

Leicestershire Archaeology

Source: SSL12618

Events: ESL11

MAIDENHEAD, WINDSOR AND ETON FLOOD
ALLEVIATION SCHEME

EKW 79

TRANCHE 2

Monuments: MSL15466

MSL15472

Appendices

Appendix 1: Prehistoric pottery

Neolithic Pottery by A Barclay

Introduction

This report assesses the Neolithic pottery recovered from the Lake End Road West excavations. A small quantity of material from Marsh Lane West is appended at the end of the section. A total of 1811 sherds (c.15 Kg) of pottery was recovered from the excavations. Nearly all of this was recovered from pit deposits and *in situ* surface spreads, while a small proportion represents residual material from later contexts. The total assemblage includes an outstanding group of later Neolithic Peterborough Ware, including some complete vessels. It is estimated that the assemblage of Peterborough Ware may comprise somewhere between 50-100 vessels (at least 105 rims are present). Pit groups contain vessels mostly in the Mortlake substyle, although at least one pit group consisted of Fengate Ware. In addition, an artefact scatter recovered from an excavated hollow produced an assemblage of earlier Neolithic Plain Bowl (at least 10 vessels by rim count).

Methodology

All the pottery was examined, including material recovered from sieving. The assemblage was recorded by ceramic style, fabric and where possible assigned to a chronological period. The assemblage is quantified by sherd count and weight (tabulated below). All of the pottery is recorded to a minimum level in order to provide spot dates. A record was made of visible residues and 13 sherds have been submitted to Bristol University for residue analysis (tabulated below).

Range And Variety Of Material

The assemblage spans a period of at least 1000 years of the Neolithic period - from approximately 3750-2750 cal BC. The Plain Bowl assemblage is likely to date from a developed stage of the early Neolithic and typologically is later than material recovered from the adjacent site of the Eton Rowing Lake and is likely to be contemporary with the use of the probable causewayed enclosure at Dorney. The Peterborough Ware assemblage is likely to have a date range that spans the end of the 4th millennium and the start of the 3rd millennium cal BC (*cf.* Gibson and Kinnes 1997).

Condition

Most of the Neolithic pottery is in a good condition, especially the material recovered from pit deposits. In the case of the Peterborough Ware pottery much of the material appears to be in a fresh condition and at least some of the vessels may have been deliberately broken prior to burial. The general condition of the pottery is due partly to the following factors: Neolithic pits were carefully excavated by hand in order to answer questions relating to practices of deliberate deposition; much of the pottery is hard fired and manufactured from relatively hard flint-tempered fabrics and, in a number of cases, pots appear to have been buried soon after breakage. In general the proportion of vessels present varies from near complete pots to large sherds. Two Peterborough vessels are represented by complete profiles which is of interest given that it is quite unusual to find this level of preservation.

Quantification

A total of 1811 sherds (14.9 Kg) was recovered by hand excavation and from the processing of environmental samples, tabulated below (Note this excludes material selected for residue analysis). Small crumbs and fresh breaks are excluded from the sherd count. To some extent the sieved material inflates the numerical quantification and reduces the average sherd weight. However, this increase in quantity is not likely to be significant.

Fabrics

The Neolithic pottery is manufactured from a range of mostly coarse flint-tempered fabrics. The flint temper is typically angular, sparse and ill-sorted and in general has a different overall texture from the fabrics of later prehistoric pottery. In general the earlier Neolithic fabrics tend to contain significant amounts of quartz sand as well as flint, whilst the Peterborough Ware fabrics tend to contain relatively small or incidental quantities of quartz

sand. In the case of the earlier Neolithic material similar fabrics occur at the adjacent Eton Rowing Lake sites. In certain cases it is impossible to differentiate plain Peterborough Ware from Neolithic bowl on the basis of fabric alone.

Forms: Earlier Neolithic, Plain and Decorated Bowl:

The excavation produced approximately 670 sherds of earlier Neolithic pottery which is characterised by a variety of plain round based bowls. Rims are mostly simple and either out-turned or everted and shoulders are absent. Most of this material was recovered from a pit and an *in situ* surface spread. One decorated rim is from a Mildenhall Ware-style bowl. In terms of form this material has its closest affinities with the assemblage recovered from the Staines causewayed enclosure and is somewhat different in character from the arguably early assemblage of Carinated Bowls recovered from Cannon Hill, Maidenhead and from the assemblages associated with middens from the Eton Rowing Lake (Bradley *et al.* 1976; Barclay in prep).

Forms: Later Neolithic, Peterborough Ware:

The excavation produced approximately 1083 sherds of Peterborough Ware pottery which possibly represents somewhere in the region of 50-100 vessels. Most of this can be identified as belonging to the Mortlake Ware substyle by the generally heavy and expanded rim forms (T-shaped and inturned) and the profuse use of impressed decoration on the rim, neck and body. Forms consist mostly of bowls, although at least one jar is present and other forms (dishes, cups etc may also be present). Most of this material was recovered from nine pit deposits (528, 600, 605, 684, 953, 1050, 1222, 1341, 1434 & 1901). One pit (fill 1900) produced an assemblage of Fengate Ware which was characterised by the presence of heavy collared rims. Additional sherds in this substyle came from context 1342. A small number of simpler Ebbsfleet Ware rim sherds were recovered from contexts 530, 602, 1524, 1584, 1642, 1645 and 1831.

Decoration: Earlier Neolithic

Material of this date was largely characterised by plain pottery recovered from contexts 14, 1517 and 2061 (see table). However, a single decorated rim (context 449) has close affinities with the Mildenhall style which is generally found in East Anglia. Despite its recovery from a later feature this is of interest given the location of the site in the middle Thames Valley. Arguably similar material has been recovered from the enclosures at Staines and Maiden Bower, but this discovery extends the known distribution further west still (Robertson-Mackay 1987; Piggott 1931).

Decoration: Later Neolithic

The Peterborough Ware is typically decorated with horizontal rows of impressed and, or incised decoration (mostly finger-tip/nail, maggot, impressed bone etc). Typically the decoration covers most of the exterior surface, the rim and extends inside as far as the neck. However, one Mortlake Ware vessel deserves further comment as the decoration is notably more complex, being organised into panels or blocks of grooved lines, finger-nail and incised lattice. Perhaps significantly most of this vessel is present suggesting the bowl might have been deliberately smashed.

Residues

Burnt residues were noted on a number of Peterborough Ware sherds. If analysed such residues can provide evidence for vessel function. One Mortlake Ware base sherd appeared to contain limescale indicating that the vessel was used to boil water. Preliminary work by Richard Evershed (Bristol University) suggests that the potential for lipid analysis is excellent. The Lake End Road assemblage would provide an almost unique opportunity to analyse a large assemblage of Peterborough Ware from sealed contexts in which a comparative study of both visible (eg. charred) and invisible (fatty) residues are present. Although a few comparable studies have been undertaken they have tended to focus on either single vessels or relatively small sherds and assemblages.

Discussion and Potential

The assemblage of earlier Neolithic Plain Bowl from the surface scatter is of interest given the discovery of similar deposits of material at the adjacent site of the Eton Rowing Lake. However, the character of the Lake End Road assemblage is somewhat different from that material and typologically could be slightly later in date. Typologically the Lake End Road West earlier Neolithic Plain Bowl is similar to the large and generally undecorated assemblage recovered from the Staines causewayed enclosure (Robertson-Mackay 1987).

The Peterborough Ware assemblage from Lake End Road is of great significance at a national level as relatively few large assemblages of Mortlake Ware have been recovered from modern excavations and the assemblage from Lake End Road West presents a rare opportunity to analyse a significant group of material from stratified features. Relatively few large assemblages of Peterborough ware have been recovered from the Thames Valley or for that matter from southern England generally. Comparable large assemblages come from Yarnton in the Upper Thames Valley, from Baston Manor in north Kent, from the West Kennet long barrow and from the secondary ditch fills of the Windmill Hill, causewayed enclosure (Smith 1973; Piggott 1962; Smith 1965 & unpublished information). It is quite usual within the context of the Thames Valley to find Mortlake and Fengate Ware in pit deposits, while the Ebbsfleet Ware substyle is more frequently found in surface spreads (middens) or from the ditches of earlier monuments, and in terms of context the evidence from Lake End Road West agrees with this pattern.

No significant suitable radiocarbon samples are present (ie. samples large enough for conventional dating). English Heritage has advised that, although accelerator dates could be obtained from samples of hazelnut shells, the date range obtained would be very wide (NB 4600 ± 70 bp calibrates to 3650-3050 at 2σ , which is far too large and will add little to what is already known). No radiocarbon samples will therefore be submitted

Storage and Curation

The excavated material is in a variable condition. Most of the sherds have been carefully bagged and boxed. Most of the more important material has been individually boxed and protected by cushions of acid free tissue paper. This should prevent further breakage over the long term.

Conservation

One unusual Mortlake Ware vessel is in a semi-complete condition and should be restored by a professional conservator.

Proposal For Further Work

Tasks	Description	Duration
1	Recording of pit groups	5 days
2	Data entry and checking	3 days
3	Illustration Complete Peterborough Ware pots (x2) Peterborough Ware (c.130 decorated sherds) Plain Bowl	9 days 50 days 6 days
4	Drawing briefs Check illustrations	2 days 1 day
4	Spatial analysis	2 days
5	Catalogue	1 days
6	Report	5 days
7	Documentation of samples selected for residue Residue analysis (check and integrate results from Evershed report)	1 day
Total	Pottery recording, analysis & report Illustration	20 days 65 days

A breakdown of the Neolithic pottery by style and context. Quantification given as number of sherds and weight.

Cont	Earlier Neolithic						Peterborough Ware								Late Neolithic & LNEBA		Indeterminate prehistoric		MBA		Total		
	Plain Bowl		Decorated Bowl		Probably early Neolithic		Ebbsfleet		Mortlake		Fengate		Indeter. Pet' Ware		No	Wt	No	Wt	No	Wt	No	Wt	
	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	
13									69	203											69	203	
14	171	500																				171	500
15																24	55					24	55
35					3	25							2	9								5	34
37													7	18								7	18
153									1	11			3	21								4	32
175																		1	15			1	15
219																1	4					1	4
231													1	9								1	9
239													2	25								2	25
295	1	12																				1	12
439													1	21								1	21
448	1	4																				1	4
449			1	4																		1	4
529									45	575			39	468								84	1043
530							1	16	35	162			29	239								65	417
531									19	174			26	460								45	634
549													1	15								1	15
601									13	220			38	147								51	367
602							4	9														4	9
603									1	43			13	88								14	131
604													3	5								3	5
605													6	53								6	53
606									35	247			30	389								65	636
685									152	1102			112	167								264	2779
821													1	26								1	26
862															1	2						1	2
865													1	11	8	16						9	27
954									2	15			5	37								7	52

Maidenhead, Windsor and Eton Flood Alleviation Scheme

Cont	Earlier Neolithic						Peterborough Ware						Late Neolithic & LNEBA		Indeterminate prehistoric		MBA		Total			
	Plain Bowl		Decorated Bowl		Probably early Neolithic		Ebbstleet		Mortlake		Fengate		Indeter. Pet' Ware		No	Wt	No	Wt	No	Wt	No	Wt
955									15	92			39	181							54	273
959									67	2797			51	723							118	3520
982															1	14					1	14
1015													2	2							2	2
1066									3	21			4	55							7	76
1072	2	20			1	4							1	11							4	35
1116					2	5															2	5
1223									4	35			24	213							28	248
1224									10	98			25	304							35	402
1225													6	76							6	76
1342									1	10	2	61	20	217							23	288
1356									1	2											1	2
1422					1	1															1	1
1425													1	7							1	7
1433									1	102			3	62							4	164
1517	154	494			86	331			1	7			2	36	1	1	7	3			251	872
1523													19	142							19	142
1524							1	3													1	3
1584							1	1													1	1
1642							3	16													3	16
1645							2	4	2	16			11	19							15	39
1831	3	9			39	51	1	1	2	5			11	14			1	4			57	84
1890	13	81			50	210							8	13	2	2	5	4			78	310
1900												34	238								34	238
1906							2	19													2	19
1930							1	9													1	9
1955									1	4											1	4
1993	9	113			16	84															25	197
1994					1	4															1	4
2061	115	1050																			115	1050

Maidenhead, Windsor and Eton Flood Alleviation Scheme

Cont	Earlier Neolithic						Peterborough Ware						Late Neolithic & LNEBA		Indeterminate prehistoric		MBA		Total				
	Plain Bowl		Decorated Bowl		Probably early Neolithic		Ebbstleet		Mortlake		Fengate		No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	
	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt											No
2080																		2	1			2	1
2145					1	1												1	1			2	2
2151									1	1			3	3						1	1	5	5
2229																		1	10			1	10
Total	469	2283	1	4	200	716	16	78	481	5557	36	299	550	5796	13	35	42	82	2	16	1811	15251	

Residue samples from Lake End Road West excavation: Later Neolithic Mortlake Ware

Sample No	Context	Small find No	Comment
NRA1	959	2054	Mortlake Ware rim and shoulder fragment
NRA2	959	2041	Complete profile - rim sherds, shoulder & base
NRA3	1224	2272	Mortlake Ware rim and shoulder fragment
NRA4	1224	2271	Mortlake Ware rim and shoulder fragment
NRA5	1224	2208	Mortlake Ware rim and shoulder fragment
NRA6	1223	2386	Mortlake Ware rim and shoulder fragment
NRA7	1433	2397	Mortlake Ware rim and shoulder fragment
NRA8	606	2119, 2149, 2163-6	Multiple samples - soil includes body and rim sherds
NRA9	606	1135	Rim and shoulder - this vessel has been washed
NRA10	529	865	Rim and shoulder - this vessel has been washed
NRA11	685	571, 950, 600-1, 1011	Multiple samples - unwashed but handled and kept in paper within plastic
NRA12	1066	2017	Rim and shoulder - has been washed
NRA13	685	772	Base sherd with ?limescale-like deposit on interior surface. Used for boiling water?

Middle Bronze Age Pottery from Lake End Road West by K Smith

The excavation produced 349 sherds of middle Bronze Age pottery weighing 20248 g. All the material can be assigned to the middle Bronze Age Deverel-Rimbury tradition, with a minimum of three vessels, the majority of the material from one context and representing a single Bucket Urn. The assemblage appears to be in generally good condition, with large average sherd weight. Of the three vessels two display complete profiles.

Methodology

The material was quantified by number of sherds and weight (g) with vessel numbers based on rim count. Fabrics were assigned an alpha-numeric code based on the occurrence and size of the principal inclusions.

Quantification by sherd count and weight:

Context	Fabric	No.sherds	Weight (g)
559	F3	261	18990
119	F3	56	218
118	F3	32	1040
Total		349	20248

Fabric

Only one fabric group was observed in this assemblage, a coarse, crushed flint tempered fabric.

Form

Of the three vessels represented two are possibly Bucket Urns and one Globular Urn, both characteristic forms of Deverel-Rimbury tradition. The majority of the material represents a single large bucket urn with applied cordons decorated with finger tip impressions. The cordons are unusual

in that there appears to be a minimum of four vertical cordons extending from the rim to a horizontal cordon around the body. Finger-tip-decorated horizontal cordons also occur at Bray (Cleal 1995), Ashford (Barrett 1973) and appears to be a common form of decoration in the Thames Valley. The closest parallel to the use of vertical cordons at Lake End Road is the use of 'horse-shoe handles' such as at Radley and Stanton Harcourt. Another form represented at Lake End Road is similar to a Globular Urn but occurs in a much coarser fabric than is usual for this form.

Discussion

The small ceramic assemblage from Lake End Road lies within the middle Bronze Age Deverel-Rimbury tradition. Bucket and Globular Urns in middle Bronze Age Deverel-Rimbury tradition do occur in the Thames Valley, and although the material here has been assigned to this group, the material is not entirely characteristic, with the coarse fabric Globular Urn and the unusual decoration of the Bucket Urn. However this is similar to other sites in the Middle Thames Valley, such as at Bray (Cleal 1995), where the ceramic assemblages are within the Deverel-Rimbury tradition, yet show some local variation. The small assemblage from Lake End Road is comparable to other sites in the region such as Eton Rowing Lake (Barclay 1995). The Bucket Urn dates ditch to middle Bronze Age and repeats the pattern seen elsewhere in the region. Although no further study of this assemblage is necessary, it is recommended that the large Bucket Urn undergoes conservation treatment.

Bronze Age Pottery from Marsh Lane (TMOD97) by K Smith

The excavations produced 351 sherds of pottery weighing 4436 g. The majority of the pottery was identified as middle Bronze Age (MBA) and can be assigned to the Deverel-Rimbury tradition. One fabric was identified as early Bronze Age (EBA). The material was quantified by number of sherds and weight (g) with vessel numbers based on rim count and fabrics were recorded following the standard OAU alpha-numeric system. The material contained flint as the primary inclusion, although this showed some variation in both size and occurrence, with shell and occasionally sand or grog occurring as the secondary inclusion. Five vessels were identified by rim count, with Bucket Urns as the only identifiable form. Decoration consisted of finger-tip decoration on rim sherds from context 213, a rim with a notched cordon from context 210 and a shoulder sherd with a cordon recovered from environmental processing (278).

Statement of Potential

The small collection of mostly Deverel-Rimbury pottery recovered from this site adds to the local picture of middle Bronze Age settlement. Similar material has been recorded from other domestic features as well as funerary deposits along the course of the Flood Alleviation Scheme, while comparable material has also been found at the adjacent Eton Rowing Lake excavations. It is recommended that a range of vessels should be illustrated to show the character of the assemblage and any variation.

Further work

Task	Duration
Report:	2 days (inc. catalogue, tables, drawing brief)
Illustration:	2-3 days

Appendix 2: Worked Flint by T Durden

Lake End Road West

A total of 1833 pieces of struck flint was recovered from this site. In addition 129 pieces of burnt unworked flint were recovered as 'small finds' and a large quantity as bulk finds.

The date of lithic material from the site ranges from the earlier Neolithic through to the early/middle Bronze Age, and was recovered from a large number of contexts. A large amount of material was recovered from finds scatter 2, which contained flint of Neolithic and early Bronze Age character. Of particular interest were the nine Neolithic pits, all of which contained some lithic material. Unretouched flakes were the main component, but serrated flakes were also a feature of some of the pit contents. A polished axe fragment was recovered from pit 1050 and a flake from a polished implement from pit 684. It is possible that the contents of at least some of these pits may represent ritual deposits.

Proposed further work

A general quantification and analysis of the lithics from the site as a whole will be carried out. In addition, the material from the Neolithic pits will be quantified, compared and analysed separately, as was done for the Neolithic pits at Taplow Mill Site 1.

Marsh Lane East (contexts 1-165)

Introduction

A total of 1226 pieces of flint were recovered from the southern part of Marsh Lane East (TMOD 97, contexts 1-165). This area, which was excavated during Tranche 2, overlapped with Marsh Lane East Site 1 (Tranche 1). The material from this area (contexts 1-165), is recorded as a separate assemblage to aid incorporation with the Tranche 1 data. The assemblage includes 716 pieces (10,216 g) of burnt, unworked flint. The majority of flint was collected from ditch 95 of mid/late Bronze Age date, and feature 69, a possible Neolithic/early Bronze Age pit. Smaller amounts of flints were collected from a number of other features.

Raw material and condition

The flint used appears to be mostly local flint gravel. This flint varies in colour and translucency and ranges from pale beige to toffee-coloured and dark brown. Some grey and grey/black flint was also present. The cortex is generally thin and worn and pale brown or grey in colour. A small amount of chalk flint was present, recognisable by its dark grey colour and thicker, chalky white cortex. A likely source for this is the Chiltern Hills. Two flakes of Bullhead flint were found in pit 69. Light calcium carbonate encrustation was also noted on some pieces from this feature. All lithic material was in fresh condition and most pieces were uncorticated or bore a light blue/white speckled cortication.

Assemblage Composition

Broad flakes dominate this assemblage, although blades and blade-like flakes form 24.4% of all flake material (excluding chips) which is considerably higher than the 7.1% from the adjoining Tranche 1 site (Marsh Lane East Site 1). This high proportion suggests some significant Mesolithic or earlier Neolithic activity on the site.

Blades and blade-like flakes were more common in pit 69 than in other contexts. Blades and flakes in this context were generally quite thin, with cortical, trimming and inner flakes represented. Hammer mode was a mixture of hard and soft and butts were mostly plain. Narrow and punctiform butts were present, especially on the blade material, and a small number of flakes with faceted butts were also noted. Platform abrasion was present on a small number of flakes, a feature typical of earlier industries and often associated with soft hammer flaking and narrow butts.

Flake morphology was far more varied in other contexts on the site. Broad flakes were most common and ranged from thinner, regularly-shaped flakes to thick, irregular pieces. Blade-like material was less well-

represented than in pit 69. A mixture of hard and soft hammers were used, and plain, broad butts were usual, although cortical butts were also common. In ditch 95 soft hammer flaking was rare and only occasional blades or blade-like pieces were present.

Six rejuvenation flakes were collected, all from pit 69, context 56. These included two core face/edge flakes, two possible core tablets (fragmentary), a crested blade and a flake removing part of a core face and an old platform. The only refitting pieces found were also from this context and comprised two blades (SF 303 and SF 304). Although further refits from the pit were not identified, a number of flakes may have been struck from the same nodules on the basis of identical cortex, colour and technological attributes. The two Bullhead flakes were both cortical and did not refit. One thinning flake was recovered from pit 69, context 57.

Core Types

Of the 14 cores recovered, 4 were from pit 69 and 10 from ditch 95. Struck nodules were the most common type, 4 of these were from ditch 95 and one from pit 69. These were characterised by the removal of a few flakes, often of squat proportions, with no prior preparation of the nodule. The multi-platform flake core and one core fragment were recovered from ditch 95 and the remaining core fragments from pit 69. The blade core was a surface find and was a large example, weighing 115 g. The struck nodules and flake core from ditch 95 would be largely consistent with the type of flakes from that feature, but the lack of well-prepared cores and cores with more blade-like removals from pit 69 is notable. A quartzite hammerstone was also recovered from ditch 95.

A total of 35 retouched pieces were found, forming 6.9% of the struck flint assemblage. This is a similar proportion to that at Marsh Lane East 1. Of this, 6 pieces were from ditch 95 and 21 from pit 69. Simple retouched flakes were the most common type and 12 of these were from pit 69. These were made on a mix of broad and blade-like flakes, consistent with the rest of the flintwork from the pit. Three serrated flakes were recovered from pit 69, one of which had slight edge gloss. One serrated flake was also found in ditch 95.

Three end scrapers were recovered from pit 69 and two side scrapers and an end and side scraper from ditch 95. The other scraper was a horseshoe type from context 16. Also of interest is the laurel leaf from context 7 and an obliquely blunted microlith from ditch 14. The microlith dates to the early Mesolithic and is clearly residual in a Bronze Age ditch. The laurel leaf is typically earlier Neolithic in date, but no other flintwork was found in the same context.

Discussion

The assemblage from the site as a whole would appear to be of Bronze Age date with some Neolithic material mixed in, a large proportion of this originating from pit 69. It is difficult to be more specific regarding date as few diagnostic retouched pieces and cores were present which could be associated with the Bronze Age. An earlier Neolithic component is recognisable through the presence of blade-like material, the laurel leaf and the blade core surface find. Serrated flakes are found in assemblages dating from the Mesolithic to the early Bronze Age, though their presence alongside the debitage from pit 69 could support a Neolithic date for this feature. The relatively high proportion of retouched material, much of it from a possible Neolithic context, would suggest some domestic activity on site in this period. The more irregular nature of the debitage from ditch 95 would support a later date for this feature, perhaps middle Bronze Age. This would be in accordance with the dating for the other ditches at Marsh Lane East Site 1.

