potential extent of truncation. There is no evidence for the use of surface built kilns or clamp firing at any stage in the development of the industry, though the absence of such evidence need not itself be completely conclusive in the present state of knowledge of Oxford kiln types. More importantly, the shape of the surviving fired clay base is consistent with a rounded superstructure with a flue to the north (and presumably a more shallow and thus completely removed stokehole further north again), whereas clamp firing would have produced a simple circular arrangement of burnt clay.

Features associated with pottery production were relatively few. The two large pits just to the north of the kiln were used to contain rubbish derived from it, though this may not have been their primary function. Further features and concentrations of pottery occurred to the south of the enclosure, within what may have been an extension to the original ditch/enclosure system. The 'crescent' ditch and U shaped gully may have been late accretions on the Phase 2 ditch system, or have been broadly integral with it. The function of the U shaped gully, a feature of distinctive plan but apparently unparalleled within the industry, is uncertain. It is perhaps most likely that it served to provide drainage around a feature or installation which it was very important to keep dry, but this is speculative. The suggestion that it might have formed part of a system of flues for a pottery drier is attractive, but is not substantiated by any evidence for in situ burning within the gully itself.

Other activity

A relative concentration of 'domestic' items, including two copper alloy ?bracelet fragments and nails from a shoe, occurred in the vicinity of the U shaped gully, but it is possible that this concentration of material simply reflects a greater amount of excavation in this corner of the site than elsewhere. Further slight indications of domestic activity come from the carbonised plant remains, which suggest "small scale crop processing, possibly in a domestic setting" (above). Understanding of this aspect of the site could be enhanced by examination of further samples. Domestic activity on the site is not incompatible with the presence of pottery manufacture, and the limited evidence suggests that these activities were contemporary.

There was no certain evidence for structures of any kind on the site, either in a domestic or pottery-related context. This may be in large part a function of poor preservation. The presence of a possible round house in the eastern part of the main enclosure is of potential interest, but is far from certain. The component 'postholes' were very shallow and poorly defined. This may indicate that they were

not genuine features and that the apparent circular plan was merely fortuitous. Alternatively, truncation may have left only the very bases of the features in position. The date of such a building, if genuinely present, is uncertain, though it may be seen as relating to the enclosure layout, perhaps of Phase 1. Circular pottery workshop buildings were in use at The Churchill Hospital in the 3rd and 4th centuries, albeit constructed with stone bases rather than in timber. It would not be impossible, therefore, to envisage a circular timber structure in an earlier Roman context, though not (if associated with Phase 1 ditches) necessarily in association with pottery production.

FURTHER WORK

The excavation, despite its many limitations, has demonstrated the presence of a Roman ditch/enclosure system, possibly of 2nd century origin, part of which was utilised by a pottery production workshop in the later 3rd and 4th centuries. This in itself constitutes an important addition to our knowledge of production sites in the Oxford industry and will be particularly valuable when seen alongside the results of other recent excavations in the Blackbird Leys complex. It is emphasised, however, that the resulting picture will be nothing like as complete and detailed as would have been the case had appropriate funding been available to deal with the site.

The present report is a summary. Further work is required in a number of areas.

1. Stratigraphic

More detailed examination of the descriptions of ditch and other feature fills is required in an attempt to demonstrate patterns in the data which may assist in refinement of phasing of the site.

The present site description could be amplified, particularly in terms of presenting details of feature dimensions, profiles and fills.

2. Artefactual

Small finds may need to be examined and reported in more detail.

The pottery requires to be fully recorded. At present recording is in outline only. This will allow more refined analysis and more detailed comparison of the assemblage both with those from other parts of the Blackbird Leys complex and with other recently recorded assemblages within the industry (eg Lower Farm, Nuneham Courtenay).

3. Ecofactual

The remaining soil samples need to be sieved and their contents analysed and reported in order to expand the evidence for and understanding of possible

domestic activity and resource management practises relating to the pottery industry (eg through examination of charcoal).

4. Reporting

The overall report needs to be expanded to take account of the work proposed above. More drawings will be required both to augment the site description and for small finds and, in particular, to illustrate the range of pottery present.