Marsh Lane and the M4 Motorway Diversion (Contexts 225-1011)

A total of 274 pieces of flint was recovered from the remainder of Marsh Lane and the M4 Motorway Diversion (TMOD 97, contexts 225-1011), including 106 pieces (502 g) of burnt unworked flint. Approximately 25% (68 pieces) of this total was collected from a tree-throw hole (1010). Smaller numbers of flints were collected from another tree-throw hole 1004 and a large number of other contexts.

Raw material and condition

The flint used appears to be mostly gravel flint which is available locally. This flint varies in colour and translucency and ranges from pale beige to dark brown. Some grey and grey/black flint is also present. The cortex is generally thin and worn and pale brown or grey in colour. A few pieces of chalk flint were present, recognisable by its dark grey colour and thicker, chalky white cortex. A likely source for this is the Chiltern Hills. Three small flakes of Bullhead flint (not refitting) were found in tree-throw pit 1010. All lithic material was in fresh condition and most pieces were uncorticated.

Struck Flint

flakes	blades	blade-like flakes	chips	cores	retouch	waste	total	burnt	broken
78	4	8	53	8	8	9	168	13	68

The assemblage is dominated by broad flakes, with blade-like material infrequent. All of the blades and three of the blade-like flakes came from tree-throw hole 1010. Flakes were generally quite regular, with only small numbers of very thick or irregular flakes. Flakes were struck with a mixture of hard and soft hammers, though soft hammers appear to have been favoured. Plain butts were usual, with a small number of cortical butts. One flake with a faceted butt was recovered from 1010. Platform edge abrasion was noted on a small number of flakes, mostly from tree-throw holes 1010 and 1004. A crested rejuvenation flake was recovered from 1006 (lower fill of 1004) and a core face rejuvenation flake from 1009 (lower fill of 1010).

Of the eight cores, five were crude tested nodules. A single-platformed flake core was recovered from 321 and a multi-platformed flake core from 1008 (upper fill of 1010). Both were fairly crude and showed the scars of hinged removals. A small core fragment was found in context 252.

Apart from an end scraper from context 314, a serrated flake from 321 and a possible serrated flake (very burnt and broken) from context 250, the remainder of retouched pieces were recovered from the two tree-throw holes. A possible broken and burnt serrated flake and a simple edge-retouched flake were recovered from 1006, and a leaf-shaped arrowhead, chisel arrowhead and possible truncated flake from 1008.

Discussion

The presence of crude flake cores and a chisel arrowhead would suggest a later Neolithic date for the lithics. This could be supported by the relatively low proportion of blade-like material. However, the fact that many flakes were regular, thin and struck with a soft hammer could indicate an earlier Neolithic date for some of the material, supported by the presence of the leaf-shaped arrowhead. The presence of two arrowheads of different dates in one fill of tree-throw hole 1010 may be a coincidence, though it is possible the earlier piece was residual on the site or specially retained and selected for deposition with the other arrowhead. Neolithic, possibly earlier Neolithic, material was also recovered from the other part of this site (contexts 1-165). Bronze Age flintwork was also found on the other part of the site, though lithics of this date were not in evidence on the part of the site currently under discussion.

Further work

Task	Duration
Report, drawing briefs, LERW97, ALE97, TMOD97	9 days
Illustration	10 days
Use-wear analysis	7 days

Appendix 3: Iron Age and Roman pottery

Lake End Road West by J Timby

Introduction

An assemblage of some 5688 sherds weighing 67.5 Kg was assessed to establish the likely Iron Age and Romano-British chronology of the site. The majority of the earlier Prehistoric and Saxon material was separated from the assemblage prior to the assessment. The small number of additional sherds of both periods which were identified among the Iron Age and Roman material have been incorporated into the relevant datasets. The assemblage was assessed without reference to context information other than feature identification.

With the exception of one particularly large assemblage from pit 1352 most of the groups were very small, being distributed across some 423 contexts. If pit 1352 is removed from the equation this gives an average of less than 10 sherds per context. In reality 65% of the contexts produced fewer than five sherds, and a further 11% between 6 and 10 sherds. Only six contexts yielded 100 sherds or more. This, combined with the long chronology of the site has obvious ramifications with regard the dating of individual groups. It is also evident from some of the larger groups that there are several redeposited sherds. Any dating provided at present must be regarded as provisional in the expectation that the stratigraphic association of contexts and the presence of other artefacts may help refine, or 'redefine', some of the more elusive groups.

The assemblage was sorted into fabric types based on the principal inclusions present. The fabrics were given an alpha-numeric code and quantified by sherd count, weight and estimated vessel equivalent where appropriate for each context. The information has been incorporated into the site database.

In broad terms the assemblage can be split into early/ middle Iron Age and Late Iron Age and Roman, and is dealt with under these two headings. Some 347 sherds belonging to the earlier Prehistoric period, 49 sherds of likely Saxon date and 10 sherds of medieval/post-medieval date have been removed from the Iron Age and Roman assessment records and incorporated into the appropriate datasets, as has a small quantity of fired clay and Roman tile. Very small fragments of pottery of less than 10 mm were subsumed into a general category (OO).

Early/ middle Iron Age

Approximately 25% of the assemblage dates from the Iron Age. A variety of fabric types are present including flint, sand and flint, sandy, sand and organic, sand and iron, calcareous, and calcareous with iron wares. Some of the fabrics, notably the flint-tempered ones, proved quite difficult to classify as a very similar range reoccur in the late Iron Age and early Roman periods. Similarly much of the Neolithic material is flint-tempered although this is distinctively coarse. Most of the prehistoric flint fabrics included here are unfeatured, the only three exceptions being a burnished carinated sherd from 305, a fineware carinated sherd from 28 and a globular-bodied jar from 10, all suggestive of an early Iron Age date. It is possible that some of the calcined flint-tempered material dates back to the Bronze Age although none of the sherds had a wall thickness suggestive of urn material. Several sherds were characterised by finger-tipping either on the rim or body of the vessel (fabrics SO, SI, FI, LI2) a feature characteristic of early Iron Age material from the locality. A small number of fineware tri-partite bowls with burnished surface finish were present in sandy wares (S2) and are also likely to date from the same period. Only one sherd was present with incised decoration (2221) and one with tooled line decoration (2150).

Although difficult to identify typologically the significant number of sandy wares would imply continued occupation into the middle Iron Age. A burnished straight-sided vessel loosely related to the saucepan-pot style from (156) is one of the few recognisable examples suggestive of a middle Iron Age presence. It has been observed elsewhere that sandy fabrics tend to increase at the expense of coarse flint-tempered sherds towards the end of the later Bronze Age and into the Iron Age (Morris and Mephram 1995, 81). At Lake End Road flint-tempered wares account for c. 18% by weight, 19% by count, sandy wares for

16% by weight, 26% by count and sand and flint-tempered wares for 49% by weight, 30% by count. Initially it would seem that most of the occupation dates to the early Iron Age with a small amount of middle Iron Age, perhaps indicating a shift in the focus of activity on the site. It is notable that the majority of early Iron Age sherds were recovered from the western end of the site, in particular from a tightly spaced cluster of pits. The few identifiable middle Iron Age sherds occurred mainly at the eastern end of the site, in the area of the late Iron Age and early Roman settlement.

There are several sites from the general locality with contemporary assemblages which would be worth comparison, for example, Jewson's Yard, Uxbridge (Barclay *et al* 1995) (LBA-MIA); Heathrow (LBA-EIA) (Grimes and Close-Brooks 1993); Stanwell (O'Connell 1990) and Snowy Fielder Way, Isleworth (Bell 1998) amongst others.

Later Iron Age and Roman

The bulk of the assemblage dates to the later Iron Age - early Roman period with a small quantity of material of later Roman date. There is no obvious transition from the later Iron Age through into the Roman period and new wares of 'Roman type' do not start to appear until the post-Flavian period.

The assemblage is very much dominated by locally produced wares, particularly grog-tempered and to a lesser extent flint-tempered fabrics. Accompanying these however, are a very diverse range of other fabrics including organic, sand, shell, grog and sand, and ferruginous types and various composite mixtures. In total some 24 fabrics have been defined. The vessel repertoire is very limited, mainly large jars, beaded-rims jars and necked bowls/jars in handmade, wheel-turned and wheelmade forms. There is a noticeable lack of any finewares suggesting little regional contact until the Flavian period. Amongst the traded wares beginning to appear in the later 1st century are products from the London and Verulamium kilns. The former includes a rare decorated strainer spill plate from the Highgate Wood kilns (Davies *et al* 1994, 75ff). The Dorney piece is in the red-slipped version of the grog-tempered fabric (HWBR) and comes from a vessel akin to Camulodunum type 322/3 (Hull 1958). An unpublished paper by Paul Sealey on an identical example from the Highgate Wood kilns, albeit with a different decorative scheme, draws attention to the derivation of the form from a metal prototype and its likely indigenous pedigree in the British late Iron Age. The vessel is likely to date to the period AD 70-100. The only other fine wares likely to date to the later 1st century are two sherds of whiteware butt beaker (264, 966), a very fine orange ware not dissimilar to the Abingdon finewares (967) and a Samian dish (Drag 18) (933).

This kind of assemblage is becoming increasingly familiar in the area and there are now many other sites of this general date known, for example, sites in the Kennet Valley to the east such as Aldermaston (Cowell *et al.* 1978), Ufton Nervet (Manning 1974), Pingewood (Johnston 1985), Wickhams Field, Reading (Crockett 1996), Little Lea, and sites along the Thames valley such as Park Farm, Binfield (Booth 1995), Bath Road, Slough (Timby 1997a), Lower Horton (Timby 1997b), Remenham (Timby 1997c) and Knowl Hill (Over 1973) amongst others. None of these sites exhibit the diversity of traded /imported wares seen at Silchester during the same period. The wares from the 'rural' sites are generally dominated by jars of which larger storage jars are a significant feature.

In the early 2nd century further possible products of the Highgate kilns are present (HWC), mainly fine grey sandy beakers with barbotine panel decoration and necked jars. A small number of Verulamium flagon sherds (VER) are also present, dating from c 70-140. A particularly large assemblage of material was recovered from pit 1352, amounting to some 1539 sherds. The group is unusual in composition with a large number of overfired thick-walled bodysherds from one or more large storage jars and a particularly high number of grey sandy ware, rounded hammer-head bowls. Several plain-rimmed dishes are also present. Accompanying the greywares were a small number of Samian sherds (Drag 31, 33, 38), a single BB1 grooved rim bowl, fine white-slipped oxidised wares, and plain oxidised wares including a ring-necked flagon. The low proportion of standard jar sherds is notable and the pit group as a whole does not represent a typical rubbish deposit. Hammer-head bowls feature prominently in the products from the Highgate kilns, London in the first half of the 2nd century AD (Davies *et al.* 1994, 88). The Dorney examples show a distinctive undercutting on the internal face not present on the London examples and are probably the products of the Colne Valley industry (eg.

Fulmer/Hedgerley/Gerrards Cross). The latest sherd, if not intrusive, is the single BB1 piece which must be late 2nd/early 3rd century. Most of the wares however, are suggestive of a mid 2nd century *terminus post quem* for this feature.

Other 2nd century wares from the assemblage include a small number of mica-slipped pieces, possibly made locally at Staines, two sherds of Dressel 20 amphorae and three pieces of mortaria. Most of the group is dominated by a large number of non-distinctive grey and black sandy wares which appear to be mainly local, with a small proportion of probable Alice Holt products. There is a small scatter of pieces which could suggest a non-intensive 3rd century presence, in particular Oxfordshire whiteware mortaria, and then a small but more distinctive later 3rd-4th century assemblage characterised by Alice Holt greywares, BB1 flanged bowls and Oxford colour-coated wares.

Potential

The Iron Age and Roman pottery groups, whilst not exceptional *per se*, are a valuable addition to the growing number of published and unpublished sites of similar date from the locality. Comparison of the wares across these sites is beginning to show both similarities and differences and distinctive regional patterns are beginning to emerge in both the early Iron Age and late Iron Age/early Roman periods.

The Roman assemblage shows some interesting features, notably the large pit group which has a slightly unusual assemblage, some elements of which might even suggest waster material. In addition there is a rare spill plate whose presence not only emphasises the Iron Age character of the Roman assemblage, but suggests developing trading contacts with London. The lack of amphorae suggesting no demand for oil and wine, and the absence of fine tablewares in the early Roman period implies an adherence to traditional dietary and culinary habits.

It is therefore, recommended that the later Prehistoric and early Roman material is published in detail and comparisons made across the region with other published or accessible sites.

Further work

In the time allowed to date it has only been possible to go through the material once. The database highlights a number of problems which will require re-examination of some of the material. It is possible that many of these will be easily resolved as redeposited sherds, or that certain fabrics will need redefining. Assessment against the site data will also be essential. No attempt was made at this stage to look for cross-context joins.

The M4 Motorway Diversion by K Smith

The excavation produced 134 sherds weighing 658 g. A rapid assessment and quantification (number of sherds and weight) of the assemblage was undertaken. The assemblage appears to span the later Pre-Roman Iron Age (LPRIA) to possibly the 2nd century AD, although the later date is based on the only Roman material recovered (context 612), comprising 3 sherds of a grey sandy fabric and 2 sherds with organic inclusions. The majority of LPRIA fabrics are either grog (48.5% by sherd count of assemblage) or flint tempered (41.8% by sherd count) and up to 8 vessels are represented by rim count. Further characterisation of the material will be required to distinguish which side of the conquest this material lies. For example, a sherd from context 610 occurs in a flint fabric but in a Roman form. Of particular interest are two Butt Beakers, both from context 614. Although this is a small assemblage, further study is recommended to determine its relationship to other assemblages in the region and to refine the dating of features within the site.

Task	Duration
Analysis, report, drawing briefs (LERW97)	9 days
Analysis, report, drawing briefs (TMOD97)	1 day
Illustrations	7.5 days

Appendix 4: Saxon pottery by P Blinkhorn

The Saxon pottery assemblage from Lake End Road West comprised 673 sherds weighing 14,048 g. The bulk of the assemblage comprised three hand-made fabrics, as follows:

Fabric 1: Chaff-tempered. Moderate to dense chaff voids up to 5 mm, with rare to sparse round calcareous material up to 3 mm, sub-round quartz and ironstone up to 1mm. 407 sherds, 7,901g, 6.97 EVE.

Fabric 2: Quartz tempered. Dense, sub-angular white quartzite c. 0.5 mm. Rare rounded black ironstone up to 2 mm. 218 sherds, 4,942 g, 2.14 EVE.

Fabric 3: Calcareous gravel tempered. Moderate to dense clear and iron-coated quartz up to 1 mm, rounded black ironstone up to 2 mm, calcareous material (including ?ooliths) up to 1 mm. 27 sherds, 914g, 0.65 EVE.

There were also a series of regional and continental imported wares:

Ipswich Ware: Middle Saxon, slow-wheel made ware, manufactured exclusively in the eponymous Suffolk *wic*. Occurs in a series of quartz-tempered fabrics (Blinkhorn in prep a). Probably had a currency of 8th century to early 9th century at sites outside East Anglia. Three sherds, 69 g, 0 EVE.

Continental imports: A range of sand-tempered, wheel-thrown, mainly 8th century 'Frankish' wares, and sherds from a single Rhenish Tating ware vessel. 18 sherds, 496 g, 0.23 EVE.

The occurrence per context by fabric and number and weight of sherds is shown in the table below.

The Assemblage in its National Context

There are a number of reasons why the pottery assemblage from Lake End Road is highly significant in both a regional and a national context:

The presence of the three sherds of Ipswich ware at the site not only confirms that the site had a middle Saxon component, but that it was also involved in the burgeoning trade network of the period. The material has by far the widest distribution of any native pottery type of the period, occurring across eastern England from York to Kent, with the river valleys of the south-east midlands showing the greatest penetration of the ware inland. The material invariably occurs at high-status sites within its distribution, but cannot be taken as an indicator of high status, although the further the location of the findspot from the production centre, the more likely that the site was once of high status (Blinkhorn in prep b).

The possible significance of the Lake End Road assemblage is perhaps best illustrated by the fact that the only other known findspots in the Thames Valley upstream from *Lundenwic* are Old Windsor, Berks, a Saxon royal estate centre (Wilson and Hurst 1958, 183-5), Eynsham Abbey, Oxon., a minster church (Blinkhorn in prep c), and Yarnton, Oxon. (Blinkhorn in prep d). Of these, only Yarnton appears to have been of lesser status, and it appears nationally that imported pottery, not Ipswich ware, is the key to a site's status. For example, the few sites in the hinterland which have been excavated and produced Ipswich ware but not imported material are farmsteads such as Yarnton (*op. cit.*), Pennylands, Bucks (Blinkhorn 1993) and North Raunds, Northants (Blinkhorn in prep e).

Imported pottery is not an unusual occurrence in the *wics* of the period such as Southampton (Timby 1988), London (Blackmore 1988, 1989; Vince 1988, 1990) and Ipswich (Wade 1988). However it is considerably rarer find at sites in the hinterland (Blinkhorn in print a & b). Such wares occur, mainly in small quantities (ie. fewer than ten vessels), at sites with a significant ecclesiastical component such as North Elmham Minster, Norfolk (Wade 1980), which was one of the bishoprics of the Episcopal see of East Anglia, and Barking Abbey, Essex (Redknap 1991), or at royal estates such as Old Windsor or

Wicken Bonhunt, Essex (Wade, forthcoming). Occasional sherds occur at rural sites such as Terrington St. Clement, Norfolk (A Rogerson *pers. comm.*) and Riby Crossroads, Lincs., (Steedman 1994) but most, if not all of these are largely unexcavated, and their true nature is far from understood.

The imported pottery assemblage from Lake End Road is, the *wics* aside, one of the largest known from anywhere in England. There are sherds from at least five vessels, four of which are French and the other Rhenish. The Rhenish sherds, Tating ware, are particularly significant, as only a handful of such vessels have been found at sites outside the *wics*, with notable finds being made at Old Windsor (Dunning et. al. 1959, fig. 24) North Elmham and the probable royal centre at Wharram Percy, North Yorks. (A. Slowikowski *pers. comm.*). Such vessels, with their applied tinfoil decoration, have been linked with liturgical activity in the past, although there is no definite evidence that this was the case.

Potential

The fact that the Saxon royal centre of Old Windsor is so near to this site, and the quality of the non-local pottery assemblage makes it likely that the Lake End Road site is part of that royal estate. The analysis of the material should reflect this.

The pottery assemblage also has the potential to offer some insights into the mechanics of the trade systems of the middle Saxon period. Whilst the trade and manufacturing mechanisms of the *wics* have a degree of clarity (eg. Hodges 1982; Hodges and Hobley 1988) the trade systems of the hinterlands, and their relationships to the coastal trade centres are far from clear (Blinkhorn, in prep b). It is not known if sites such as Lake End Road received their imported goods directly from the merchants, or if they came from the emporia themselves, with, in this case, *Lundenwic* being the obvious candidate.

There is some evidence from surviving Anglo-Saxon law codes and documentary records that trade was strictly controlled, and limited to the emporia and other designated market-places, but the Lake End Road site has the potential to offer archaeological clarification of the situation. The predominant pottery type at this site, chaff-tempered ware, appears very similar to that of *Lundenwic*. As quantities of Ipswich ware and imported wares are also known from the site, and these wares occur in significant quantities in London, it would therefore suggest that Lake End Road may have been receiving all its pottery from that *wic*.

Only the Ipswich ware and imported vessels can be dated within a reasonably limited period. Undecorated, handmade pottery such as that which makes up the bulk of the Lake End Road assemblage had a general currency of AD 450-850 in England, although the lack of decorated wares from the site suggests a more likely date range of AD 600-850. However, the presence of other dateable artefact types from the site means that it may be possible to date the pottery assemblages more closely. The fact that there are two main domestic fabrics, F1 and F2 means that, with additional chronological information, it may be possible to identify trends in pottery use and supply at the site over time.

Cross-join analysis may be of value. The majority of the Anglo-Saxon features at the site are non-structural, and their exact function is, at this time, unclear. Examination of cross-joins both within features and across the site may shed some light on how these features related to each other. There is increasing evidence that Sunken featured buildings were backfilled in a single event with domestic rubbish once they had fallen from use, with the same source being used for more than one structure. The Lake End Road pits may yield similar evidence.

A single vessel, of which two large sherds were found in the primary fill of pit 1056 (context 1158), has provisionally been identified as an early medieval grog-tempered ware spouted pitcher. These occur in London in very small quantities in mid to late 11th century contexts (Vince 1989).

Quantification of Early/middle Saxon Pottery from Lake End Road West (by sherd count and weight per context)

Context	F1	F2	F3	Ipswich ware	Import	Period	Chronology	Comments
9		1 (42)				E/MS		
13	1 (7)					E/MS		
71					5 (115)	MS	8thC?	French blackware
83	1 (12)					E/MS		
166		1 (33)				E/MS		
180	1 (25)					E/MS		
187	32 (810)	3 (100)		1 (47)	1 (9)	MS	725x740-E9thC	French blackware
205	1 (18)					E/MS		
207	3 (16)					E/MS		
259	9 (149)	1 (8)				E/MS		
276	3 (19)	2 (13)				E/MS		
277	1 (6)	1 (6)			1 (3)	MS	8thC?	French?
310	1 (53)					E/MS		
326		1 (8)				E/MS		
343		8 (96)				E/MS		
345	1 (8)	8 (118)				E/MS		
357		1 (11)				E/MS		
366		1 (16)				E/MS		
405		3 (38)				E/MS		
406	1 (10)	2 (40)				E/MS		
423		2 (16)				E/MS		
441	2 (29)	1 (29)				E/MS		
475	1 (16)				1 (27)	MS	8thC?	French?
478		1 (10)				E/MS		
555	2 (19)	1 (83)				E/MS		
556	2 (28)					E/MS		
575		1 (24)				E/MS		upright pierced lug
582	23 (563)	5 (64)	1 (32)			E/MS		large rod handle
585	1 (3)					E/MS		
611	1 (20)					E/MS		
698	4 (63)					E/MS		
710	6 (61)					E/MS		
751	1 (6)	1 (5)				E/MS		
761	1 (57)					E/MS		
787	1 (7)				2 (35)	MS	8thC?	French blackware-joins with 187
815		1 (10)				E/MS		
822	2 (17)					E/MS		
848	8 (226)	1 (10)				E/MS		
879	7 (95)	1 (13)				E/MS		
880	1 (4)					E/MS		
890	1 (15)	2 (35)				E/MS		
946	2 (21)	3 (73)				E/MS		
964		1 (179)			1 (177)	MS	8thC?	French brownware pitcher
976	1 (4)					E/MS		
993	3 (33)					E/MS		
1016	1 (16)	3 (51)	2 (10)			E/MS		
1057	21 (293)	2 (35)				E/MS		
1064		1 (40)				E/MS		

Context	F1	F2	F3	Ipswich ware	Import	Period	Chronology	Comments
1083	2 (146)	1 (7)				E/MS		
1084	2 (56)			1 (3)		MS	8th-E9thC	
1086	9 (163)	6 (506)				E/MS		
1097	1 (2)					E/MS		
1125		3 (17)				E/MS		
1130	3 (49)					E/MS		
1135	4 (143)					E/MS		
1158	1 (2)					E/MS		
1162	1 (18)					E/MS		
1169	1 (22)	2 (9)				E/MS		
1171	1 (36)		1 (16)			E/MS		
1187	4 (22)	1 (3)				E/MS		
1202	8 (86)					E/MS		
1232	2 (55)					E/MS		
1235	1 (1)					E/MS		
1236					1 (36)	MS	8thC?	Tating??
1237	7 (87)					E/MS		
1285	3 (50)	13 (478)				E/MS		
1323		2 (8)				E/MS		
1304	2 (18)				2 (9)	MS	8thC?	Tating??-same as 1236
1340	1 (3)					E/MS		
1343	3 (39)					E/MS		
1346	10 (248)					E/MS		
1347	19 (284)	1 (12)				E/MS		joins with 1346
1354	1 (7)					E/MS		
1361	1 (35)					E/MS		
1362	1 (8)	1 (5)				E/MS		joins with 1378
1366	2 (78)					E/MS		
1377	5 (105)	6 (111)				E/MS		
1378	6 (167)	1 (20)				E/MS		
1381	1 (42)	1 (10)				E/MS		
1394	1 (41)	6 (91)				E/MS		
1397	1 (5)					E/MS		
1400		2 (65)				E/MS		
1403		1 (17)				E/MS		
1413		4 (13)				E/MS		
1425		36 (915)				E/MS		
1426		2 (34)				E/MS		
1432		1 (24)				E/MS		
1443	3 (106)	1 (2)				E/MS		
1445	4 (85)	1 (21)				E/MS		
1448	1 (8)	1 (38)				E/MS		
1516	1 (32)	1 (2)		1 (19)		MS	8th-E9thC	
1540		8 (229)				E/MS		
1594	42 (870)	1 (5)	10 (534)			E/MS		
1615	1 (126)					E/MS		
1654		1 (6)				E/MS		
1655	2 (9)					E/MS		
1668		1 (84)				E/MS		

Context	F1	F2	F3	Ipswich ware	Import	Period	Chronology	Comments
1671	8 (180)	2 (33)	7 (276)			E/MS		
1690		2 (30)				E/MS		
1697	1 (36)					E/MS		
1701	6 (37)	1 (31)				E/MS		
1702	3 (35)					E/MS		
1712	1 (49)					E/MS		
1725		1 (5)				E/MS		
1733		1 (29)				E/MS		
1735	2 (39)	5 (74)				E/MS		
1746	5 (63)					E/MS		
1747	5 (107)	1 (22)				E/MS		
1758	1 (11)					E/MS		
1781	5 (65)					E/MS		
1782	2 (58)	1 (7)				E/MS		
1783	3 (44)					E/MS		
1808		1 (7)				E/MS		
1812	2 (44)	1 (7)				E/MS		
1834	1 (6)					E/MS		
1835	??1836	1 (10)				E/MS		
1836		1 (20)				E/MS		
1852	1 (3)					E/MS		
1856		1 (3)				E/MS		
1858	2 (322)					E/MS		
1910	5 (134)					E/MS		
1917		1 (38)				E/MS		
1924		1 (23)				E/MS		
1927	1 (5)	2 (150)				E/MS		
1945	5 (60)					E/MS		
1949	1 (2)					E/MS		
1962		11 (231)				E/MS		
1991		2 (45)				E/MS		
2168	3 (72)					E/MS		
2170	5 (48)					E/MS		
2175		1 (6)				E/MS		
2185	1 (14)	3 (7)				E/MS		
2262	1 (6)					E/MS		
2278	1 (19)					E/MS		

Further work

Task	Duration
Analysis, report, drawing briefs	5 days
Incorporation with previous reports	2 days
Illustration	5 days

Appendix 5: Reassessment of pottery and flint from TVAS Evaluations, 1991 and flint from fieldwalking, by P Booth and T Durden

Pottery from TVAS evaluations 1991, by P Booth

Introduction

The pottery recovered by TVAS in the 1991 evaluations on this scheme was catalogued in terms of sherd count and period in the evaluation report. Subsequently, reservations were expressed about the dating given for some of this material, so the pottery has been re-assessed to determine the extent of the problem.

The following comments are based upon this exercise and the resulting annotations of the catalogue lists. They do not take account of remarks in the main text of the evaluation report.

The pottery by period

The pottery ranged in date from Neolithic to post-medieval. The majority of identifications were found to be reasonable. Dating was expressed with varying degrees of precision - for example the broad term 'Prehistoric' was quite widely used. The degree of uncertainty about identifications expressed in this way is certainly understandable, particularly in this region where the use of flint tempering was widespread in a number of quite distinct periods, but it is felt that such identifications could have been more precise in some cases. Comments on the TVAS identifications are arranged in chronological order.

Neolithic

A small quantity of Neolithic pottery was identified in Areas B and D and possibly in Area E, both early and late Neolithic material coming from Area B and a few sherds of possible early Neolithic date from Area D. None of this material was identified in the TVAS catalogue, where it was all assigned to the late Bronze Age on the basis of the flint-tempered fabric and what was seen as characteristic late Bronze Age finger nail decoration. The occurrence of sherds with notably ill-sorted flint inclusions, of occasional decorated fragments and a characteristic everted rim strongly support the Neolithic dating of some of this material, however. On this basis it is impossible to say how many of the undiagnostic flint tempered body sherds might have been of this date.

Bronze Age

A very few (grog-tempered) sherds were potentially of early Bronze Age date, and a larger (but still small) amount of flint-tempered material was assigned to the middle Bronze Age. These identifications appear unproblematical. While it is very likely that at least some of the other flint-tempered sherds were of late Bronze Age date there were few diagnostic pieces of this date, particularly once some of the sherds assigned to this period were reidentified as Neolithic. Undiagnostic flint-tempered sherds were particularly common in Areas B, D and F. Consequently the number of 'Prehistoric' contexts was highest in these areas.

Iron Age

Iron Age material was concentrated in Area G, where it was quite common. The TVAS catalogue does not usually distinguish between early and middle Iron Age, but this is probably reasonable since the majority of these sherds do not appear to be closely attributable. Rim forms of both early and middle Iron Age were present. In a few cases there seemed to be no reason to use the labels 'Prehistoric' and 'Undated' for sherds which were clearly in the fabrics seen in the larger groups assigned to the Iron Age. These fabrics were generally sand-tempered and while flint was present in many of them it was not usually a dominant inclusion type.

The familiar problem of distinguishing between sherds of middle Iron Age and early Saxon date was encountered, and is discussed below.

Late Iron Age-Roman

Material of this date was encountered quite widely, but rarely in significant quantities in any individual context. The label Iron Age/Roman was sometimes used in the TVAS catalogue, though it is not very clear why, since early/middle Iron Age material in this collection appears to be reasonably distinct from Late Iron Age/Roman material on the basis of fabric alone. In some cases the designation Roman/medieval was used, generally for grey ware sherds. While the uncertainty seemed to be justifiable in a few instances, it was felt that these sherds could be assigned to one or the other period more often than not. The most striking misattribution here was the identification of a 1st-2nd century Verulamium mortarium sherd as (medieval) Surrey white ware.

Saxon

Little Saxon material was confidently identified. This is understandable in the absence of diagnostic vessels or decoration, but again it was felt that some identifications were excessively tentative. Thus a small number of distinctive grass-marked sherds were all labelled Saxon/Iron Age. Pottery from context 197 in Area G was all assigned to the Iron Age, but it is quite possible that much if not all of this material was of Saxon date, though here the fabrics were sand tempered and this identification cannot be regarded as certain.

Medieval and post-medieval

Identifications of this material were generally straightforward although, as has been mentioned, there was a tendency for some sherds to be labelled Roman/medieval, and one medieval rim was misidentified as prehistoric.

Conclusions

The majority of identifications were reasonable, but a number were contentious, even allowing for the fact that identification of small sherds can sometimes be subjective. The failure to identify Neolithic sherds, even though the quantity and therefore the importance of this material is difficult to judge, was the most significant omission, though lack of clarity about some Roman material was also evident and the quantity of Saxon pottery was probably slightly underestimated.

The material will be given to the relevant period specialists and integrated as appropriate.

Flint from fieldwalking and TVAS evaluations, by T Durden

A sample of 196 pieces of flint from the field survey and 262 pieces from the evaluations was examined. This forms approximately 25% of the total struck flint recovered. This sample showed that the previous identifications are generally in line with those which would have been made at the OAU.

Sampled examined:

Field Survey: flint from Land Parcels 0001, 2400, 1367, 7900 and 3139.

Evaluations: flint from Area G test pits, Area B trenches 60-63, Area F trenches 65-83.

Comment

Although identifications were felt to be generally correct, some differences in terminology are apparent and should be borne in mind, particularly with the evaluation material.

"spalls" seem to be any small flake or chip less than 20x20 mm.

"core fragments" often include that which could be classed as irregular waste or simply as thick or irregular flakes.

There is also the problem that cores are not identified to type (although "blade cores" are specified in the evaluation material), so we have no way of looking at plotting technological/dating differences.

Implements are generally broken down into type, though scrapers are not further subdivided.

Recommendations

If there is time available it would be useful to subdivide the core material further. As cores do not occur in every context, it would be possible to highlight the contexts needed and these could then be selected out by a technician for recording by the lithic specialist. The recording itself could take 1-2 days.

If there is no computer record of the flint catalogues, these will need to be entered onto a database in order to examine distributions or comment on the nature of assemblages/relationship to our excavated material. This could be carried out by a technician and may take around 4 days if we assume a total of 1800-2000 pieces of flint.

Appendix 6: Roman Ceramic Building Material by K Atherton

Introduction

235 fragments weighing 22,609 g were recovered from the 1997 excavation at Lake End Road West (LERW97). The Roman tile assemblages from Lot's Hole and Lake End Road East were not included in the 1996 assessment report and are therefore also reported on here.

Lots Hole

Seventeen fragments of tile, weighing 1659 g, were recovered as residual material from the excavation at Lot's Hole.

Lake End Road (East)

Thirteen fragments of tile, weighing 1441 g, were recovered from the excavation. No Roman features were identified and all the fragments can be considered residual, although the condition is better than at Lot's Hole. Only seven contexts contained Roman tile and five of these contained more than one fragment. All of these are secondary or upper fills of Saxon pits with the exception of one medieval pit. Fill 449, from a large Saxon pit, contained three fragments of relatively well preserved tile with a combined weight of 787 g, 55% of the total weight of tile from the site.

Lake End Road West

The excavation in 1997 at Lake End Road West recovered the largest of the assemblages of Roman tile from the three sites, 235 fragments weighing 22609 g, 88% of the total weight of tile. Saxon or post-medieval features produced 56% of the weight but the remaining 125 fragments, 9957 g, were found in Roman pits, ditches and a well.

Fabrics

Nineteen of the twenty fabric types are represented at Lake End Road West. The tables below present the fabric descriptions with their quantity from the three sites, and the number and weight of the different tile types from Lake End Road West, grouped by fabric. The largest fabric groups are fabrics 2, 3, 13 and 10, in descending order. Certain or probable Roman contexts produced 44% of the total weight of tile and 53% of the total number of fragments. The majority of the fabrics are concentrated within features dated to the 1st century. The exceptions are fabrics 2, 5 and 19 which are more prevalent in 2nd-century contexts and fabric 17 which does not occur before 3rd to 4th-century contexts.

Tegula

Thirty nine fragments (6244 g) of tegula roof tile were identified.

The majority of the tegula fragments were plain and only three had surviving signature marks. In all cases these were the usual circular symbols. One tile from the flat tile category had the remains of a line of five dots and it is possible, but not certain, that these are tally marks made by the maker of the tegulae. If this is the case then this is the only example. Unclear traces of one animal paw print were found. One fragment, found in the 2nd to 4th century fill of a late 2nd century well, showed evidence for burning after the tile had been originally broken. The tiles varied in thickness from 8 mm to 32 mm with the majority around 20 mm.

Twenty two of the thirty nine fragments were recovered from features dated to the Roman period. Of the 3622 g of tegulae found in Roman phase features, 58% of the total tegula weight, 31% came from features phased to the 1st century. 40% of the total weight of material produced from 1st century contexts consists of tegulae fragments. 77% of the total number of Roman-phased tegulae came from 1st or 2nd century features.

Imbrex

A total of nineteen fragments of imbrex roof tile, with a weight of 1658 g, was recovered during the excavation. This represents 8% of the total number of fragments and 7% of the total weight. Only five of the nineteen pieces of imbrex were recovered from features dated to the Roman period. These are scattered among features dated from the 1st century through to 3rd and 4th-century features.

Tubuli

The excavation produced only two identifiable fragments of tubuli or half-box flue tiles. One of the fragments weighed only 11 g and had faint traces of combing. The other fragment, small find 2839 from fill 1747 of a Saxon pit, was one of the larger fragments of tile from the site. It had a weight of 532 g, an unusual thickness of 27 mm and was made from fabric 2. The combing, likely to have been made with a comb with five teeth, formed rough diagonal lines with the order of combing evident in the pattern. The traces of burning are probably the result of use. No fragments were found in any dated Roman features, the smaller fragment was from an unphased Roman feature.

Plain flat tile

The plain flat tile category is the largest group consisting of seventy three fragments with a total weight of 8579 g. This represents 31% of the total number of fragments and 38% of the total weight. There are examples of flat tile from all the fabric types with the exception of fabric 14 which produced only four miscellaneous fragments.

Thirty three fragments, 45% of the flat tile total, were recovered from Roman features and 61% of these are from 1st and 2nd-century features. There was little unusual about the fragments. One piece, residual in a Saxon pit, showed traces of burning after it had been initially broken. A probable thumb dent is evident on one fragment and there are very occasional patches of mortar. Fill 1425 of a Saxon pit produced a more unusual fragment which was made from fabric 4, was 25 mm thick and had a weight of 324 g. A line of five small dots lies on the smoothed upper surface of the tile and above them there are three deeper, rough grooves. The holes were made pre-firing but the grooves appear to be later in date. Faint hatched lines are probably the result of the wood used to smooth off the surface of the tile. The thickness makes it likely that this is a piece of tegula and that the line of dots is possibly part of the maker's tally mark.

Brick

Fragments with a thickness greater than 39 mm were grouped together as brick. Twenty three pieces with a weight of 1693 g fell into this category, representing only five bricks. Three of the five bricks were recovered from features dated to the Roman period, two of them from 2nd-century features.

Miscellaneous fragments

The majority of the site fragments (66%), were assignable to one of the recognised tile type categories but the remaining seventy nine pieces, 17% of the total weight of tile, were too small and abraded to be classified as anything other than miscellaneous.

Conclusion

The Lake End Road West assemblage provides a varied collection of different tile types as would be expected from a Roman settlement. It is notable that there are few examples of tubuli and, while it is likely that there are more examples from among the flat tile and miscellaneous categories, it is perhaps an indicator that the settlement was of low status. Of the 125 fragments found in features dated to the Roman period, 1st-century features account for 33% whereas 2nd-century features produced only 17%. The ten fragments found in 3rd to 4th century contexts may suggest some continuation of occupation within this period but it appears to have declined considerably by this time. It is worth noting that 47% of the number of fragments from Lake End Road West were found in Saxon features that also contained Roman pottery. The 1996 excavation at Lake End Road also produced relatively well preserved fragments of tile, although few in number, from Saxon features and one can speculate whether the collection was deliberate. The assemblage is too small to draw any firm conclusions about the nature of the settlement other than to suggest that a settlement of some kind did exist in the 1st

century around Lake End Road. The size and condition of the fragments, with the absence of tubuli, also suggests that the status of the settlement was not high and that it fell into decline possibly after the 2nd-century.

Fabric Totals for DLH, DOLER and LERW

Fabric	Description	No Frags	Fabric Total Wt
1	Very sandy, occ. quartz. Few inclusions	11	936
2	Sandy, pitted. Numerous quartz Grog, Split holes, mod. mica.	31	3662
3	Hard, sandy, soapy. Few inclusions. Occ. quartz, hole.	31	2382
4	Sandy, gritty, mixed clay. Small inc. grog, quartz, mica.	18	1608
5	Hard, not as sandy, mixed clay occ. Fe, quartz of all sizes, holes	17	1347
6	Smooth, mod. soapy and sandy. Occ. holes, quartz, Fe patches	6	904
7	Hard, less sandy, red. Numerous holes, occ. quartz, grog, Fe and mod. white inclusions.	12	1234
8	Hard, sandy, soapy, pinkish. Some mixed clay, mica, Numerous Fe and holes. Quite gritty.	21	2095
9	Very pink, sandy, streaky clay. Patches of large Fe and holes. Occ. small grog and quartz.	14	1238
10	Red, sandy, Mod. amount of inc., Fe and mica. Occ. quartz and grog, holes	11	2297
11	Soft, soapy, sandy. Patches of very numerous Fe and quartz, otherwise nothing but mixed clay	13	969
12	Sandy, pink, mixed clay. Occ. holes. patchy, moderate quartz.	5	326
13	Mixed, sandy clay. Occ. small holes, very small quartz and mica.	12	1859
14	Very mixed red and white clay. Mica, occ. quartz.	4	71
15	Mixed pink clay with abundant mica.	14	1001
16	Mixed red and white clay. More inc. than F14: Fe, grog, quartz. Less mica.	3	159
17	Very grey with numerous quartz and mica and holes of all sizes.	7	802
18	Red, hard, abundant mica. Occ. quartz, Fe, holes.	23	1528
19	Red, hard mixed clay. Occ. mica, quartz. Breaks in cubes.	11	1223
20	Hard, soapy, mixed clay. Large Fe.	1	68
Total		265	25709

Quantities of Roman tile types

	DLH	DOLER	LERW	Total
A No	3	5	39	47
A Weight	336	1004	6244	7584
B No	3	2	19	24
B Weight	379	213	1658	2250
C No	1		2	3
C Weight	227		543	770
D No	5	1	73	79
D Weight	320	14	8579	8913
E No	1	1	23	25
E Weight	162	152	1693	2007
M No	4	4	79	87
M Weight	235	58	3892	4185
Total No	17	13	235	265
Total Wt	1659	1441	22609	25709

LERW 97 Quantity of tile types by fabric (No/Weight)

Tile type	A	B	C	D	E	Misc	Total
F1	4 / 388			3 / 308	1 / 112	2 / 93	10 / 901
F2	8 / 1479	2 / 120	1 / 532	6 / 854		8 / 355	25 / 3340
F3	3 / 248	6 / 722		10 / 741		12 / 671	31 / 2382
F4				5 / 823		12 / 594	17 / 1417
F5	2 / 520	2 / 153	1 / 11	2 / 115	2 / 236	5 / 142	14 / 1177
F6	2 / 206			2 / 231	1 / 240		5 / 677
F7	2 / 396	1 / 84		3 / 332		3 / 62	9 / 874
F8	4 / 715	2 / 70		4 / 613		7 / 235	17 / 1633
F9		1 / 109		3 / 465		4 / 114	8 / 688
F10	4 / 1107			3 / 480		1 / 9	8 / 1596
F11	1 / 304	2 / 128		4 / 131		6 / 406	13 / 969
F12	1 / 56			2 / 160		2 / 110	5 / 326
F13	3 / 353	1 / 180		6 / 1104		2 / 222	12 / 1859
F14						4 / 71	4 / 71
F15	5 / 472	1 / 21		4 / 496		4 / 12	14 / 1001
F16				2 / 35		1 / 124	3 / 159
F17				5 / 546		2 / 256	7 / 802
F18				4 / 677	18 / 837		22 / 1514
F19		1 / 71		5 / 468	1 / 268	4 / 416	11 / 1223
Total	39 / 6244	19 / 1658	2 / 543	73 / 8579	23 / 1693	79 / 3892	22609

LERW97 Roman Phase: Fabric quantities

Fabric	No Fgs	Fabric Total No	Weight	Fabric Total Wt
1	5	10	451	901
2	10	25	1718	3340
3	17	31	1168	2382
4	7	17	408	1417
5	9	14	784	1177
6	2	5	301	677
7	4	9	377	874
8	9	17	529	1633
9	3	8	397	688
10	1	8	457	1596
11	6	13	344	969
12	5	5	326	326
13	7	12	598	1859
14	4	4	71	71
15	7	14	532	1001
16	1	3	5	159
17	2	7	54	802
18	20	22	906	1514
19	6	11	531	1223
Total	125	235	9957	22609

LERW 97 Tile types by phase (No/Weight)

Phase	A	B	C	D	E	M	Phase Total
1st C	7 / 1125	2 / 44		11 / 607		21 / 1057	41 / 2833
1-2nd C	2 / 406			3 / 139	18 / 837	2 / 152	25 / 1534
2nd C	8 / 955			6 / 518	3 / 504	4 / 240	21 / 2217
2-3rd C				1 / 27			1 / 27
2-4th C	2 / 297	1 / 109		2 / 285		1 / 98	6 / 789
3-4th C		2 / 102		4 / 270		4 / 130	10 / 502
Roman	3 / 839		1 / 11	4 / 397		7 / 396	15 / 1643
Roman or Saxon				2 / 345		4 / 67	6 / 412
Roman Total	22 / 3622	5 / 255	1 / 11	33 / 2588	21 / 1341	43 / 2140	125 / 9957
Post-Roman	17 / 2622	14 / 1403	1 / 532	40 / 5991	2 / 352	36 / 1752	110 / 12652
Total	39 / 6244	19 / 1658	2 / 543	73 / 8579	23 / 1693	79 / 3892	235 / 22609

No further work required

Appendix 7: Medieval and post-medieval ceramic building material by N Mitchell

This assessment includes the post-medieval tile from the Tranche 1 excavations, which were excluded from the previous post-excavation assessment (OAU 1996).

Marsh Lane and the M4 Motorway Diversion (TMOD97)

Only seven fragments, in two fabrics, of ceramic building material were found. Five fragments are plain, flat roof-tiles. Another in the same fabric (1), is an abraded brick, 42 mm thick (possibly the original thickness). The only fabric 2 fragment is a curved piece which may be a Roman imbrex or a simple medieval ridge-tile.

Tile quantified from TMOD97 by fabric and type

Fabric	No. of Fragments	Weight (g)	Type
1	5	90	flat roof-tile
1	1	420	brick
2	1	20	curved 'tile'
Totals	7	530	

*Marsh Lane East Site 2 (TALN96)**Tile from TALN96 quantified by fabric and type*

Fabric	No. of Fragments	Weight (g)	Type
3	2	35	flat roof-tile
2	1	50	flat roof-tile
Totals	3	85	

Three fragments of plain roof-tile were found and occur in two fabrics (2 and 3 in the project fabric series). Both fabrics are in context 180 and fabric 3 is also from post-medieval quarry-fill 8. They are both also seen at Lake End Road East where fabric 2 is possibly medieval. Fabric 3 is also known from Marsh Lane East Site 1 (TAMLE96).

*Marsh Lane East Site 1 (TAMLE96)**Building material from TAMLE96 quantified by fabric and type*

Fabric	No. of Fragments	Weight (g)	Type
2	2	130	flat roof-tile
3	10	500	flat roof-tile
8	1	60	brick (> 38 mm thick)
10	1	50	flat roof-tile
11	2	120	flat roof-tile
Totals	16	860	

Fifteen fragments of roof-tile and one very fragmented brick were retrieved from the excavation. They are all likely to be post-medieval. All five fabrics present are known from other sites further east, fabrics 2, 3 and 8 from Lake End Road and fabrics 10 and 11 from Lot's Hole, where they are likely to be medieval.

*Area 8 Watching Brief (SLNRA96)**Building material from SLNRA96 quantified by fabric and type*

Fabric	No. of Fragments	Weight (g)	Type
7	1	70	brick
10	5	90	flat roof-tile
Totals	6	160	

The excavation produced five roof-tile fragments, all plain and flat with peg-holes. Fabric 10 is seen further west at the Lot's Hole site where it is likely to be medieval. The single brick fragment has no complete dimension but its fabric is also noted in flat roof- and ridge-tiles at the Lot's Hole site.

Lot's Hole. (DLH96)

103 fragments and 11.19 Kg of ceramic building material were recovered from the site. They were found in twenty-seven different contexts, eighteen of which are dated by pottery as being medieval and three as post-medieval.