5. Extra-site implications

There is no reason to suppose that the site was a self contained unit; it must have been an integral part of a much wider landscape, opportunities for the examination of which are now limited. In particular it should be noted that the relative density of features and finds at the southern extremity of the present site indicates that further, possibly kiln related activity will have extended into the area to the south of the excavations.

Paul Booth
Bryan Matthews
OAU, July 1996

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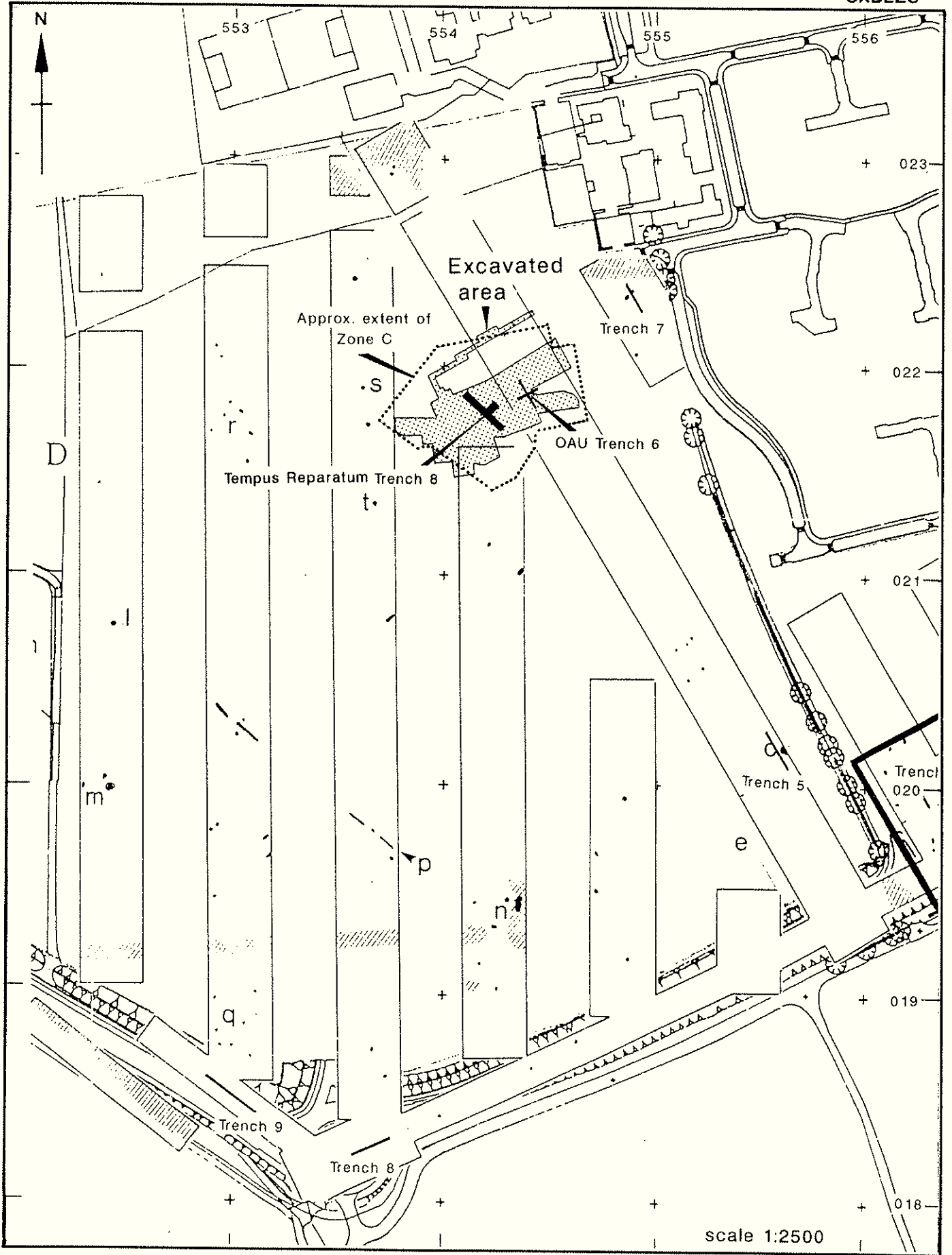