Building material from DLH96 quantified by fabric and type

Fabric	No. of Fragments	Weight (g)	Type
3	28	2,930	flat roof-tile
3	1	710	floor-tile
4	1	240	flat roof-tile
7	3	1,000	brick
9	18	1,420	flat roof-tile
10	27	3,040	flat roof-tile
11	24	1,750	flat roof-tile
Totals	102	11,190	

Forms

The vast majority, (99 fragments, 9.54 Kg), are plain flat roof-tiles and only one fragment, in Fabric 10, is glazed (greyish-white on one end). Ten fragments show that at least the tiles of fabrics 10, 3 and 11 had peg-holes. Another fabric 10 tile from a late 12th- to 15th-century context (223) is 16 mm thick and flat, with a broken curve or flange on at least one side. This is likely to be a hip-tile rather than a gutter-tile and is a form also seen at Lake End Road. A floor-tile with steeply bevelled sides is from context 1049. It is large and thick, (36 x >140 mm), with no keying on its underside or obvious signs of decoration on the upper surface and is therefore unlikely to be of strictly medieval date and typologically should be later.

There are three bricks, approximately 56 mm thick and 110 mm across. One has a light greenish-white glaze on one end, from a 19th-century context, while another, from a late 11th to 13th century context, has all sides glazed whitish-grey.

Fabrics

There are 5 roof-tile fabrics, (3, 4, 9, 10 and 11), and one brick fabric (7), present in the building material. Fabrics 9, 10, 3 and 11 comprise the great majority of the assemblage in approximately even proportions while the remaining fabrics, 4 and 7, have only 4 fragments and 1.24 Kg. There is little distinction in the dating of the different tile fabrics as all the flat roof-tiles occur in contexts dated as medieval. The most specific and consistent dating relates to Fabrics 3 and 11 which both have 23 fragments from contexts dated to the late 12th to 15th centuries.

The assemblage comprises a limited number of forms of building material. It does, however, include four fabrics (3, 9, 10 and 11) which are likely to be of medieval date. Fabrics 3 and 5 are also seen at the nearby Lake End Road site.

Lake End Road (DOLER96 and LERW97)

These two sites are considered together, since they are separated only by Lake End Road and will be treated as a single site for analytical purposes. The bulk of the post-medieval tile was recovered from Lake End Road East.

The excavations produced 365 fragments of tile, weighing 31.42 Kg, and 34 brick fragments, weighing 4.97 Kg. The building material is largely post-medieval although one intriguing piece may be an early medieval floor-tile.

There is a limited range of tile forms from this site with the vast majority of fragments being flat plain roof-tile. There are four plain, curved tiles in fabrics 3,4 and 5, which may be ridge-tiles. Their simple form and finish suggests a post-medieval date and the context dating does not contradict this, (658, 167, 406, 556). There are two tiles in fabrics 1 and 7 which are flat but which have a deliberate curve, now partly broken, on at least one edge. These are also seen at the nearby Lot's Hole site and are probably hip-tiles rather than guttering since they have a smooth outer surface.

Six roof tiles show a white, flaky burnt glaze, all except one of which, from a medieval pit fill (571), are from post-medieval contexts. The flat tiles of all fabrics have peg-holes. There are two fragments of plain floor-tile which cannot be dated by their contexts (806 and 569), but appear to be either late medieval or post-medieval. Bevelled sides show them to be floor-tiles, but they have no apparent decoration and no keying on their undersides.

The 34 brick fragments show a concentration to the west of Lake End Road, (31 fragments were found in the Lake End Road West excavations. These are most likely to be post-medieval and although few dimensions remain intact, two sizes appear to be present: 75 mm wide x 60 mm thick, and 120 mm thick x 60 mm thick.

Eight contexts dated by pottery as medieval contain tile but show no clear distinction in fabrics when compared to the tile of post-medieval features. Most numerous in medieval contexts, however, is Fabric 5, with 24 fragments (1440g) from just two contexts (361 and 656). The latter context is the most prolific with 23 fragments of tile in fabrics 1, 2, 3, 5 and 7.

A fragment of possible early medieval relief floor-tile

One small fragment from fill 405 of pit 356, is very intriguing and is interpreted here as an early medieval relief floor-tile. It is of a buff-coloured fabric, mid-pink beneath the surface (fabric 14), and is decorated with a zig-zag pattern in deep relief on the upper surface. This impression, perhaps created by either a wooden stamp or a mould, is itself a rounded V-shape in section and is 4-5 mm deep. There is no glaze and the surface is without obvious signs of wear that could have eroded a glaze. The tile is 24 mm thick and has only one intact side with no discernible bevel, but an alternative bevel or chamfer 15 mm wide, is cut along the edge of the underside.

The interpretation of this tile as an early medieval floor-tile is based largely on the presence of the chamfer on the underside, also seen in early medieval tiles at Coventry, St Albans, Canterbury, Bury St Edmonds, Winchester and York (Betts 1986, 37) and on the light, buff-coloured fabric regularly favoured in both pottery and tiles before the later medieval period when the widely known inlaid floor-tiles were introduced.

The relief nature of the decoration also broadly agrees with the earlier medieval tiles although it is less delicate and unglazed. The design, however, has no obvious parallel amongst those so far discovered. The date-range of the polychrome relief floor-tiles series is considered to be late 10th to 11th century (Keen, 1978). If the identification is correct it would suggest the presence of a high-status building of early medieval date within the vicinity.

Building material from Lake End Road (DOLER96 and LERW97) quantified by fabric and type

Fabric	No. of Fragments	Weight (g)	Type
1	1	340	curved ridge-tile
1	112	10,430	flat roof-tile
1	2	260	floor-tile
2	113	7590	flat roof-tile
3	31	2,490	flat roof-tile
3	1	120	curved ridge-tile
4	23	2,430	flat roof-tile
4	2	150	curved ridge-tile
5	66	5,860	flat roof-tile
5	1	120	curved ridge-tile
6	11	1,280	flat roof-tile
6	1	230	ridge-tile with curving edge
7	7	1,730	brick, 75 mm wide x 60 mm thick
8	27	3,240	brick, 120 mm wide x 55 mm thick
14	1	120	possible early medieval floor-tile
Totals	399 fragments	36,390g	

Fabric Descriptions:

- 1: mid-orange high-fired sandy fabric with abundant large quartz, occasional flint up to 5 mm and silt-stone up to 2 mm
- 2: high-fired mid-orange fabric with pronounced marled effect with sparse to moderate large quartz with occasional lime and iron up to 1 mm
- 3: sandy mid-pink fabric with moderate to moderate large sub-rounded quartz and frequent grog up to 3 mm
- 4: dull orange-brown fabric with moderate mid-sized quartz with flint, and lime, and moderate grog up to 3 mm
- 5: deep orange fabric with moderate small and mid-sized quartz and moderate grog up to 1 mm and occasional miscellaneous white inclusions up to 0.5 mm
- 6: high-fired mid-orange fabric with marled effect with moderate to abundant mid-sized quartz and light pink grog up to 8 mm
- 7: soft, dark orange fabric with sparse large quartz and occasional iron-stone up to 2 mm
- 8: distinctive hard, dark, pink fabric with moderate large quartz, frequent hard white inclusions up to 10 mm and frequent iron up to 10 mm
- 9: hard orange fabric with moderate large quartz and frequent lime up to 1 mm
- 10: dull orange fabric with moderate ill-sorted mid-sized quartz and moderate lime up to 2 mm
- 11: high-fired deep-red fabric with pronounced marling effect. Occasional grog up to 2 mm, lime up to 1 mm and flint up to 2 mm
- 12: medium hard deep orange fabric with abundant mid-sized sub-rounded quartz and occasional grog up to 1 mm
- 13: hard orange fabric with abundant small quartz with occasional grog and lime up to 0.5 mm
- 14: buff-brown exterior, mid-pink interior, soft and 'soapy' fabric with moderate, large, sub-rounded quartz, frequent grog up to 4 mm

No further work required

Appendix 8: Small finds from Marsh Lane and the M4 Motorway Diversion by P Bradley

A small collection of copper alloy, iron, stone and other miscellaneous objects was recovered from these sites, these are tabulated below. The majority of the finds are unstratified and apart from a Bronze Age copper alloy pin from context 131, there is little of interest.

Summary of finds

Context	Iron	Cu alloy	Other metal	Stone	Clay pipe
1	-	-	-	-	fragment of bowl with part of stem
13	3 horseshoes	-	-	-	-
25	4 nails 2 strips (1 perforated) 2 tent pegs	1 strip	-	-	-
35	-	-	-	1 Greensand quern or rubber fragment 2 burnt quartzite fragments	-
45	-	-	-	1 burnt quartzite fragment	-
131	-	1 Bronze Age pin	-	-	-
U/S	2 strips (1 perforated) 6 nails 2 miscellaneous fragments	3 coins	1 bullet case	-	-
601	1 miscellaneous fragment	-	-	-	-
	22	5	1	4	1

Copper alloy

Copper alloy objects include the Bronze Age pin. Dr P Northover's report is pending. Three copper alloy coins and a strip were also recovered. Two of the coins are illegible, the third has a seated figure; all are probably post-medieval in date.

Iron

Twenty-two pieces of iron were recovered, consisting mainly of nails, strips and miscellaneous pieces. All of the material is likely to be post-medieval in date.

Stone (identifications by Fiona Roe)

A single very small fragment from a Greensand rubber or quern was recovered from context 45. Three fragments of burnt quartzite were also recovered.

Clay pipe

A single piece of clay pipe was found. It has a large bowl and wide bore and is of post-medieval date.

Recommendations for further work

Apart from the Bronze Age pin which Dr Northover is writing up and the piece of worked stone, no further work is recommended on any of these categories of finds. The piece of worked stone will be compared with the material from other sites and a possible source for the stone will be sought.

Appendix 9: Metalwork by I Scott

The assemblage

The metalwork assemblage comprises 140 iron objects, 67 copper alloy (and pewter) objects, 35 pieces of lead and 12 coins, tokens and possible coins.

Assessment Methodology

All finds were fully recorded and, provisionally identified. Measurements were made for all but the most fragmentary objects. Where a typological date could be assigned to an object this was also noted. The recorded information was entered into database, which can be expanded as required during further analysis. Following of quantification, each of the metal assemblages (iron, copper alloy, lead and coins) was assessed for analytical potential and group value. The total metalwork assemblage was assessed and a number of stratified groups of metal artefacts was identified.

The Assessment of the ironwork

A total of 140 iron objects was assessed, including a small number of unidentifiable fragments. A small proportion of the ironwork (11 objects) comes from context 1 and comprises exclusively recent finds. These objects have not been considered in the assessment. The preservation of the remainder of the assemblage is quite good, with little evidence of active corrosion or serious lamination. Nonetheless, a number of the pieces are quite heavily encrusted with corrosion products and some will require cleaning to clarify form prior to analysis and illustration.

Excluding the ironwork from context 1 there are 129 objects. Of these, 23 are nails or fragments of nails, and 31 miscellaneous iron fragments, predominantly pieces of rod, bar, strip (with no nail holes) and sheet or plate. These pieces and the nails are of little intrinsic interest and do not warrant further analysis. The remainder of the assemblage (75 objects) is dominated by two groups: knives and teeth from wool combs or heckles. There are 21 knives, most of which are complete with tangs and of good Saxon forms, and 14 heckle teeth and a part of a heckle with iron binding and at least 13 surviving teeth in place. The remaining 40 objects include a small spearhead (fe 103), a small padlock key (fe 035) and a T-shaped lift key (fe 076). There is a small number of personal items - finger ring (fe 118), belt tag (fe 037), hobnails (fe 023), pins (fe 126) - and a number of objects of uncertain identification.

Although the ironwork forms a small assemblage, it is of some interest, in part because of its date, in part because much of it is well stratified, but in particular because of its composition. The heckle and the heckle teeth are interesting but have only limited analytical potential. Their spatial and chronological distribution may be of interest. Their presence attests the processing of wool. The knives are the most interesting part of the assemblage, and form a good sized collection from such a small overall assemblage. The knives have excellent analytical potential.

The Assessment of the copper alloy

The total number of copper alloy, pewter and other objects is 67. The majority of the objects (59 out of 67) comes from context 1 and comprises exclusively post-medieval finds; most of the objects are modern and have not been considered in the assessment. The preservation of the small number of stratified objects is poor, with quite marked signs of corrosion and loss of surfaces.

The majority of the assemblage is from context 1 and is made up predominantly of buttons. However, amongst the more recent material from context 1 there is a small number of early post-medieval finds. These include a cast pellet or rumbler bell (ca 057), a decorated clothing hook (ca 061), and two plain cast figure-of-eight buckles (ca 058 & 059). There is also a fragment of a small medieval buckle (ca 060). The remaining eight objects include three Saxon pins (ca 063, 065 & 066) paralleled at Hamwic (Hinton 1996, pp 14-37).

The majority of the copper alloy and pewter assemblage is post-medieval in date and has no analytical value. The small collection of medieval and post-medieval finds from context 1 has some limited interest, but does not required further analysis. The three pins (ca 063, 065 & 066) paralleled at

Hamwic have limited value as a group on their own, but in the context of the site and the whole metalwork assemblage they have good analytical value.

The Assessment of the lead assemblage

The lead from Lake End Road West comprises 35 pieces, mainly scrap and waste. All but one of the pieces are from context 1 and have therefore not been assessed. The single piece of lead (pb 011) from a stratified context comes from fill 1834 in pit 1593; fill 1671 in the same pit has produced a heckle tooth and a knife blade.

All but one piece are from context 1 and therefore have little or no analytical potential. The single stratified piece (pb 011) comprises a quite large melted waste. This has little intrinsic interest in its own right but may indicate the working/use of lead in the vicinity.

Assessment of the coins and tokens

There are 12 pieces identified as possible coins. Preservation is good. All are from context 1. Of the 12 possible coins or tokens, five can certainly be identified as such and a further example is very probably a coin or token. Of the remaining six pieces, five are blank or very worn discs, and one is probably a silver, or silvered, button. The coins include a silver coin of Elizabeth I, a German jetton probably of Hans Krauwinkel, and coins of George V, George VI and Elizabeth II. The coins have little or no analytical potential.

Assessment of the metalwork assemblage

The copper alloy and ironwork assemblages both have some potential for analysis. Taken together and bearing in mind that much of the metalwork is well stratified and securely dated the potential of the material as a group is good. Assemblages from pits producing more than three items of metalwork are tabulated below.

Proposed work

The stratified and dated metalwork should be catalogued and published. Particular attention should be given to groups of material from pits and other cut features. The good collection of knives might repay metallographic analysis (for example Ottaway 1992, 480-6).

Stratified groups of metalwork

Pit 274 (Fills 275 - 277, 322 - 324 & 401 - 403)

Context	sf no	Number	Description	Box no.	Metal	Rec no.
276	283	1	knife blade, incomplete, lacks tang	FE 2	fe	fe 022
276	2790	1	knife blade	FE 4	fe	fe 107
277	<10>	1	pin, polyhedral head, Hamwic type B	CA 1	ca	ca 063
277	293	1	sheet folded into hexagonal shape	FE 2	fe	fe 034
322	303	1	strip, tapering, no nail holes	FE 2	fe	fe 019

Pit 697 (Fills 187, 787, 798, 799, 1051 1052 & 1054)

Context	sf no	Number	Description	Box no.	Metal	Rec no.
187	547	1	?belt tag, comprising bar with divided end and rivet	FE 2	fe	fe 037
187	573	1	barb-spring padlock key, small	FE 2	fe	fe 035
187	574	1	knife blade	FE 2	fe	fe 036
187	575	2	?bell fragments; traces of cu alloy	FE 2	fe & ca	fe 047
187	598	1	rod, tapering, heckle tooth?	FE 2	fe	fe 039
187	2647	1	?vessel fragment, formed from sheet	FE 3	fe	fe 088
787	530	4	sheet fragments	FE 2	fe	fe 040
787	2669	1	?needle, possible trace of eye	FE 3	fe	fe 083

Pit 878 (Fills 879, 880, 890, 926, 927, 952, 965 & 969)

Context	sf no	Number	Description	Box no.	Metal	Rec no.
879	769	1	platch, with looped handle at one end and looped eye at the other	FE 2	fe	fe 038
879		1	fragment	FE 4	fe	fe 124
879	932	1	pin or needle, some signs of finishing with a file	CA 1	ca	ca 054
880		1	heckle tooth	FE 4	fe	fe 121

Pit 951 (Fills 946, 1005 & 1129)

Context	sf no	Number	Description	Box no.	Metal	Rec no.
946	1069	1	knife blade	FE 2	fe	fe 031
946	1070	1	nail, fragment	FE 2	fe	fe 026
946	2784	1	heckle tooth	FE 4	fe	fe 105
946	2785	1	knife blade, incomplete	FE 4	fe	fe 106
946	2832	1	heckle tooth	FE 4	fe	fe 098
946	2851	1	knife blade	FE 4	fe	fe 117
1005	1165	1	awl, possibly tanged	FE 2	fe	fe 032
1005	2829	1	knife blade	FE 4	fe	fe 111
1005	2830	1	tang from a knife blade?	FE 4	fe	fe 114

Pit 1186 (Fills 1187 - 1189, 1249 - 1251, 1463 - 1468)

Context	sf no	Number	Description	Box no.	Metal	Rec no.
1187	2085	1	pin, spherical head with written decoration and collar; stem with swelling, Hamwic type Ab	CA 1	ca	ca 065
1187	2777	1	small spearhead, with ?decoration	FE 4	fe	fe 103
1187	2778	1	heckle tooth	FE 4	fe	fe 104

Pit 1256 (fills 1135, 1157, 1177, 1178 & 1252 - 1255)

Context	sf no	Number	Description	Box no.	Metal	Rec no.
1135	2020	1	bar or rod, possibly pointed	FE 2	fe	fe 041
1135	2501	1	knife blade	FE 3	fe	fe 072
1135	2502	1	bar or rod fragment	FE 3	fe	fe 068
1135		1	needle or pin	FE 4	fe	fe 122

Pit 1351 (fills 1352, 1416, 1601, 1602, 1611 & 2118)

Context	sf no	Number	Description	Box no.	Metal	Rec no.
1352	1317	1	nail	FE 3	fe	fe 064
1352	2254	1	bar or rod fragment, tapering	FE 3	fe	fe 055
1352	2285	1	nail, large head	FE 3	fe	fe 058
1352	2286	1	nail	FE 3	fe	fe 059
1352	2287	1	bar or rod fragment	FE 3	fe	fe 060
1352	2288	1	bar or rod fragment	FE 3	fe	fe 061
1352	2698	1	heckle tooth fragment	FE 3	fe	fe 085
1352	<151>	1	finger ring, with oval setting	FE 4	fe	fe 118
1352	2699	1	pin, short, with solid domed head	CA 1	ca	ca 064
1416	2701	1	nail	FE 4	fe	fe 086
1416	2702	1	?chisel	FE 4	fe	fe 091

Pit 1593 (fills 1594, 1634, 1639, 1671, 1702, 1712, 1746, 1747, 781, 1783, 1814, 1834, 1868, 1892, 1910, 1964 - 1966, 1970 - 1972, 1975, 1976, 1978)

Context	sf no	Number	Description	Box no.	Metal	Rec no.
1671	2799	1	knife blade	FE 4	fe	fe 108
1671	2800	1	heckle tooth	FE 4	fe	fe 099
1834	2604	1	melted lead waste	PB 1	pb	pb 011

Pit 1734 (Fills 1735 & 1815 - 1817)

Context	sf no	Number	Description	Box no.	Metal	Rec no.
1735	2555	1	T-shaped lift key	FE 3	fe	fe 076
1735	2557	1	?handle of curved rod with loop at one end	FE 3	fe	fe 077
1735	2772	1	bar, rectangular section	FE 4	fe	fe 095
1735	2774	1	tubular object sealed at one end, with small tube on top	FE 4	fe	fe 092
1735	2775	1	bar bent into U-shape with flat pierced end	FE 4	fe	fe 102
1735	2824	1	heckle tooth	FE 4	fe	fe 097

Estimate of additional work required on the Lake End Road West metalwork

Task	Duration (Days)
Update paper record	1
Update and complete data entry	1
Consult with conservator and select objects for conservation and cleaning	1
Select knives for metallographic analysis	0.5
Metallographic analysis	4
Prepare publication catalogue	2
Prepare discussion of assemblage	4
Select objects for illustration and prepare drawing briefs	1
Check drawings and Revise report text	1
Total	9.5

Appendix 10: Worked bone and antler by I Riddler

Introduction

A total of 33 objects of bone and antler, as well as a small quantity of antler waste, were examined in Oxford on 6th February 1998. Almost all of this material is of middle Saxon date, and it is briefly assessed here by functional category.

The terminology used in descriptions follows that of Galloway (1976) with the exception of the handled comb, which is described as advocated in Riddler (1990b, 9).

Dress and Personal Possessions: Combs

There are sixteen fragments of combs, all but one of which are double-sided composites. The comb fragments without a small find number from context 1158 belong to the same comb as those of sf 2216. Few of the combs are complete or near-complete and their original lengths (which can be an important characteristic of their design) can only be estimated in one case (sf 2769). On the other hand, the widths of almost all of the combs can be measured, and end segments survive in eight instances. These fortunate survivals do allow a fair amount to be said, therefore, about the nature and dating of these combs.

Eleven of the double-sided combs are relatively narrow, with widths of 40 mm or less. Only two examples (sf 1290 and sf 1321) exceed this figure, and they are separately considered below. The connecting plates of this narrow comb group are noticeably slender, with widths of 8-10 mm, and they are shallow and largely untapered. The connecting plates sit well back from the ends of the combs and this emphasises their length.

Combs of this specific, narrow, elongated form are first seen in the seventh century and they are commonplace in middle Saxon assemblages (most of which are unpublished, unfortunately) although they are not unduly common and it is unusual to see so many from a single site. Further elements of design confirm that this group is of middle Saxon date. Of the nine examples for which some parts, at least, of the connecting plates survive, eight are decorated. The decoration is generally of a restrained nature, however, and in four cases it is limited to vertical bounding lines at the ends of the connecting plates. Two closely-related combs (sf 2043 and sf 2769) have unbounded bands of diagonal lines at either end of the connecting plates, whilst a further comb sf 2809 has a paired lattice design arranged about its centre. The only comb with decoration which extends along the connecting plate to any extent is sf 2888, which has a pattern formed of alternating bands of vertical lines arranged in a chequered design on its display side. This particular patterning does occur on Viking period combs, of ninth to tenth century date, most of which are southern Scandinavian (Tempel 1969, taf 25.129-33). These, however, are single-sided composite combs, and it is unusual to see this pattern applied to a double-sided composite comb.

Display sides are seen on Frisian combs of eighth and ninth century date and the concept was widely adopted in England during the middle Saxon period. The minimalist decoration of vertical bounding lines at each end of the connecting plates is also a common middle Saxon decorative feature, which can be seen on combs from Canterbury, *Hamwic* and Ipswich, amongst other sites. It is first seen in the second half of the seventh century, and it may not extend into the ninth century.

All of the double-sided composite combs have teeth which are the same length and fineness on either side of the comb. The rivetting systems are the same across the entire assemblage, with end segments fastened through their centres and tooth segments on one edge. These characteristics are well-established during the middle Saxon period, and are less standardised prior to that date. The teeth are cut predominantly from one side of each comb leaving (quite deliberately) saw marks on one connecting plate, but not on the other.

Taken together, all of these elements of design indicate that these are middle Saxon combs, largely of eighth or ninth century date, although some elements of design certainly go back to the seventh

century. There are tentative indications that some combs may be earlier and some a little later, and these are summarised below.

The Larger Comb Group

Two double-sided composite combs are wider and larger and one of these may possibly be of a slightly earlier date. One example (sf 1290) has vertical bounding lines to its connecting plates and is of a typical middle Saxon form. The other (sf 1321), however, has distinctively tapered, plain connecting plates, and this characteristic is generally redolent of earlier combs, of sixth or early seventh century date. Too little survives of this comb, however, to be able to say anything more about its dating, and it remains possible that it is middle Saxon. There is a similar middle Saxon comb from Canterbury, Christ Church College (unpublished).

Dress and Personal Possessions: Handled Comb

The handled comb sf 2709 is elaborately decorated, with two bands of splayed perforations. It belongs to a small group of combs distributed across East Anglia, southern England and the North Sea littoral (Riddler 1990a; 1990b, 14 and forthcoming). Dating evidence for the group is poor but it is generally centred around the tenth century. It is possible that some of these combs were made in the ninth century, but all of those from stratified contexts belong to the tenth or eleventh century, with the exception of an example from *Hamwic*, which may be of ninth century date.

Spot Dates for the Combs

The term middle Saxon is used here to cover the period from the seventh to the ninth century. The dating of combs is currently still a slightly imprecise science, and all of them could be middle Saxon. Nonetheless, it is appropriate to provide slightly more precise dates, and I have tried to do this here.

Small Find	Context	Date
2244	1323	eighth or ninth century
2805	478	middle Saxon
2888	1690	ninth or tenth century
2781	946	eighth or ninth century
2809	624	seventh or eighth century
2216	1158	middle Saxon
Sample 28	478	early or middle Saxon
2623	1912	middle Saxon
2251	1323	middle Saxon
2218	1285	eighth or ninth century
301	322	seventh or eighth century
2043	1135	eighth or ninth century
2769	1187	eighth or ninth century
1290	2185	seventh or eighth century
1321	2185	seventh or eighth century
2709	1594	ninth or tenth century

Textile Implements

The seven pinbeaters are all of the double-pointed form which is associated with the warp-weighted loom. They occur throughout the Anglo-Saxon period, up to the twelfth century, and they cannot be closely dated. sf 2541 and sf 2529 join together and are two parts of the same object. This pinbeater is relatively short and belongs to Riddlers' Group A. The remainder are long and belong to Group B (Riddler 1993, 119). From a cursory examination, most examples appear to be made of antler although one example sf 463 may be bone. The longest example sf 292 could have been used as a spindle, but it is more likely that it too served as a pinbeater.

A further object (context 1542) is fragmentary and bulges noticeably in its middle section. It differs in this respect from pinbeaters and is more akin to Roman spindles (*cf.* Biró 1994, pl LXIII.542). I suspect that it is, in fact, a fragment of the middle section of a Roman spindle.

Pins, Needles and Textile Implements

There remains a good deal of confusion over the differences between pins, needles and textile implements during the middle and late Saxon periods. In broad terms it is possible to distinguish dress pins from needles, and to place a number of other items in the category of textile implements, following definitions advocated by Penelope Walton Rogers (1997). A detailed examination of this question, based on a sample of over 400 objects, is shortly to be published (Riddler, Trzaska-Nartowski and Hatton, forthcoming). Broad dating can be applied to the pins, if not to the needles, which are found throughout the Anglo-Saxon period.

Eight objects fall into these three categories; all of them have been produced from pig fibulae. One object sf 1103 has a modelled head which is similar in form to contemporary examples of copper alloy and it can be regarded as a dress pin of seventh or eighth century date. At the other end of the scale, an object sf 2794 with a recut head is certainly a needle. Two further objects (from contexts 1615 and 1671) have splayed heads cut from the distal end of the bone, and these are best regarded as textile implements. The remaining item sf 2646 is unperforated and has a well-cut spatulate head. It may also be a textile implement, although this is a less secure attribution, and it could be regarded as a spatulate pin. The smaller fragments of shafts sf 2114, sf 324 and sf 2449 cannot be securely identified to object type.

Objects of Uncertain Function: Peg

A fragmentary bone or antler cylinder sf 280 looks to be part of a peg. Similar objects have been recognised at a number of sites, including Botolphs (Steyning), Spong Hill and Ipswich. Some of the Spong Hill examples have notches cut into their middle sections, but their precise function remains uncertain.

The Waste Material

The small quantity of antler from the site stems largely from context 530 (sf 806 and sf 872), the fill of a later Neolithic (Peterborough Ware) pit (531). In addition, there is also a fragment of a tine and part of a beam from a roe deer antler, which shows no obvious traces of working.

Estimate of Potential for Further Study

In one sense, at least, an estimate of the potential of this material is a simple exercise. All of the objects and waste of bone and antler from the site are of individual interest and, given the general lack of publication of middle Saxon material (particularly from rural sites) provision should undoubtedly be made for the adequate discussion and illustration of these finds.

There has been comparatively little work on combs of any date, despite the fact that they are an abundant small find. Approximately 2000 examples are now known from Anglo-Saxon England alone, and work currently in progress will hopefully provide a better understanding of the resource and its potential (Riddler, MacGregor and Trzaska-Nartowski, forthcoming). In the absence of published examples of middle Saxon combs from very many sites at all, the adequate publication of the Dorney assemblage is clearly of some importance. The assemblage itself is reasonably varied and it includes a series of combs which were probably made in the immediate vicinity of the site, and are local to the area. Regional distinctions in comb design are becoming apparent in the early and middle Saxon periods, and this assemblage fills another gap in this developing image. The handled comb fragment is more likely to have come to the site from elsewhere, and possibly from East Anglia. In general terms, I would advocate a similar approach here to that undertaken by myself for Pennyland and Abbots Worthy, or by Nicky Rogers for Fishergate, York, which involves fairly detailed discussion texts for the combs, alongside illustrations of those that survive reasonably well.

The textile implements are of conventional types, although they are useful in quantitative terms, as contributions to a broader view of textile manufacture. They do not require any detailed analysis although they should be integrated with the objects of the same category in other materials and published in the manner of the York groups, from both Fishergate and Coppergate. Indeed, in broad terms the publication of material by functional category should be undertaken, rather than an appraisal by material. This has not happened too often, as yet, for middle Saxon assemblages, although it is well-established in other study areas (eg. Crummy 1983; Margeson 1993).

The peg fragment is an interesting item and it belongs to an object category which is not represented in the standard text on skeletal materials (MacGregor 1985). Its function is unclear, and it should be compared with earlier and contemporary examples from sites listed above, in the hope of clarifying the question of its precise use.

Recommended Research Objectives

The principal point of interest here lies with the definition and examination of a local workshop for comb manufacture. The research objective which is therefore recommended here is the analysis of a regional centre for comb manufacture in the Middle Saxon period. In order to achieve this, the assemblage from this site needs first to be examined in detail, in order to list those characteristics which define this production centre. These have been briefly outlined in Section 1 above. Combs from the site can then be compared with those from the adjacent excavation at Lot's Hole, as well as with earlier discoveries from Staines and Runnymede, to further the regional understanding and to place comb making here in an appropriate context.

Further work

Task	Duration (days)
Cleaning of some comb fragments (Conservator)	5
Detailed Cataloguing of Material {This includes full material identifications}	1
Production of a Publication Text (for all objects and waste)	3

Appendix 11: Fired clay by N Jeffries

Introduction

The assemblage of fired clay from Lake End Road West comprised 3,249 pieces weighing 43,627 g. The assemblage was quantified using the type-series established by the author for the Lot's Hole and Lake End Road East sites to ensure consistency with previous work. The fired clay, loomweight and spindlewhorl occurrence per context by fabric is tabulated below.

The assemblage

A great deal of structural clay was recovered and derives from either buildings or related structures and oven material. Fired clay objects recovered includes 69 loomweights weighing 11,801 g and two spindlewhorls weighing 30 g. Typologically most of the loomweights are bun-shaped and are mid-late Saxon date, although two triangular Iron Age loomweights are also present. Also of note was a mould from context 200 that may be of a late Bronze Age date. A total of eight fabric types were identified by visual examination and were catalogued on the basis of predominant inclusions. These were grouped as follows:

Fabric A: Moderate to dense subangular calcareous inclusions with rare subrounded red and milky quartz. Oxidised red colour.

Fabric B: Rare subangular flint up to 0.8 mm, moderate white quartz and mica. Oxidised red to orange colour.

Fabric C: Occasional subangular flint/chert up to 0.6 mm, moderate micaceous inclusions up to 0.1 mm and rare subangular calcareous inclusions. Reduced grey and brown colour.

Fabric D: Rare subrounded quartz and calcareous inclusions. Oxidised brick red or buff colour.

Fabric E: Occasional subrounded red quartz, and red/ black ironstone. Moderate calcareous inclusions and rare small subrounded milky quartz. Reduced brown to dark grey colour.

Fabric F: Amalgamated during the course of this assessment into fabric D.

Fabric G: Moderate subrounded pebbles up to 0.3 m with subrounded flint up to 0.5 mm and subrounded white and milky quartz up to 0.2 mm. Reduced brown and reddish brown colour.

Fabric H: Small subrounded moderate pebble, quartz and calcareous inclusions. Reduced greyish-brown colour.

Recommendations for further analysis

The spatial plotting of the structural clay from the site, in conjunction with the slag material, would help to locate areas of possible industrial activity and associated structures. The emphasis of this approach would be particularly focused on the Saxon phases. The loomweights and spindle whorls should be treated in a similar fashion. Where loomweights and spindlewhorls are incomplete then an attempt at identifying possible cross-joins would be useful, as this may indicate contemporary backfilling of features. A breakdown of the fabrics within the phasing of the site to determine if there are any changes in the use of morphology and their clay sources within the site chronology would be of use. This would test the hypothesis that wattle and daub construction became more common in the late Saxon period or that conditions for its preservation became more favourable (Hamerow 1993, 66). The above methods can be combined with a study of the geological maps of the area, as well as medieval/post-medieval field/place names that may give a hint of the location of areas traditionally used for clay extraction. The latter two methods worked on the fired clay assemblage from the excavations at Springhead Roman town (Jeffries, forthcoming). No further work is recommended for the indeterminate fired clay.

Comparisons can be made between this fired clay assemblage and others in its immediate environs such as Lake End Road East and Lot's Hole. One notable comparison is that Lake End Road West has almost no withy impressed fragments within its assemblage yet the Lot's Hole assemblage contains a very high percentage, which may be taken to indicate differences in construction techniques. In a more national context the distribution of loomweights according to weight and diameter from the site suggest considerable uniformity and this is directly comparable to the assemblage recovered from Mucking (Hamerow *ibid.* 66).

Further examination of the structural clay to determine its exact function would be of value. Some of the loomweights and spindle whorls are worthy of illustration, as they are complete and of dateable forms, to show the character of the assemblage and any variability.

The analysis for the above has been estimated as taking between 7-8 days. 0.5 days computing time for the spatial analysis of the structural clay, including the spindlewhorls and loomweights, by context and small find number and context, 4-5 days for the illustrations of the latter and 2.5 days for the application of the methods listed above.

Further work

Task	Duration (days)
Analysis, report and drawing briefs	11
Illustration	5

Appendix 12: Metal-working residues by L Keyes

Introduction

This report will deal with the iron slag and determines what ironworking processes it represents and what contribution it can make to the interpretation of the site.

The Material

All 46.2 Kg of the slag were visually examined and categorised on the basis of morphology, density, vesicularity and colour. Each category within each context was also quantified and recorded (see tables below).

Metalworking activity involving iron can take two forms:

Smelting: The manufacture of iron from ore and a flux in a *smelting* furnace, usually (but not always) near the iron ore source. The resulting products are slag and a spongy mass called an unconsolidated bloom consisting of iron with a considerable amount of slag still trapped inside.

Smithing: *Primary smithing* (hot working) of the bloom on a stringhearth, usually near the smelting furnace, to remove excess slag and *Secondary smithing* (hot working) of an iron shape by a smith to turn it into a utilitarian object.

The two activities - smelting and smithing - generate slags, some of which are diagnostic of the process being carried out and others which are not. Only certain types are considered to be strictly diagnostic and can be unambiguously assigned to the particular ironworking process (*e.g.* iron smithing), while other types (undiagnostic) may derive from either iron smelting or smithing and the process can only be determined in the light of any diagnostic evidence from the site. Other types of debris may be the result of various kinds of high temperature activity - including domestic fires - and cannot be taken to indicate ironworking was taking place. If, however, diagnostic ironworking slags are present, the association of the other debris with these can provide more information about the activity.

Diagnostic ironworking slags

Tap slag is the most diagnostic slag of iron smelting. None of this was found in the assemblage but a small quantity of *dense slag* (844 g) was present. This slag is of low porosity and could represent smelting activity also but the small amount and the lack of other evidence for smelting makes it more likely that it represents smithing activity, possibly high temperature working. This slag is often found in small amounts amongst smithing slag assemblages when no other evidence for smelting is present.

The *smithing hearth bottom* (SHB) is the most distinctive product of smithing activity and is unlikely to be confused with smelting slags. Both smithing hearth bottoms and *smithing slag lumps* were the result of high temperature reactions between the iron, iron-scale and silica from either a clay furnace lining or the silica flux used by the smith. The predominantly fayalitic (iron silicate) material produced by this reaction dripped down into the hearth base during smithing, forming smithing slag which, if not cleared out, developed into the characteristic plano-convex-shaped smithing hearth bottom in front of and below the tuyère (the hottest part of the hearth). The hearth bottom would continue to grow and could eventually impede the air flow from the bellows or greatly reduce the area of working. At this stage, or whenever a hearth was cleared out, its hearth bottom was discarded.

Smithing hearth bottoms form the bulk of the slag by weight (36.6 Kg) and by number of examples (104). Because of their larger size and shape there can sometimes be a recovery bias in their favour, but it is not known whether this is the case here. Each smithing hearth bottom was weighed and measured; the individual details are tabulated below.

Smithing hearth bottom dimensions (Lake End Road West)

	Range	Mean
weight (g)	40 - 2084	352
length (mm)	40 - 180	88
width (mm)	30 - 170	66
depth (mm)	10 - 110	41

The majority of the smithing hearth bottoms were heterogeneous in their makeup, with numerous voids left by burnt out charcoal. The slag is frequently so loosely compacted and vesicular that the hearth bottoms begin to break apart when handled; there can be no doubt that much of the smithing slag (almost 5.3 Kg) is from broken smithing hearth bottoms. A small number of the hearth bottoms are, conversely, very dense and heavy (for example: 787 sf 2670 and 1594 sf 2517). The largest hearth bottom (context 697 sf 2615) is well over the average in size and weight while the smallest example (1397 sf 2827) is so tiny, despite being complete, that it may have been produced by copper working (D. Starley, Ancient Monuments Laboratory, pers. comm.). Two examples (478 sf 634 and 406 sf 320) are shaped like hearth bottoms but consist of burnt organic matter rather than iron slag. They are certainly not smithing hearth bottoms.

Iron smithing also produces micro-slags (*hammerscale*) of two types: flake and spheroidal. Flake resembles silvery fish scales and is the product of the ordinary hot working and hammering of a piece of iron where fragments of the oxide/silicate skin flake off from the iron and fall to the ground. Spheroidal are small solid droplets of liquid slag expelled from within the iron during the primary smithing of a bloom or the fire welding of two pieces of iron. Hammerscale is not visible to the naked eye when in the soil but is highly diagnostic of smithing activity, often remaining in the area around the anvil and near the hearth when macro-slugs have been cleared out of the smithy and dumped elsewhere. Since it is generally highly magnetic, its detection with a magnet while excavating can allow the spatial relationship of the anvil to the hearth to be recorded and can pinpoint the smithing activity more precisely (Mills and McDonnell 1992). There was not a great deal of hammerscale present amongst the slag (either in soil adhering to the bulk slags or from the sieved material) and where present it is sparse and very broken. There are, apparently, some soil samples which remain to be sieved and hammerscale is to be sought in these.

Undiagnostic ironworking slag

11.9 Kg of this slag were recovered. It could have been produced by either iron smelting or smithing. The absence of any significant amount of diagnostic smelting slags amongst the assemblage undermines the argument for its being the result of smelting. Many fragments were assigned to undiagnostic because their size did not allow diagnostic recognition and may have come from broken heterogeneous smithing hearth bottoms. Some consist of small fragments of slag dribbles or runs, all of which could originate in the smithing process.

Other debris

Hearth lining can vary from highly *vitrified hearth lining* (VHL) nearest the tuyère region (the region of highest temperature) to burnt clay. By itself it is not diagnostic of smithing activity but association of vitrified lining with other diagnostic material provides support for the process. Such material has been assessed with the fired clay assemblage. However, 334 g was present among the slag, excluding 319 g of burnt clay which was also present. There is evidence that fragments from at least one hearth were found during excavation of pit 878. *Cinder* (1350 g) is formed at the interface between the alkali fuel ashes and siliceous materials and is usually the lighter portion of vitrified hearth lining. Both these categories of material are not, by themselves diagnostic of ironworking but may be attributed to the process by association.

Fuel ash slag is a very lightweight, highly porous, light coloured (whitish or grey-brown) residue produced by a high temperature reaction between alkaline fuel ash and siliceous material such as a clay lining or surface. It can be produced by any high temperature activity where these two constituents are present including domestic hearths, accidental fires, and even cremations. 319 g were present amongst

the iron slag. Also present was 22 g of *ferruginous concretion*, formed as a result of the redeposition of iron hydroxides, similar to the natural phenomenon of iron panning, although the process can be enhanced by iron-rich waste in surrounding archaeological deposits.

One fragment from the rim of a crucible with a trace of copper alloy inside was found amongst the slag from context 880 (sf 991), while in context 946 (sf 1102) was an iron object resembling a key. Both of these were passed to the relevant specialists for assessment.

Ironworking slag and debris from Lake End Road West (by weight in g)

Type	Weight
Burnt bone	3
fired/burnt clay	319
cess	2
charcoal	1
cinder	1350
clinker	4
crucible	20
dense slag	18
ferruginous concretion	22
flint	18
fuel ash slag	31
hammerscale	no significant weight
hearth bottom (not smithing)	26
iron?	132
iron object	16
smithing hearth bottom	36608
smithing slag	5295
undiagnostic slag	1188
vitified hearth lining	334
vitified ceramic	1
Total	46214 g

Summary

Although no structural evidence was found, the slags indicate secondary iron smithing activity on or very near the site at some time in the early to mid-Saxon period. Such was the importance of the smith in the Anglo-Saxon period that in the laws of King Ine, probably set down between AD 688 and 694, we find: "If a nobleman moves his residence he may take with him his reeve, his smith, and his children's nurse." Given the indicators of status which were found in the pits with the slag it is certain the settlement (whatever its size) - if not the chief individual - represented by the pits at Lake End Road West had its own smith. The pit contents form good assemblages which will give more evidence of his craft, including his products and his skill. Several pits have potential smith's tools, including a whetstone (pit 878), in them and iron objects - even nails - may well have been made on site.

Recommendations

The iron objects and any potential tools or smith's stock, as well as fuel (charcoal, coal) should be considered in tandem with the slag when assessing the pits. Knives and other edged tools, if in good condition are excellent candidates for metallurgical analysis but it will be necessary to liaise with the relevant specialist to assess the potential of the material and whether it merits such work.

Further work

Task	Duration (days)
Analysis and report	2

Appendix 13: Glass by C Cropper

The assemblage comprised a total of 13 fragments of glass. Of these 11 are from wine bottles dating to the 18th century or later, one fragment of window glass of a possible 9th century date and a rim fragment from a Saxon vessel of an 8th century date.

The Saxon vessel rim fragment has a cavity and a diameter of c.130 mm. Decoration consists of horizontal, opaque ?white, marvered trails on the rim and below and compares with examples from *Hamwic*, fitting into the later part of the palm cup/funnel beaker sequence (Hunter, 1980, fig 11, 3, no. 4, GL.5).

The fragment of window glass appears to be of a high soda variety, suffering only dulling and very small pitting on both surfaces. A date is hard to pin-point but is potentially 9th century.

Ctx	No fragments	Identification	Part	Colour	Date
446	2	Bottle	Body	Lgt green	C19
446	4	Bottle	Base & Body	Amber	EC18
722	1	Bottle	Body	Lgt green	C18-19
1005	1	Vessel	Rim	Ti bl-gr	M Saxon (C8)
1039	1	Bottle	Base	Green	C18+
1161	1	?Bottle	Chip	Amber	C18+
1240	1	Window		Ti bl-gr	?C9
1415	1	Bottle	Body	Green	C18+
1706	1	Bottle	Rim and neck	Green	LC18-EC19

Further Work

No further work is required on the post-medieval bottle glass. However, the window and vessel fragments are of intrinsic importance. The vessel glass has implications of status and economy as well as fundamental indications of internal trade within the area. Further work is necessary to place this fragment in it's context. The window fragment, if of the same period as the vessel rim, is also important as it is rare and again has important implications on technology, manufacture and source.

Appendix 14: Macroscopic plant remains by R Pelling

Assessment methods

A total of 67 samples from Marsh Lane and the M4 Motorway Diversion (TMOD97) and 132 samples from Lake End Road West (LERW97) were assessed for charred plant remains. The volume of soil processed for each sample ranged from 1 to 70 litres. The samples had been processed using a bulk-water separation machine at the Oxford Archaeological Unit. Flots were collected on a 0.5µm mesh and allowed to air dry. The purpose of the assessment was to establish the quantity and quality of material present and to establish the potential for further work.

Each sample submitted for analysis was examined. The samples were first put through a stack of sieves. Each fraction was then scanned under a binocular microscope at x10 to x20 magnification. The charred seeds and chaff observed were provisionally identified and an estimate of their abundance was made. The scanning of flots will undoubtedly result in the under estimation of smaller seeds and chaff, but does serve to characterise the samples. The results of the assessment for charred seeds and chaff were entered in to a excel spread sheet for the manipulation of data. Summaries of the assessment results are tabulated below.

Charcoal fragments retained in the 4 mm mesh were broken transversely and examined at x40 magnification. While this provides appropriate means for the identification of the ring-porous taxa (*Quercus*), the identification of the diffuse porous taxa (*Pomoideae*, *Alnus/Corylus* sp. and *Prunus* sp.) must be taken as tentative. Summary results of the charcoal assessment are included in the tables.

In addition to charred material, a few waterlogged samples from Lake End Road West were also processed at the Oxford Archaeological Unit by water separation and kept wet. The samples were scanned and predominant species present were noted. The summary results are tabulated below.

Results

Marsh Lane and the M4 Motorway Diversion

A total of 67 samples from Marsh Lane and the M4 Motorway Diversion (TMOD97) were assessed for charred plant remains. The samples were additional to those already analysed as part of the 1997 post-excavation season. Samples were derived from cremation deposits, ditch, gully, pit and post-hole fills and a tree-throw hole.

Middle Bronze Age cremation/ pyre deposits (Marsh Lane East): Ten samples were assessed. Four deposits contained large quantities of charcoal. The charcoal appears to be dominated by *Quercus* sp. (oak) with occasional fragments of *Pomoidiae* (hawthorn, apple, pear etc.). There is no discernible difference between individual cremations. A single *Arrhenatherum* sp. (false oat-grass) tuber, noted in one sample, is the only other category of remains present.

Late Iron Age/ Romano-British ditches (M4 Motorway diversion): Three samples were assessed. All three samples contain small quantities of seeds and chaff and occasional charcoal. Hulled *Triticum* sp. (wheat) including occasional *Triticum spelta* (spelt wheat) and *Hordeum* sp. (barley) were the principle cereals recognised. Grain dominates the samples, while some chaff and weed seeds are also present. Charcoal of *Quercus* (oak), *pomoidiae* (hawthorn, apple, pear, etc.) and *Prunus* sp. (plum, cherry, sloe, etc.) were all present.

Undated ditch fills: Three samples from ditches of unknown date were also assessed. The samples contained large quantities of modern roots but no charred remains.

Post-holes: A total of 36 samples taken from post-holes were assessed. Seven samples contained charred seeds and chaff and charcoal. The cereal component appears to be dominated by grain of *Hordeum* sp. (barley). Charcoal was very common in occasional samples, and generally appears to be quite mixed. *Pomoidiae*, *Quercus* sp., *Prunus* sp. and *Corylus/Alnus* sp. (hazel/ alder) all appear to be

represented. Given the mixed nature of the deposits in some of the samples, it is unlikely that the charcoal is simply the burnt remains of the post.

Prehistoric pits: Three pit samples were assessed. All three contain small quantities of charred seeds and chaff while one sample contained occasional fragments of *Pomoidiae* charcoal. Hulled *Triticum* sp. (wheat) and *Hordeum* sp. (barley) are both represented by grain. No chaff was noted. Also present are occasional seeds of *Linum* (flax/linseed), and fragments of the nut shell of *Corylus avellana* (hazel nut).