Figure 1

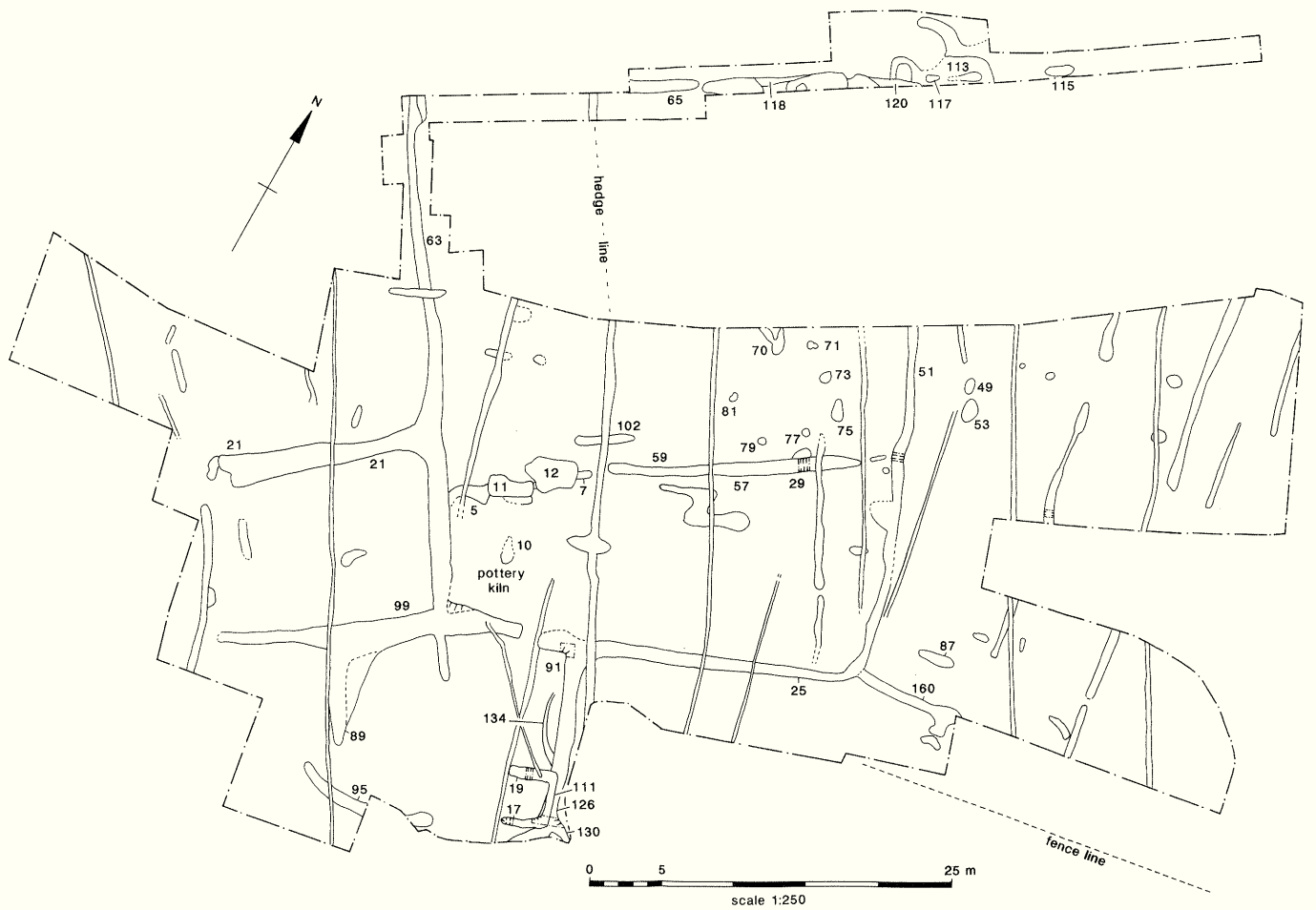


Figure 2

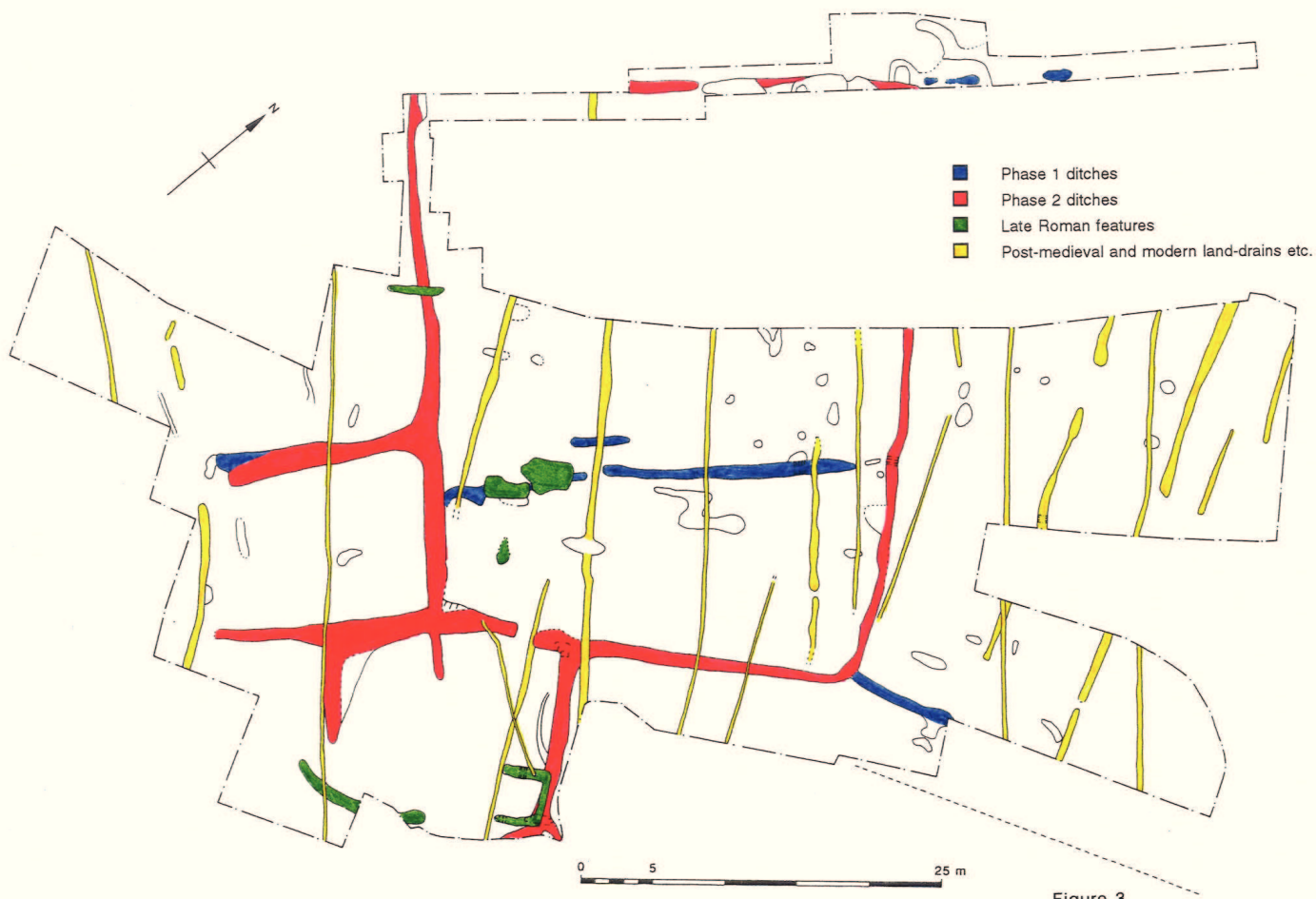


Figure 3



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