Other pits: Two undated pit samples were assessed. One sample contained occasional indeterminate cereal grains.

Tree-throw hole: A single sample was assessed from a tree-throw hole. Very occasional fragments of *Corylus avellana* (hazel) nut shell were present with occasional fragments of *Pomoidiae*, *Quercus* sp. and *Corylus/Alnus* sp. charcoal also present.

Other samples: In addition to the samples displayed in the table, seven samples assessed from gully fills contained no charred plant remains and a sample taken from a pot (context 331) also contained no remains.

Discussion

The charred remains are generally of limited potential in terms of further analysis, although the assessment results can be used in any overall discussion of the site. However, little work has been done on late Iron Age charred plant remains from the area so some work on the Iron Age samples is recommended. The species present are all in keeping with and would be expected in, samples from the represented. *Hordeum* sp. (barley) is present in all phases, while the *Triticum spelta* (spelt wheat) is present in the late Iron age. *Linum usitatissimum* has been recorded nationally from the Neolithic period on, so its presence is also not unusual.

The large quantities of charcoal present in some samples suggests that some charcoal analysis may be useful as *Quercus* sp. clearly dominates the deposits almost exclusively, although the assessment results should be discussed alongside the cremation deposits which were examined previously in order to attempt to see if there is any significance in species utilised for cremations, or if individual trees are used for individual cremations. The diversity of taxa present in the posthole samples suggests that some more detailed analysis will provide a useful picture of wood utilised on the site and the available wood resources within the landscape. Any analysis will be of limited use, however, if the samples are not dated.

Marsh Lane and the M4 Motorway Diversion

Feature Type		Crem.	Ditch	Ditch	PH	Pit	Pit	TTH
Date		MBA	LIA	?	?	PRE	Other	?
No. Samples		10	3	3	36	3	2	1
Total volume (litres)		203	123	54	351	66	44	60
Samples with seeds/ chaff		1	3	0	7	3	1	1
Samples with charcoal		4	3	0	7	1	0	1
<i>Triticum</i> sp.	Hulled Wheat grain	-	++	-	-	+	-	-
<i>Triticum spelta</i>	Spelt Wheat grain	-	+	-	-	-	-	-
<i>Triticum</i> sp.	Wheat grain	-	-	-	+	-	-	-
<i>Hordeum</i> sp.	Barley grain	-	++	-	++	++	-	-
Indet.	Indeterminate cereal grain	-	+	-	+	+	-	-
<i>Triticum spelta</i>	Spelt wheat glume base	-	+	-	-	-	-	-
<i>Triticum</i> sp.	Hulled wheat glume base	-	++	-	-	-	-	-
<i>Hordeum</i> sp.	Barley rachis	-	+	-	-	-	-	-
Weed seeds		-	++	-	+	++	-	-
<i>Linum usitatissimum</i>	Flax/linseed	-	-	-	-	++	-	-
<i>Corylus avellana</i>	Hazelnut shell fragments	-	-	-	-	+	-	+
<i>Arrhenatherum</i> sp.	False oat-grass. tuber	+	-	-	-	-	-	-

CHARCOAL								
Pomoidiae	Hawthorn, apple, pear etc.	+	+	-	+++	+	-	+
<i>Quercus</i> sp.	Oak	++++	+	-	+++	-	-	+
<i>Prunus</i> sp.	Plum, cherry, sloe, etc.	-	+	-	++	-	-	-
<i>Corylus/Alnus</i> sp.	Hazel/alder	-	-	-	+++	-	-	+

Lake End Road West

Soil samples were taken for the analysis of charred plant remains from features of Neolithic, Bronze Age, late Iron Age, Romano-British and Saxon date. The majority of samples were taken from the fills of large middle Saxon pits. The volume of soil taken ranged from 10 to 60 litres. The samples were processed using a bulk water separation machine at the Oxford Archaeological Unit. A total of 132 samples were submitted for assessment of their potential for analysis of charred macroscopic plant remains.

Prehistoric Samples

A total of 22 samples were assessed from prehistoric features ranging in date from the Neolithic to the Bronze Age.

Late Neolithic Pits

Twenty samples were assessed from a total of nine pits (pits 528, 600, 605, 684, 953, 1050, 1222, 1341, 1901). Nut shell fragments of *Corylus avellana* are present in large quantities in the majority of samples. Cereal remains are present in seventeen samples in small numbers. Occasional free-threshing *Triticum* sp. (wheat) is present in seven samples (contexts 529, 530, 531, 601, 602, 603 and 1066). Hulled *Triticum* sp. is also present in five samples (contexts 531, 606, 954, 1066 and 1244), represented by both grain and glume bases. Also present are less well preserved indeterminate *Triticum* sp. grains and *Hordeum* sp. (barley) grain. Occasional grains of *Avena* sp. (oats) are likely to be wild. A single cultivated legume was noted in context 1224. Weeds were occasionally present, notably common arable/ruderal species common in Neolithic assemblages such as *Chenopodium album* (fat hen). Charcoal was present in the majority of samples and included Pomoideae (hawthorn, apple, pear etc.) *Quercus* sp. (oak) and *Corylus/Alnus* sp. (hazel/alder).

Bronze Age

Two samples were assessed from Bronze Age ditches (Ditches 560 and 1908). Very occasional cereal grains were present, notably *Hordeum* sp. (barley) but also occasional *Triticum* sp. (wheat) grains. No charcoal was present and no *Corylus avellana* nut shell fragments.

Late Bronze Age/early Iron Age

A single sample was assessed from a feature tentatively dated as late Bronze Age/early Iron Age (pit 1646, context 1645). Charred remains consisted of occasional poorly preserved weed seeds and a small amount of Pomoideae (hawthorn, apple, pear etc.) and *Quercus* sp. (oak) charcoal.

Late Iron Age/early Romano British:

Two samples were assessed (pits 488 and 586). Cereal remains were present in context 488 but in small quantities. Grain of *Triticum spelta* (spelt wheat), indeterminate hulled *Triticum* sp. and hulled *Hordeum* sp. (barley) are all present. Pomoideae (hawthorn, apple, pear etc.) charcoal is quite common. No weeds were noted.

Romano British (pit 1262)

Five samples were assessed for charred plant remains (contexts 1105, 1913, 1914, 1915 and 1916). A further two samples were assessed for charred and waterlogged plant remains (contexts 1310 and 1732). Very occasional charred remains were found in five samples. Context 1732 produced waterlogged remains only and context 1916 contained no seeds or chaff at all. *Hordeum* sp. and *Triticum* sp. were present, including *Triticum* cf. *spelta* (spelt wheat) which was identified on the basis of glume bases and grain. No free-threshing grains of *Triticum* were recognised. Occasional grain of *Avena* sp. and occasional cultivated legumes were recognised. A mineralised seed of *Ficus carica* (fig) was also present (context 1913). The samples contained no charcoal. The two samples from the bottom fills of the pit contain waterlogged material. This pit is considerably deeper than the large middle Saxon pits, thus the bottom of the pit is below the water-table.

The Definitively sampled middle Saxon pits

Seven of the large Saxon pits were selected for definitive sampling. A sample of 10 to 40 litres was processed from each major fill of each pit. The pits are discussed individually. In most cases the greatest category of remains (other than charcoal) is grain. Chaff was generally noted in small quantities and weed seeds were rare.

Pit 1266:

Thirteen samples were assessed (contexts 1085, 1126, 1257, 1268, 1125/1127, 1269, 1270, 1291, 1288, 1292, 1289, 1290 and 1293). A low density of charred remains is present throughout the deposits. *Hordeum* sp. (barley), including hulled *Hordeum vulgare* (six-row barley) and *Triticum* sp. (wheat) were the principal cereal grains recognised. The majority of the *Triticum* grains appear to be derived from a free-threshing variety. In addition, however, were two grains of hulled *Triticum* (emmer or spelt wheat) in context 1288. *Secale cereale* (rye) was also fairly frequent. Occasional cultivated legumes (pea, bean etc.) were also present. An unusual and possible high status find is a mineralised seed of *Ficus carica* (fig). Weed seeds were mostly common arable species such as *Anthemis cotula* (stinking mayweed) and *Agostemma githago* (corn cockle). Charcoal was very common throughout the pit, dominated by *Quercus* sp. (oak), *Prunus* sp. (plum, cherry, sloe etc.) and Pomoideae (hawthorn, apple, pear etc.). One sample, taken from context 1125/1127, was slightly richer with over 100 grains. The species present are consistent with the remaining deposits.

Pit 1328:

Four samples were assessed (contexts 1285, 1323, 1327 and 1391). Occasional charred remains were noted throughout the deposits and are fairly frequent in context 1323. Free-threshing *Triticum* sp. was most commonly recognised, while hulled *Hordeum* sp. (barley), was also present. Two glume bases of *Triticum* sp. (spelt/emmer wheat) were noted in context 1323. Several cultivated legumes were also recorded. Weeds were present in low numbers and include leguminous weeds, such as *Medicago* sp. (medick), *Trifolium* sp. (clover) and *Vicia/Lathyrus* sp. (vetches, tares etc.). Common arable/ruderal

species such as *Rumex* sp. (docks) and *Polygonum* sp. (knotgrass) were also present. Large quantities of charcoal were present including *Quercus* sp., *Prunus* sp. and Pomoideae.

Pit 878:

Six samples were assessed (contexts 879, 880, 890, 952 and 965). Low numbers of charred remains were recorded. In all cases the numbers of grain present was less than 50. *Triticum* sp., mostly free-threshing and *Hordeum* sp. were present in similar numbers. Occasional grains of *Secale cereale* (rye) and *Avena* sp. (oats) were also present. Occasional cultivated legumes included a possible *Vicia faba* (broad bean). Occasional weed seeds were noted, including common arable/ruderal species. Charcoal was not common although occasional fragments of *Quercus* sp. and *Prunus* sp. were noted.

Pit 1155:

Five samples were assessed (context 1016, 1169, 1170, 1171 and 1173). A very low concentration of charred remains was noted in the samples. Grains of *Hordeum* sp. were most common, while some wheat including grain of free-threshing *Triticum*, and occasional grains of *Avena* sp. (oats) were also present. Chaff and weed seeds were very rare. Occasional rachis internodes of *Hordeum/Secale* sp. (barley/rye) were noted. Charcoal is common and includes Pomoideae, *Quercus* sp. and *Prunus* sp.

Pit 1256:

Five samples were assessed (contexts 1135, 1157, 1177, 1253 and 1255). Low concentrations of remains were noted in all samples. Occasional cereal grains included hulled *Hordeum* sp. free-threshing *Triticum* sp., *Secale cereale* and *Avena* sp. Also present were occasional endocarp of *Malus sylvestris* (apple) including whole fragments of core. Small quantities of chaff include free-threshing *Triticum* sp. rachis. Occasional cultivated legumes were present. Weed seeds include *Anthemis cotula* (stinking mayweed) and *Vicia/Lathyrus* sp. (vetch/tare). Very large quantities of charcoal were present including Pomoideae, *Quercus* sp. and *Prunus* sp.

Pit 422:

Five samples were assessed (contexts 423, 476, 481, 439 and 599). Small numbers of remains include occasional grain of *Hordeum* sp. with some free-threshing *Triticum* sp. *Secale cereale* and *Avena* sp. Two fragments of apple core containing identifiable endocarp fragments, and occasional fragments of *Corylus avellana* (hazel nut) were also recorded. No chaff and no cultivated legumes were noted. Weed seeds were infrequent and include seeds of *Bromus* sp. (brome grass) and other grasses. Charcoal was present in moderate quantities and includes Pomoideae, *Quercus* sp. and *Prunus* sp.

Other middle Saxon pits

A total of 41 samples were assessed, taken from pits of middle Saxon date. Of these samples, 33 contain charred seeds and chaff, 19 of which contain at least 50 items. Free-threshing *Triticum* sp. (wheat) and hulled *Hordeum* sp. (barley) were present as the principal cereal grains in each sample containing identifiable charred remains. Free-threshing *Triticum* sp. rachis was noted in 7 samples, and in two (contexts 798 and 187) was identifiable as hexaploid, *Triticum aestivum* type (bread type wheat). *Secale cereale* (rye) was present in 15 samples, including occasional rachis internodes, and *Avena* sp. (oats) were very common in total, present in 19 samples. An unexpected find is a large number of grain and glume bases of hulled *Triticum* sp. including well preserved *Triticum dicoccum* (emmer wheat). Grain of hulled *Triticum* is present in at least 12 samples, while glume bases of *Triticum dicoccum* are present in at least 6 samples (contexts 406, 624, 787, 798, 799, 1304). It is likely that the true numbers are much greater still but that the number of glume bases have been underestimated.

Cultivated legumes were present in ten samples. Among the better preserved legumes are possible *Pisum sativum* (pea), *Vicia sativa* subsp. *sativa* (cultivated fodder vetch) and cf. *Vicia faba* (broad bean). A final major cultivated crop represented is *Linum usitatissimum* (linseed/flax). A significantly large number of flax seeds are present in at least six samples, while flax capsule fragments are also occasionally present. Two samples in which large quantities of flax and emmer wheat were present also

contain large quantities of 'herbage', that is straw (cereal or other grasses) and other unidentifiable vegetative fragments (pit feature 687). A large number of arable and/or ruderal weed seeds were present including *Anthemis cotula* (stinking mayweed) and *Agrostemma githago* (corn cockle). Large quantities of charcoal were also present in several samples, dominated by Pomoideae (hawthorn, apple, pear etc.) *Prunus* sp. (plum, cherry, sloe etc.) and *Quercus* sp. (oak).

Undated Samples

Sixteen samples were assessed from undated features. Ten samples contained charred seeds and chaff, one from a ditch fill (ditch 283) and the remaining nine from eight pits (pits 356, 358, 1311, 1351, 1637, 1734, 1961 and 2075). One sample contains useful quantities of remains (context 406 from pit 356), with both free-threshing and hulled *Triticum* sp. (both emmer and spelt wheat), oats and rye. This sample is similar in character to the larger samples from the middle Saxon pits. Free-threshing *Triticum* sp. was also recognised from a further three samples (contexts 280, 1312, 1735), while hulled wheat was also noted in contexts 587, 1312, 1352 and 2070. Occasional legumes and nut shell fragments of *Corylus avellana* (hazel) were also noted.

Discussion

The prehistoric assemblages generally appear to be consistent with present knowledge of the Neolithic and Bronze Age in southern Britain. Some cereal cultivation is suggested while the large quantities of hazelnut shell is indicative of a collected woodland component within the diet. The late Neolithic pits offer some potential for detailed identification and analysis in terms of the quantity of the remains present. The material present in the other prehistoric samples is not sufficient for detailed analysis, although the results will be a useful component of the overall study. The present assessment and future analysis of selected Neolithic pit samples will provide evidence which, together with the samples analysed from the 1996 excavations and the Marsh Lane sites will enable a useful study to be done of the economic development of the region from the Neolithic into the later prehistoric period.

The late Iron Age and the Romano-British samples offer no potential for further analysis although the assessment results should be incorporated into the overall study.

The quantity and quality of material in the Saxon samples is such that some very useful and informative work is possible. The middle Saxon samples are exceptionally rich with a very wide range of cultivars, which is unusual for the period. The samples complement and build on the information gained from the 1996 excavations at Lake End Road East and Lot's Hole and will provide a useful general picture of the development of the Saxon arable economy.

Potentially one of the most interesting and informative aspects of the Saxon samples is the presence of significant quantities of glume bases and grains of emmer wheat in several middle Saxon samples. Emmer wheat is the principle hulled wheat recovered for much of the prehistoric period of southern Britain but is replaced by spelt wheat by the early or middle Iron Age. Hulled wheats are generally replaced by free-threshing wheat at the beginning of the Saxon period. Free-threshing wheats are then cultivated throughout the medieval period and remain the principle wheats grown in Britain today. The occurrence of emmer in middle Saxon assemblages cannot be attributed to continuity of cultivation, but rather must represent a local reintroduction or imported grain, possibly from the Mediterranean region. There are no published accounts of emmer appearing in samples of such a late date from sites within Britain and as such its occurrence is of national significance. Also of interest is the presence of *Vicia sativa* subsp. *sativa* (fodder vetch) which, if the identification is confirmed, is a very early record. There is a strong possibility that the emmer is present as a contaminant and it is very important that its date is confirmed. It is therefore recommended that well preserved emmer glume bases from one sample are submitted for an accelerator radiocarbon date before any further analysis is carried out. If a Saxon date is confirmed then it is recommended that 12 to 16 samples be analysed in full.

Charred Plant Remains: Prehistoric - Romano-British Pits

Date		L.Neol	BA	LBA/EIA	LIA/ERB	RB
No. samples		20	2	1	2	8
Samples with Remains		20	2	1	1	6
No. samples with >50 items		6	0	0	0	0
Total volume (litres)		675	80	?	60	250
<i>Triticum</i> sp.	Free-threshing Wheat grain	++	-	-	-	-
<i>Triticum spelta</i>	Spelt grain	-	-	-	+	+
<i>Triticum</i> sp.	Hulled Wheat grain	++	-	-	+	-
<i>Triticum</i> sp.	Wheat grain	++	+	-	+	+
<i>Hordeum</i> sp.	Barley grain	+++	++	-	+	+
Cerealia indet.	indet grain	++	+	-	+	+
<i>Triticum spelta</i>	Spelt Wheat glume base	-	-	-	-	+
<i>Triticum</i> sp.	Hulled Wheat glume base	++	-	-	+	-
<i>Hordeum</i> sp.	Barley rachis	+	-	-	-	-
Large legume		+	-	-	-	+
<i>Corylus avellana</i>	Hazel nut shell fragments	++++	-	-	-	-
<i>Ficus carica</i>	Fig mineralised seed	-	-	-	-	+
Weeds		+	+	+	-	+
Pomoideae	Hawthorn, Apple, Pear etc.	+++	-	+	+++	-
<i>Quercus</i> sp.	Oak	+	-	+	-	-
<i>Corylus/Alnus</i> sp.	Hazel/Alder	++	-	-	-	-

+ = 0-10 items; ++ = 11-50 items; +++ = 51-100 items; ++++ = >101

Charred Plant Remains: Definitively Sampled Pits

Date		mid-Sax						Roman (3rdC-4thC)
Feature	1266	1155	878	1328	1256	422	1262	
No. samples	13	5	6	4	5	5	7	
Samples with charred remains	12	5	6	4	5	5	5	
No samples with >100 items	1	0	0	1	0	0	1	
Total Volume	415	180	217	140	200	170	220	
<i>Triticum</i> sp.	Free-threshing Wheat	++	+	++	++	++	+	-
<i>Triticum spelta/dicoccum</i>	Spelt/Emmer Wheat	+	-	-	-	-	-	+
<i>Triticum</i> sp.	Wheat grain	++	+	++	+	+	+	++
<i>Hordeum</i> sp.	Barley grain	++	++	++	++	++	++	+
<i>Secale cereale</i>	Rye grain	++	-	+	-	+	+	-
<i>Avena</i> sp.	Oats	+	+	+	-	+	+	+
Indet	indet. grain	++	++	++	+	+	++	+
<i>Triticum</i> sp.	Free-threshing wheat rachis	-	-	-	+	+	-	+
<i>Triticum spelta</i>	Spelt glume base	-	-	-	-	-	-	+
<i>Triticum spelta/dicoccum</i>	Spelt/emmer glume base	-	-	-	+	-	-	+
<i>Hordeum</i> sp.	Barely rachis	+	-	+	-	-	-	-
<i>Hordeum/Secale</i> sp.	Barley/Rye rachis	++	+	+	-	-	-	-
<i>Pisum/Vicia/Lathyrus</i> sp.	Cultivated Pea/Vetch	+	-	+	++	+	-	+
cf. <i>Vicia faba</i>	cf. Field Bean	-	-	+	-	-	-	-
<i>Ficus carica</i>	Fig, mineralised	+	-	-	-	-	-	+
<i>Malus sylvestris</i>	Apple endocarp	-	-	-	-	+	+	-
<i>Malus sylvestris</i>	Apple seed	-	-	-	-	+	-	-
<i>Corylus avellana</i>	Hazel nut shell fragment	-	-	-	-	-	+	-
Weeds		+	+	+	+	+	+	+
Pomoideae	Hawthorn, apple, pear, etc.	++++	++	-	++	++++	++	-
<i>Quercus</i> sp.	Oak	++++	++++	+	+++	++++	++	-
<i>Prunus</i> sp.	Plum, Sloe, Cherry etc.	++++	++	+	+++	++++	+	-

+ = 0-10 items; ++ = 11-50 items; +++ = 51-100 items; ++++ = >101

Charred Plant Remains: Saxon and Undated Pit Samples

	Date	undated	mid-Sax
	No. samples assessed	17	41
	No. with charred items	10	66
	No. with >50 items	2	19
	Total volume	477	1421
<i>Triticum</i> sp.	Free-threshing Wheat	++	++++
<i>Triticum spelta/dicoccum</i>	Spelt/emmer Wheat	++	++++
<i>Triticum</i> sp.	Wheat grain	+++	++++
<i>Hordeum</i> sp.	Barley grain	+++	++++
<i>Secale cereale</i>		-	+++
<i>Avena</i> sp.	Oats	++	++++
Indet	indet. grain	+++	++++
<i>Triticum</i> sp.	Free-threshing Wheat rachis	-	++
<i>Triticum</i> sp. hexaploid	Bread type Wheat rachis	-	++
<i>Triticum dicoccum</i>	Emmer glume base	+	++++
<i>Triticum spelta</i>	Spelt glume base	+	+
<i>Triticum spelta/dicoccum</i>	Spelt/Emmer glume base	++	++++
<i>Hordeum</i> sp.	Barley rachis	-	++
<i>Hordeum/Secale</i> sp.	Barley/Rye rachis	-	+
<i>Secale cereale</i>	Rye rachis	-	++
Chaff	Other Chaff	-	+
<i>Pisum/Vicia/Lathyrus</i> sp.	Cultivated Pea/Vetch	+	++++
cf. <i>Pisum sativum</i>	cf. Pea	-	+
cf. <i>Vicia sativa</i> subsp. <i>sativa</i>	cf. Cultivated Fodder Vetch	-	+
cf. <i>Vicia faba</i>	cf. Field Bean	-	+
<i>Vitis vinifera</i>	Grape seed	-	-
cf. <i>Prunus</i> sp.	Plum. Cherry, Sloe etc.	-	+
<i>Corylus avellana</i>	Hazel nut shell fragments	+	+
<i>Linum usitatissimum</i>	Flax seed	-	++++
<i>Linum usitatissimum</i>	Flax capsule fragments	-	+
cf. <i>Allium</i> sp.	cf. Garlic type tuber	-	+
Weeds		+++	++++
Herbage		-	++++
Pomoideae	Hawthorn, apple, pear etc.	++++	++++
<i>Quercus</i> sp.	Oak	++++	++++
<i>Prunus</i> sp.	Plum. Sloe, Cherry etc.	++++	++++
+ = 0-10 items; ++ = 11-50 items; +++ = 51-100 items; ++++ = >101			

Waterlogged Remains

	Feature	1351	1262	1262
	Date	??	R-B	R-B
	Context	2188	1310	1732
	Sample	159	109	110
	Volume	10	10	10
<i>Papaver rhoeas/dubium</i>	Field/Long-Headed Poppy	+	-	-
<i>Silene</i> sp.	Campion	+	+	-
<i>Stellaria media</i> agg.	Chickweed	+	-	+
<i>Montia fontana</i>	Blinks	-	+	+
<i>Chenopodium album</i>	Fat Hen	+	-	-
<i>Chenopodium</i> sp.	Fat Hen/Goosefoot	+	-	++
<i>Atriplex</i> sp.	Orache	+	-	-
<i>Rubus</i> sp.	Blackberry, Raspberry etc.	+	-	-
<i>Aethusa cynapium</i>	Fool's Parsley	+	-	-
<i>Torilis japonica</i>	Upright Hedge-Parsley	+	-	-
<i>Polygonum aviculare</i> agg.	Knotgrass	-	-	++
<i>Rumex</i> sp.	Docks	+	-	-
<i>Urtica urens</i>	Small Nettle	+	++	++
<i>Urtica dioica</i>	Common Nettle	+	++	++
<i>Hyoscyamus niger</i>	Henbane	+	-	-
<i>Lamium</i> sp.	Dead nettle	-	+	+
Labiata		+	-	-
<i>Onopordum acanthium</i>	Scotch Thistle	-	+	+
<i>Sambucus nigra</i>	Elder	+	-	-
<i>Carex</i> sp.	Sedges	+	+	++

+ = 0-10 seeds; ++ = 11+ samples

Further work

Task	Duration (days)
<i>Marsh Lane and the M4 Motorway diversion (TMOD97)</i>	
Analysis of charcoal from 4/5 post hole samples (technician)	5
Inclusion of charcoal from cremations in report (specialist)	0.5
Analysis of Late Iron Age plant remains (technician)	2
Integration assessment results into overall report (specialist)	2
<i>Lake End Road West</i>	
C14 dating of emmer glume bases from one sample	-
Sorting of 5-6 samples from Neolithic deposits (technician)	2.5
Identification/ analysis of Neolithic remains (specialist)	2
Sorting of 12-16 middle Saxon samples (technician)	30
Identification/ analysis of middle Saxon remains (specialist)	30
Integration of report with 1996 results (specialist)	10

Appendix 15: Waterlogged wood by N Mitchell

All of the waterlogged the wood tabulated below comes from Lake End Road West, from a structure (1750) at the bottom of a later Roman pit, which is very likely to have been a well (1262). Most of the pieces have been kept for post-excavation examination. The conditions were not permanently waterlogged and the wood is in either poor or fair condition.

The structure consists of small oak stakes arranged in a pointed oval shape in plan. Three *in situ* rods remain on the outer side of these and two of them, 1750/11 and /12, were still woven around an upright sail, 1750/13. It appears that these two rods are the horizontals of a probably pre-fabricated, wattle-panel that was held in place between the stakes and the backfill of the construction pit (1262). This would also be the easiest method of construction in what must have been difficult and waterlogged conditions.

All the wood is roundwood except stakes 1750/2 and 1750/8 and most are from trees between the ages of 15 and 30 years old. They all appear to be fast grown, but with irregular growth-ring widths suggesting that they may have grown in open, or at least optimum, conditions. These were sharpened to a point with a very flat-faced axe which would be consistent with the Roman dating of the well.

Table showing wood retained for post-excavation. (only lengths are taken from excavation notes).

Context / Wood no.	Function	Condition	Conversion	Bark	Heart/ Sap-wood	Dimensions (mm)	Tool-marks	Species
1750/1	stake	poor	round	none	hw	320x36	3, to tip	oak
1750/2	stake	fair	radial	none	hw + sw	190x75x30	2, faint	oak
1750/3	stake	poor	round	yes	hw + sw	215x(58x76)	none	oak
1750/5	stake	fair	round	none	hw + sw	270x53	5, to tip	oak
1750/6	stake	fair	round	yes	hw + sw	250x88	7, to tip	oak
1750/8	stake	poor	modified -half	yes	sw	530x41	none	oak
1750/9	rod	poor	round	yes	sw	210x40	none	oak
1750/10	stake	fair	round	none	hw + sw	120x(46x35)	5	oak
1750/11	rod	poor	round	yes	sw	660x(21-29)	none	non-oak
1750/14	rod	poor	round	yes	sw	300x25	none	non-oak

Further work

Task	Duration (days)
Species identification of 1750/11 and 1750/14, and analysis for woodland management. Possibly small find 340, see below, will also require species identification.	0.5
Write report for publication including the few pieces of wood from 1750 structure which were recorded in the field but not retained for post-excavation and not included in the assessment.	
The report should also include small find 340 (Sample no. 32 from context 478). This charred piece is from a Saxon deposit and has been left undisturbed in case it is required for radiocarbon dating.	0.5
Total further work:	1 day

Appendix 16: Animal bones by A Powell and K Ayres*Lake End Road*

The animal bones were assessed on 14th and 15th of January at the Oxford Archaeological Unit. A total of 4566 bones were examined, accounting for 20% of the total assemblage. The assessment concentrates on hand retrieved material, although sieved material was also scanned and is considered in the recommendations.

The total number of identified and unidentified bones for each context was recorded, as was the presence of burnt, gnawed and butchered bone. The presence of ageing and sexing information was also recorded.

Spot dates were provided for each context, and the total number of fragments recorded for each period is tabulated below.

Period	No.Frags.	% identifiable	Est.total	Est.total ID.
Bronze Age?	5	0	25	0
Early Iron Age	13	39	65	25
Late Iron Age/ Romano-British	347	24	1735	416
Romano-British	42	3	210	6
Early/ mid-Saxon	3340	35	16700	5845
Early/ mid-Saxon?	363	44	1815	799
Post-medieval	6	17	30	5
Undated	450	41	2250	923
Total	4566	35	22830	8019

The majority of the material (3340 fragments) was dated to the early/ mid-Saxon period (7th-9th centuries), with provisional Saxon dating for a further 363 fragments. Other contexts were provisionally dated to the Bronze Age through to the post-medieval. The following discussion concentrates on the Saxon bone assemblage.

Condition of the bone

The condition of the bone was assessed and graded on a scale of 1 to 5. Bone graded as 1 was in excellent condition with little or no post-depositional damage, and that graded as 5 could only be identified as 'bone'. The condition of the bone by context is tabulated below. The majority of the bone, particularly from the Saxon contexts, was moderate to good, with some in excellent condition.

Period	Condition				
	1	2	3	4	5
Bronze Age?	-	-	-	-	1
Early Iron Age?	-	1	1	2	1
Late Iron Age/ Romano-British	6	4	4	5	6
Romano-British	-	1	-	-	-
Early/ mid-Saxon	20	42	33	13	2
Early/ mid-Saxon?	6	5	3	3	-
Post-medieval	-	-	-	1	-
Undated	6	4	3	3	3
Total	38	57	44	27	

Species representation

The relative abundance of the main species by percentage is tabulated below. Those periods not tabulated had high percentages of unidentified fragments and few domestic species. In all periods, cattle remains were the most frequent and in the Saxon period this was followed in similar proportions by sheep and pig, with a smaller quantity of horse bone.

Period	Cattle	Sheep/goat	Pig	Horse
Late Iron Age/ Romano-British	72	25	2	1
Early/ mid-Saxon	57	20	18	5
Early/ mid-Saxon?	84	5	6	5
Undated	47	16	5	32

Other species present in the Saxon period include dog, cat and domestic fowl. A number of bones of wild bird species were recorded, as were bones of fish and amphibia. A large red deer (*Cervus elaphus*) antler which had been shed was recorded from the Romano-British period, and a rodent bone from a possible early Iron Age context. Context 2118, which is as yet undated, contained a partial kitten skeleton and a pair of goat horn cores.

General comments

Saxon

The good condition of the bones in the Saxon period means that little information about the assemblage has been lost post-deposition. Mandibles of the main domestic species were available for ageing, and fusion information was retained on long bones in the majority of the contexts. Some sexing information was also provided by pig and horse mandibles and the presence of spurs on domestic fowl. The good condition of the material would also allow the measurement of bones, including long bones and horn cores of cattle and sheep. A fragmented cattle skull from context 2235 could be reconstructed and measurements taken.

Evidence for gnawing and butchery activities was also frequently observed and burnt material was identified in a smaller number of contexts.

Articulated bones of cattle and horse were identified, as were a smaller number of pathological specimens such as a cattle metatarsal (context 3110 and ulna (context 216).

Other periods

The smaller amount of material from contexts provisionally dated to the Bronze Age, early Iron Age and post-medieval periods provided limited ageing or taphonomic information. Contexts dated to the late Iron Age/ Romano-British period however, had available fusion and dental data, measurable bones and evidence of gnawed and burnt bones. A pathological cattle jaw (context 280) was also identified.

Sieved material

One box of sieved bones was examined. Identifiable bone was observed from the majority of contexts from both >10 mm and the 10-4 mm samples (83 bags and 64 bags respectively). The > 10 mm contained fragments of cattle, sheep, and pig bones, and provided some dental and fusion data for these species. Cat, bird, fish and amphibia were also represented. In the 10-4 mm samples bird, amphibia and fish bones were again identified as were a number of pig teeth and a small mammal femur (context 1445). A beaver tooth was identified from an early/ middle Saxon context (context 952, sample 115).

Discussion

The predominance of cattle in the Saxon assemblage has been recorded at other sites of the period, such as Wraybury, Berkshire, (Coy 1987) and Audlett Drive, Abingdon (Levitan 1992). A similar predominance was noted in the Saxon assemblage from Lake End Road East (Tranche 1) (Powell 1997). Clutton-Brock (1976) states that although pig bones are found in low numbers on sites of the period, the species may have outnumbered all other domestic animals. It is therefore of interest to note the high proportion of pig in the assemblage. This was also noted at Lake End Road (East) where pig had a higher fragment count than sheep and predominated in the minimum numbers count. The limited number of animal bone assemblages recorded from the area emphasises the contribution new material would make, particularly as

the assemblage is larger than those nearby sites mentioned above, except for the site at Wraysbury, which is likely to be of later date.

Recommendations

- 1) It is recommended that the Saxon material be analysed in full as the assemblage will make a valuable addition to our knowledge of Saxon rural husbandry in the area. The good condition of the bone will allow ageing and sexing of main domesticates and will also provide evidence on butchery, gnawing and burning. Measurements should also be taken where possible.
- 2) The majority of sieved contexts provided material which included some ageing and sexing information and species not present in the hand retrieved assemblage, such as beaver and fish. It is therefore recommended that the processing of the material is continued.
- 3) Analysis can be undertaken on material from different context types such as pits and ditches, and the determination of specific disposal activities.
- 4) The assemblage, in combination with the assemblages from the Tranche 1 excavations at Lake End Road and Lot's Hole, can then be compared with the large assemblage from Wraysbury and other sites both regionally and nationally, in order to answer specific questions about the economy and status of the site in the middle Saxon period.
- 5) Undated contexts may be incorporated into the analysis if more definite dating is available.
- 6) No further analysis is recommended for assemblages from other periods.

Costs

Task	Duration (days)
Analysis of early/middle Saxon material and provisionally dated early/mid-Saxon material	152

Appendix 17: Human bones by A Boyle

All identifiable *in situ* human remains discovered during Tranche 2 derive from Marsh Lane East. One fragment of unidentifiable burnt bone from Marsh Lane West (context 1008, the fill of a tree throw hole) and another fragment from The M4 Motorway Diversion (fill 614 of gully 611) are incorporated with the Marsh Lane material.

This assessment also includes an appraisal of human remains found during the TVAS evaluation of Agar's Plough and Lake End Road West in 1991.

Marsh Lane

Introduction and quantification

A group of probable cremation pits was located along the south-eastern side of the excavated area. They were quite sparsely distributed and the level of plough truncation affecting the existing features suggests the possibility that others may have been completely destroyed.

The features

An elliptical pit (89) had two identifiable fills (18 and 93), both of which contained cremated bone and charcoal. Two small finds (7 and 8) were recovered from fill (18).

A heavily disturbed irregular pit (90) contained a very small quantity of cremated bone, charcoal and burnt flint within its single fill (91). A single cremation deposit was recovered from a shallow circular pit (132). There were two distinct fills (143 and 133) though unfortunately these were sampled as one. Substantial quantities of charcoal were also present in both fills.

A deposit of cremated bone was recovered from the fill (144) of a gully (146). Charcoal was also present. Pit (189) was recorded as cutting the fill (144).

A circular pit (200) had two fills (201 and 202) and the primary one (202) contained a substantial amount of cremated bone and charcoal. Fired clay was recovered from the secondary fill (201) which was described as reddened due to burning.

Posthole 203 produced 1g of cremated bone which was not identifiable.

The secondary fill (207) of a circular pit (206) contained a deposit of cremated bone, fired clay and a burnt flint.

The fill (209) of a badly damaged middle Bronze Age Bucket Urn (210) contained cremated bone, charcoal and fired clay. Two further fills (214 and 215) were also identified outside the vessel and these too contained cremated bone and charcoal.

The fill (213) of pit (212) contained cremated bone, middle Bronze Age pottery sherds and charcoal. A further deposit (216) containing cremated bone and charcoal has been interpreted as a spread of material around the edge of the pit representing plough disturbance.

Pit 212 appeared to be cut into a tree-throw hole (217). Cremated bone and charcoal was recovered from the fill (303) of a posthole (304), the fill (308) of an oval pit (309) and the fill (333) of a circular pit (334).

It is noteworthy that a middle Bronze Age Bucket Urn (332) which had been placed within a pit (335) yielded no cremated bone. The fill (614) of gully (611) contained 1 g of cremated bone as well as fired clay and flint.

The fill (1008) of a tree-throw hole contained the same quantity of cremated bone as well as worked flint and possible Neolithic pottery.

A deposit of material (157) within a gully (156) was described as a cremation although no burnt bone was identified.

Discussion and conclusions

Deposits of cremated bone derived from nine pits, two postholes, two gullies and a tree-throw hole. Pottery of middle Bronze Age date was present in three of the pits (210, 211, 212) while the remaining six appeared to contain unenclosed deposits of cremated bone. All of the latter survive to a greater depth than those containing pottery so its absence in these features is unlikely to be due to truncation. The majority of the deposits of cremated bone are very insubstantial and only pits 89, 132, 200 and 334 contained more than 100 g. Not surprisingly these were also the pits which had survived to the greatest depths (0.13-0.21 m). This group of pits probably represent the badly disturbed remains of a middle Bronze Age cremation cemetery.

Gully 611 contained pottery of late Iron Age/early Roman date while the remaining features are undated.

Cremation details

Context	Age	Sex	Weight*	Colour	Identifiable bones	Comments
18 (secondary fill of pit 89)	adult	?M	251 g	variable, white and well calcined, blue-grey, charred black	skull vault, 1 molar tooth root, radius, ulna, femur, tibia, phalanges	4 wormian bones present on skull vault fragment. 1 fragment of burnt animal bone
91 (fill of pit 90)	?sub-adult	-	2 g	white and well calcined	skull vault, 2 tooth roots, long bone shaft	
93 (primary fill of pit 89)	?	?	18 g	variable, white and well calcined, blue-grey, charred black	1 tooth root fragment	1 fragment of animal skull
133 (secondary fill of pit 132)	adult	?M	376 g	variable, many long bone shaft fragments have blue-black cortices	frontal, parietal, occipital, rib, vertebrae, humerus, femur, tibia, ?fibula	2 wormian bones present on skull vault fragment, charcoal present. 3 pieces of burnt flint
144 (primary fill of pit 132)	?adult	?	26 g	variable, white and well calcined, blue-grey, charred black	skull vault, 4 tooth root fragments, ?femur	charcoal and animal bone present
201 (upper fill of pit 200)	?adult	?	183 g	white and well calcined	skull vault, fibula, 2 phalanges, long bone shaft	
202 (upper fill of pit 200)	?	?	2 g	white and well calcined	nothing identifiable	
203 (cut for posthole)	?	?	1 g	white and well calcined	nothing identifiable	
207 (secondary fill of 206)	?adult	?	54 g	variable, white and well calcined, charred black	skull vault, fibula, long bone shaft	
209 (fill of pottery vessel 210)	?	?	9 g	white and well calcined	nothing identifiable	
213 (fill of pit 212)	?	?	10 g	white and well calcined, blue-grey	skull vault, tibia	
214 (fill of pit 211)	?	?	5 g	white and well calcined	nothing identifiable	
215 (fill of pit	?	?	16 g	white and well calcined	skull vault, long bone	

Context	Age	Sex	Weight*	Colour	Identifiable bones	Comments
211)						
216 (plough disturbance around pit 212)	?	?	34 g	white and well calcined	nothing identifiable	
303 (fill of posthole 304)	?adult	?	10 g	white and well calcined	skull vault, long bone	
308 (fill of pit 309)	?	?	8 g	white and well calcined	skull vault, long bone	all fragments have weathered and abraded appearance
333 (fill of pit 334)	?adult	?	104 g	white and well calcined	skull vault, long bone	
614 (fill of gully 611)	?	?	1 g	white and well calcined	nothing identifiable	
1008 (fill of tree-hole)	?	?	1 g	white and well calcined	nothing identifiable	

* these totals do not include the unsorted residues from the 4-0.5 mm fraction which were examined by the writer for material of significance.

Agars Plough (evaluation)

A fragmentary and poorly preserved human skull (865) was recovered from a deposit identified in evaluation trench G10 (Ford 1991, 18). Surviving bones were identified as left and right parietal, left temporal, frontal and occipital. In addition, two very poorly preserved premolars and a canine were recovered. Attrition was advanced and both premolars exhibited mild interstitial caries. The skull vault was extremely thick and the brow ridges were large. Therefore the skull has been assessed as a probable ageing adult male.

The skull is technically undated although it is likely to be Iron Age. The occurrence of single skulls in pits is a ritual identified by Wait (1985, 117). He suggests that such deposits are predominantly male and are restricted to hillforts only rarely occurring on settlements. At Cresswell Field, Yarnton (Boyle in preparation) the skull of a possible adult female had been deposited in a small pit outside an early Iron Age post-built structure. A second example of individual skull burial is known from Gravelly Guy, Stanton Harcourt (Harman forthcoming) where the skull of an adult of unknown sex aged between 30 and 35 years was recovered from the upper fill of a cylindrical pit.

It is likely that exhumation of this individual occurred after death and the skull was subsequently buried in an unfleshed state, thus accounting for the absence of the mandible. No cut marks were present on the bones as one would expect if the skeleton had been dismembered (Carr and Knüsel 1997, 167).

Lake End Road West Site 3 (evaluation)

A middle Bronze Age cremation burial (F343) had been placed in an inverted Deverel-Rimbury Bucket Urn (Ford 1991, 12). Severe truncation had occurred and only 34 g of bone had survived. Details of the analysis appear in the table below.

Context	Weight	Age	Identifiable bone	Comments
343	34 g	?subadult	?metapodial fragment, tibia, phalanges	8 fragments appear weathered and abraded

No further work required

Appendix 18: Soil micromorphology by R Macphail

Brief evaluation of soils at Lake End Road West

Deposits and soils

In the western half of the site the natural substrate consists of fine deposits (sands, calcareous sands and some intercalated gravels). A number of subsoil features were identified as probable tree-throw features (S. Foreman pers. comm.). Although not examined in detail, the probable tree-throw features appear to be comparable with well-studied tree-throw features from other sites. The other natural subsoil feature type seems to be composed of irregular fills of brownish loam in pale yellow sands that appear to be calcareous in places. Pedologically, the sands represent the natural substrate C horizon, while the brownish loam can be termed a Bt subsoil horizon which forms 'tongues'. This is the result of decalcification and weathering into the sandy, unweathered sandy substrate. The absolute identification of this feature type is more speculative than the tree-throw hollows, but are very likely to have formed through the action of large tree roots and the weathering associated with them. Deep soil truncation of the natural soil profile is therefore likely; the upper part of the Bt horizon, the overlying Ea (clay-depleted upper subsoil) and the forest topsoil, all now being missing).

The eastern half of the site is dominated by coarse deposits, mainly gravels with some sand. Here, relict subsoils show evidence of Bhs (sesquioxide [Fe and Al] and humus enriched) horizons, typical of podzols). (At deeper levels, soils are manganese and iron stained because of intermittent waterlogging).

Thus potentially, soils to the west were more base-rich 'woodland-type soils' whereas to the east there were possible 'heathland-type soils'. This difference in basic fertility may have affected later land-use and arable potential.

Middle Saxon pit fills

The Neolithic and later prehistoric features showed little potential for soil analysis. Two Saxon pits (422, 1266) were therefore selected for examination in detail alongside the Romano-British Well (1262). These three features have also been definitively bulk sampled for charred plant remains to allow a detailed multi-disciplinary analysis of the pit deposits.

The strategy selected by the author to study these pit fills relates to the ability of soil micromorphology, along with complementary soil chemistry, to accurately characterise pit fills so that the following can be discerned:

- 1) Waterlain/ water-saturated fine deposits (if pits used as wells originally).
- 2) Fine deposits formed through a period of earthworm working.
- 3) Weathering of dumped materials (did ash weather *in situ* or was it already weathered? Does any organic matter come direct from byres or was it weathered in on a manure heap? Were the later fills affected by high water table mottling and slaking? etc.)
- 4) As a spin-off, can microscopic evidence of dung (as fuel etc.), crop-processing, industrial activity and coprolites be found.

A working database is available from the middle Saxon sunken-featured buildings and pit-fills assessed from West Heselton (N.Yorks.) and Stratton (Bedfordshire). Waterlogged well deposits are also under study from Stratton.

Samples

Mid-Saxon Pit 422:

Three undisturbed Kubiena box samples were taken across the boundaries of the following contexts: 439/481 (M1), 481/476 (M2) and 476/423 (M3). These were complemented by 5 bulk soil samples for supportive chemistry, from the above contexts and in association with the thin section samples.

Mid-Saxon Pit 1266:

Three undisturbed Kubiena box samples were taken from contexts: 1292 (M4), a fine fill, and across the boundaries of 1270/1125 (M5) 1126/1086 (M6). These were complemented by 10 bulk soil samples for supportive chemistry, from the topmost fill, the above contexts and the surrounding natural.

Roman Well 1262:

One Kubiena box sample (M7) and one bulk sample were taken from the lowermost waterlogged grey fill as a control for the Saxon pit studies.

A total of 7 thin section and 16 bulk samples were taken.

Recommended further work:

It is proposed that the samples collected should be processed to allow soil micromorphological characterisation of contexts and the boundaries, so as to identify anthropogenic components and pedological features of weathering, biological activity and waterlogging, water sedimentation, etc. No time-consuming, systematic microstratigraphical counting will be necessary for this study.

Bulk samples will be processed for focused soil chemical analyses. The methodology for such has been developed by Swedish colleagues for the characterisation of different types of anthropogenic deposits, and uses loss-on-ignition (soil organic matter), magnetic susceptibility (MS), MS after soil ignition (MS550), phosphate (P^o) and phosphate after soil ignition (Ptot). Research on archaeological sites and experiments have shown that industrial, human occupation and animal dung deposits, all have specific chemical signatures. also, waterlogging produces phenomena that can be recognised chemically. The basic phosphate methodology was developed in the 1950s, and the suite of techniques has been developed, discussed and validated at a number of meetings.

The soil study coverage at Lake End Road West can be enlarged through the use of chemistry, the exact correlation of thin sections and chemistry of specific contexts acting as controls for contexts which are to be studied by chemistry alone.

Further work

Task	Unit cost	Total cost (£)	
Preparation of 7 thin sections	£85	595.	00
Preparation and chemical analysis of 16 samples	£40	640.	00
Description of 7 thin sections	£150/day (3 days)	750.	00
University overhead	25%	627.	50
Total		3137.	50

The work will be academically supported by assessed data from Stratton and from the current analysis of West Heselton, for example. The investigation will be a team study by UCL and Umea, Sweden.

Appendix 19: Pollen by A Parker

Pollen samples from Tranche 1 were assessed together with two samples from LERW97. The pollen column from Lot's Hole was discarded due to poor context information and storage since excavation. The Tranche 1 samples were not included in the post-excavation assessment as it was believed at the time that further better-preserved samples may be forthcoming during the construction of the Flood Relief Channel. However, it was decided that the existing samples should be assessed along with the Tranche 2 material.

Introduction

A total of eight samples were prepared and assessed for their pollen contents using standard techniques (Moore *et al.* 1991) (including HCl and HF digestions, owing to the calcareous and siliceous nature of the sediments). The resultant residues were stained and mounted in glycerol jelly and scanned at x400 magnification. The slides were assessed for the level of preservation and brief notes were made on the pollen types identified.

Preliminary findings

Pollen preservation was good in all samples with the exception of LERW 97 599 143, which was poor.

TAMLE96 20 15 (middle Bronze Age ditch fill)

Good preservation with a wide range of pollen types present. The initial work would point towards an open landscape with high levels of Gramineae and Compositae Liguliflorae. In addition *Cirsium/Carduus* type, *Centaurea scabiosa* and *Filipendula* were present. Low tree and shrub pollen values are present with *Alnus*, *Quercus* and *Corylus* present.

TAMLE96 17 14 (channel fill)

Good preservation.

LERW97 1723 110 (Roman well)

Good preservation. Open conditions dominated by Gramineae and herb pollen. Modest values for *Alnus* and *Corylus*.

RMD96

Four pollen samples were prepared from this core. Unfortunately the pollen column was in poor condition when received for analysis, owing to it being poorly sealed and stored after collection. Apart from the basal 30 cm, much of the material was loose and free to move within the container (due to post collection desiccation) and is thus regarded as unreliable. Even the basal 30cm may be regarded as suspect due to possible contamination from the above material. Despite this the four samples had good preservation and indicate an early Holocene landscape, with high frequencies of *Pinus* and *Corylus*.

Recommendations

Further work should be carried out on the following three samples by increasing the pollen counts to c. 500 grains per sample:

TAMLE96 20 (middle Bronze Age ditch fill).

TAMLE96 17 14 (channel fill)

LERW97 1732 110 (Roman well)

No further work to be carried out on LERW 97 599 143, due to poor preservation.

At the time no further work is recommended on column RMD 96 due to inherent problems with the material. However, should another column be forthcoming then it is recommended that detailed work should be undertaken.

Task	Duration (days)
Pollen: complete counting on TAMLE96 channel fill, MBA ditch fill and LERW97 Roman well; prepare report	2
Total	2

Appendix 20: Assessment of worked stone by F Roe

The provisional catalogue of worked stone lists 159 items (see table below), of which 11 were considered to be unworked.

Summary of worked stone

Date	Fragments
Early prehistoric: objects	2
Early prehistoric: burnt stone	17
Other periods: burnt stone	3
Iron Age (not yet seen)	1
Total prehistoric	23
Roman objects	16
Saxon objects	49
Total Roman and Saxon	65
Roman/Saxon mixed deposits	25
Contexts without pottery	27
not listed on database	8
Total of uncertainty dated objects	60
Total unworked	11
Grand total	159

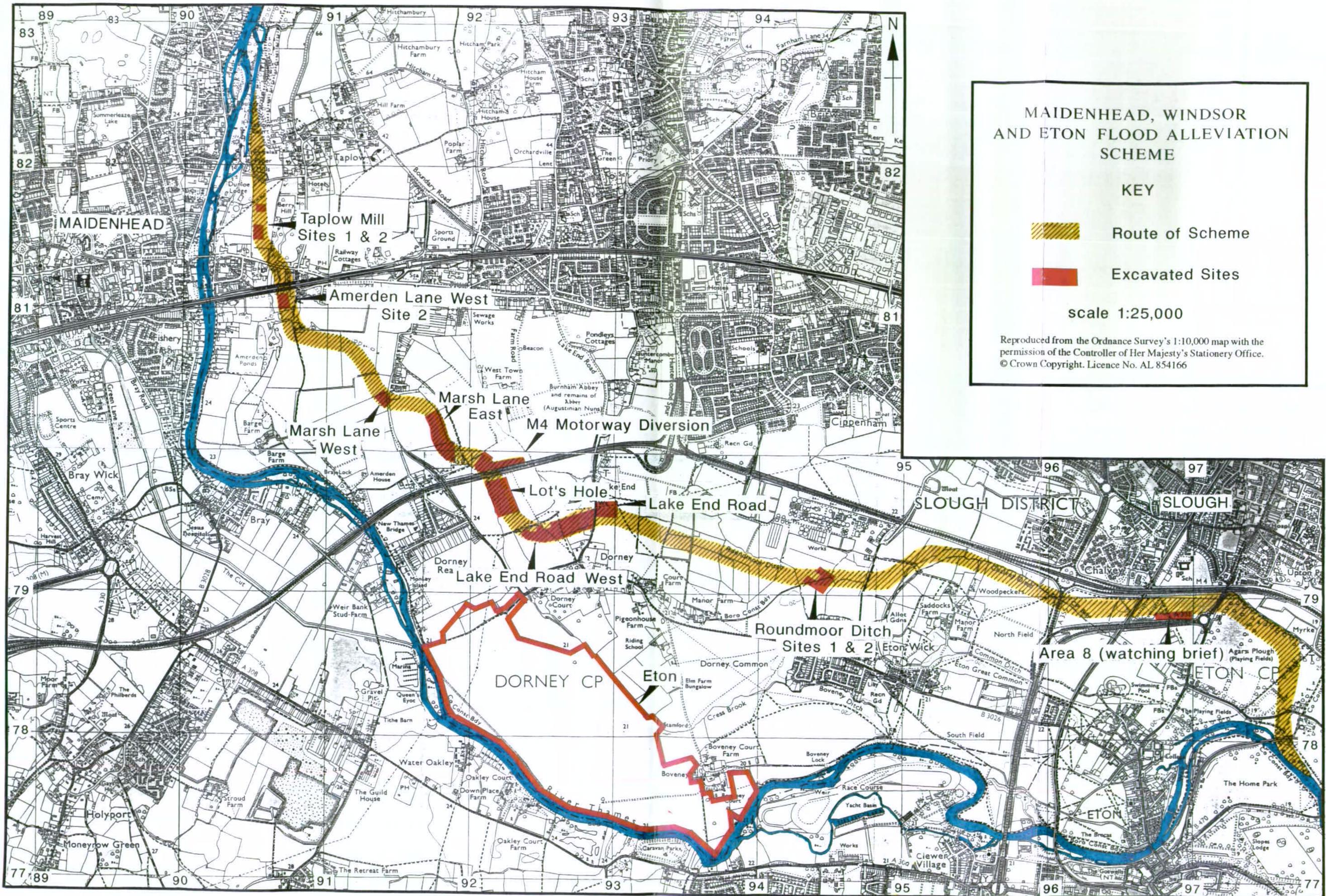
The early prehistoric materials consist of two quartzite hammerstones and 20 fragments of burnt stone. This small assemblage is of interest as such finds have been overlooked in the past, and can now be compared with objects from other sites such as Yarnton, Oxon. There is also one Iron Age item (not yet seen).

The bulk of finds, some hundred and twenty five items, can probably be attributed to either the Roman or Saxon periods. Unfortunately nearly half of these finds are without firm evidence for dating, since 25 are from mixed deposits, containing both Roman and Saxon pottery, while 27 are from contexts without pottery, and a further eight are at present not included in the database.

This leaves 16 items from probable Roman contexts, and 49 that are likely to be Saxon. Some uncertainty remains, since Niedermendig lava, and indeed other materials as well, are common to both periods, so that finds from apparently Saxon contexts could be residual Roman, while conversely, finds from a context with only Roman pottery could in fact be Saxon, with pottery that is residual Roman, but with stone deriving from a Saxon context.

It is clear that considerable quantities of Niedermendig lava were being brought up the Thames in the past, and perhaps particularly during the middle Saxon period. In Roman times it appears that a higher proportion of other quern materials were also being used, such as Upper Old Red Sandstone, Lodsworth stone, Millstone Grit and probably Reigate stone, so that the lava only accounts for approximately 35.7% of the quern materials. By the middle Saxon period approximately 82.3% of the querns were being made from lava; querns made from other materials have mainly still to be examined.

Further work on the stone finds from this site would include fieldwork to investigate the Reigate stone. There is little that has been published on worked stone from this area, and so the value of this collection would be to provide a basis for any further studies. It would be useful to see finds from Old Windsor as comparable Saxon material. A further 3 - 4 further days work are estimated to complete the catalogue and to write a report on the more securely stratified finds.



**MAIDENHEAD, WINDSOR
AND ETON FLOOD ALLEVIATION
SCHEME**

KEY

Route of Scheme
 Excavated Sites

scale 1:25,000

Reproduced from the Ordnance Survey's 1:10,000 map with the permission of the Controller of Her Majesty's Stationery Office.
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Location of sites

Figure 1



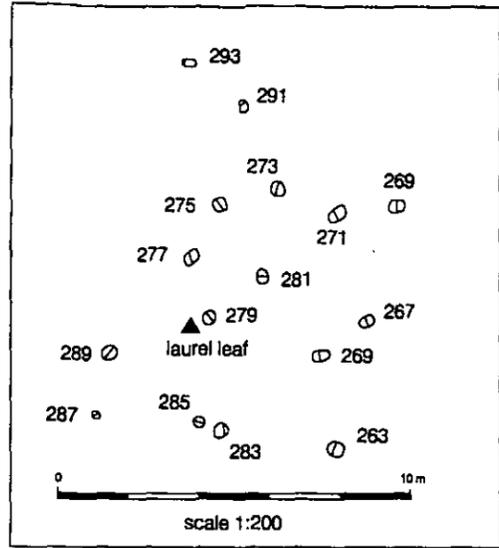
Lake End Road West. Preliminary phase plan: Prehistoric

Figure 2

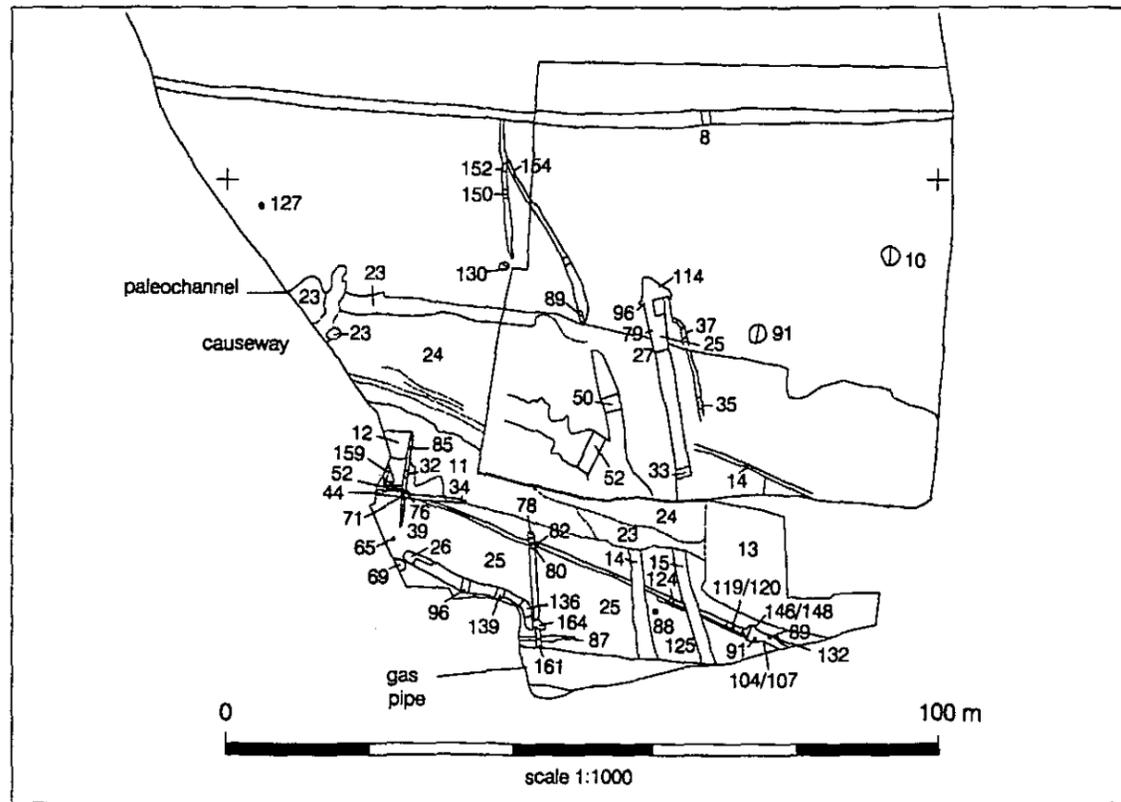


Lake End Road West. Preliminary phase plan: Saxon, Medieval and Post-Medieval

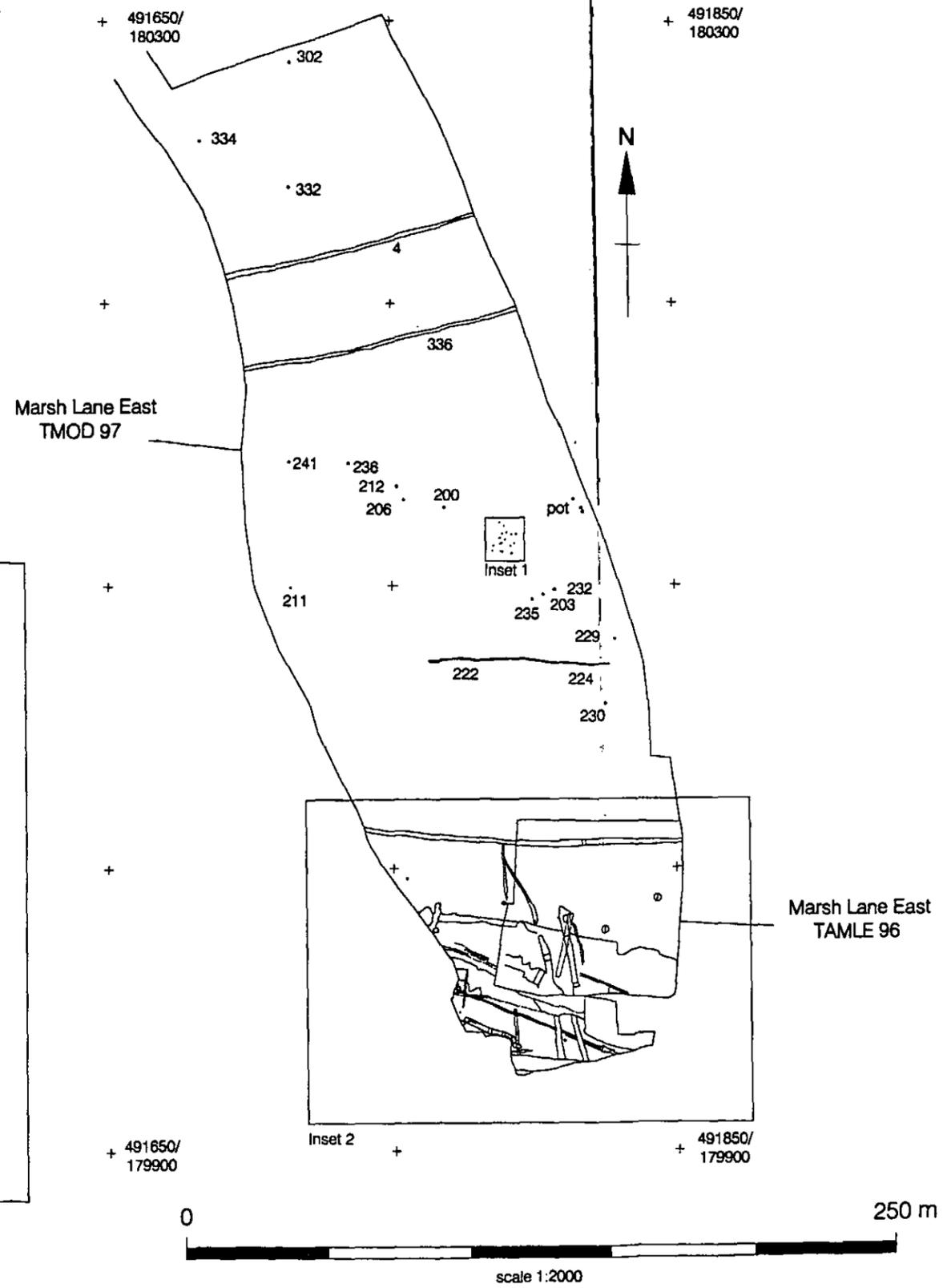
Figure 4



Inset 1. Possible Middle Bronze Age structure

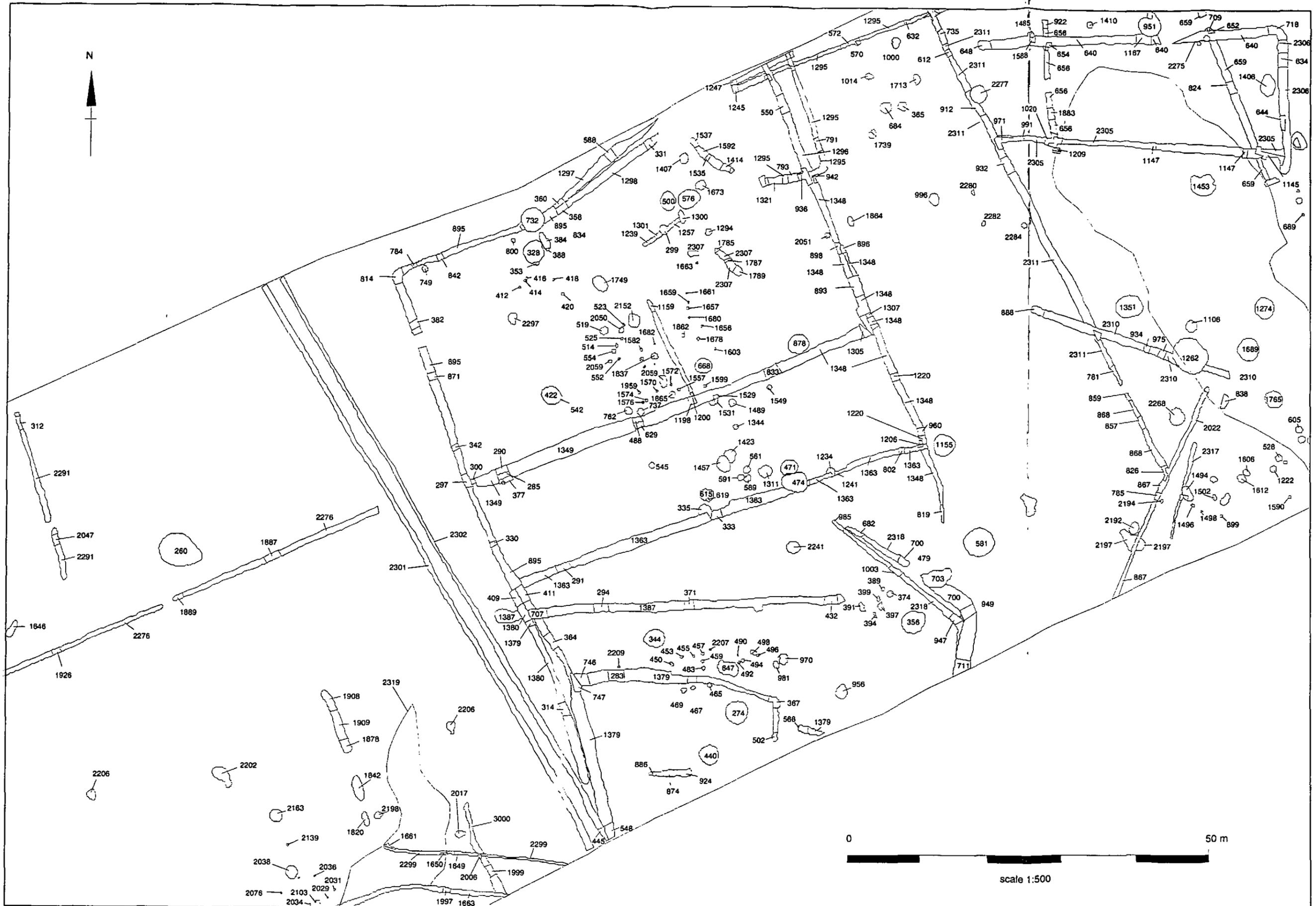


Inset 2. Detail



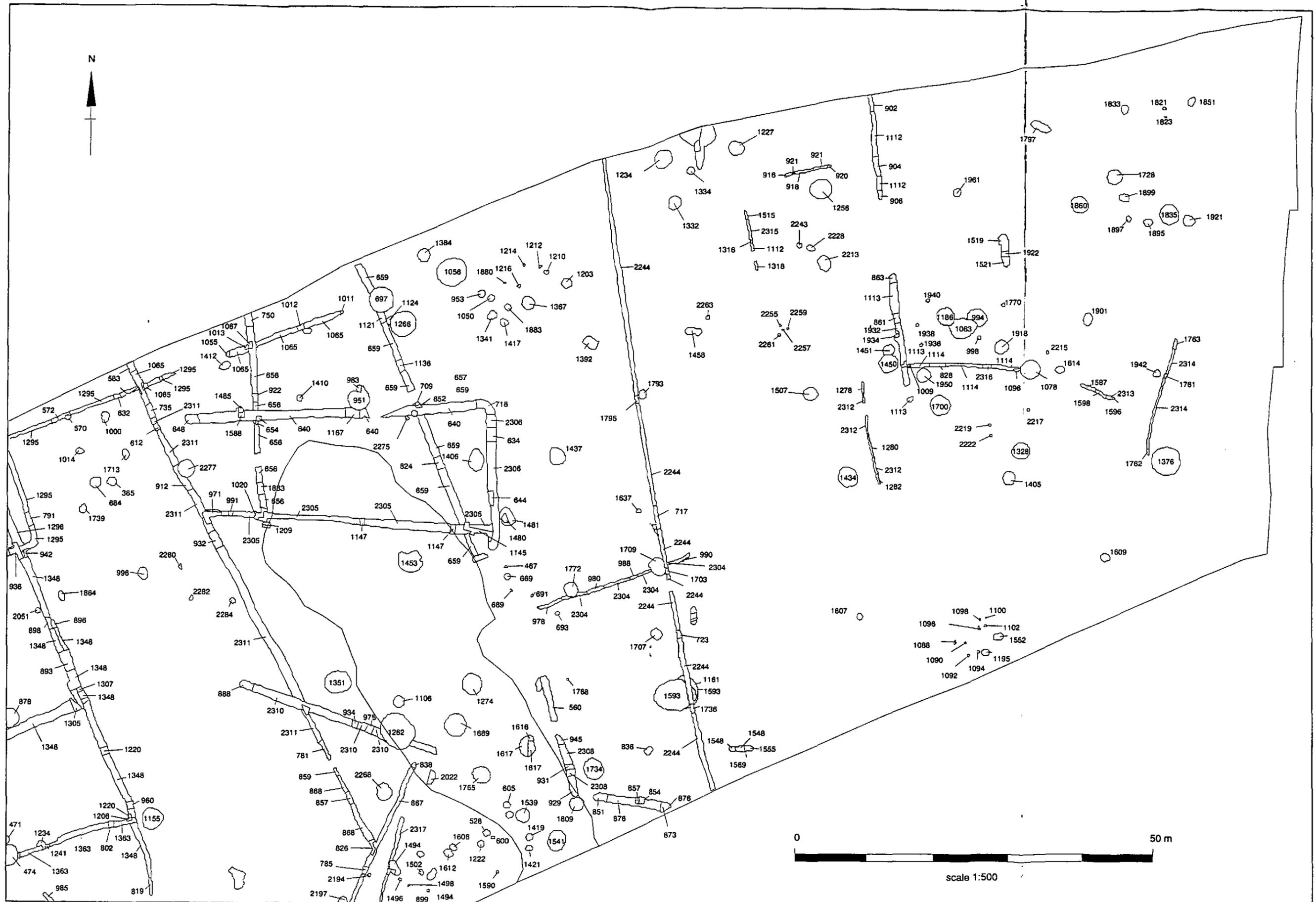
Marsh Lane. Site plan

Figure 5



Lake End Road West. Site plan

Figure 9



Lake End Road West. Site Plan

Figure 10



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