PART D

CRANFORD LANE, HARLINGTON

London Borough of Hillingdon

Post Excavation Assessment Report

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Abstract

This report forms a post-excavation assessment of the excavations at Cranford Lane, Harlington, in 1994-5, in accordance with Management of Archæological Projects *(MAP 2).*[1]

The data and material in the site archive is quantified, and the work that has been undertaken on that archive. An interim summary of the results of the fieldwork describes the Neolithic, Middle Bronze Age, Late Bronze Age, Iron Age, Roman, and post-medieval activity on the site.

The main Neolithic activity consisted of a group of three pits containing large assemblages of pottery and worked flint, and a possible *building whose date is unclear. After a period of abandonment, there is renewed activity, and probably occupation, during the Middle Bronze Age. This is characterised by a circle of 'cooking' and refuse pits around a well.*

The Late Bronze Age saw an expansion from the limited concentration of Middle Bronze Age activity, into an extensive agricultural settlement with well regulated field systems, and at least two, probably four, occupation sites, all within a defined perimeter. In addition to agriculture, there is evidence that bronze casting was undertaken on the site. The sequence of deposits suggests at least three, and probably more, phases of activity can be identified, before abandonment towards the end of the Late Bronze Age.

There are only minimal indications of Iron Age activity, consisting of one pit containing Iron Age pottery, and a post hole and beam slot structure. These suggest that the focus of any Iron Age occupation lay outside of the site to the north. Whilst there may be extremely limited indications of 1st or 2nd century AD activity, the majority of Roman features form a complex series of enclosure ditches, dating from the late 3rd or 4th century. Although there is no evidence for buildings, the finds assemblage may suggest occupation in the vicinity.

The potential of the data to answer the (unstated) original research questions is supplemented by further research potential which has been identified during the course of this assessment, leading to the formulation of revised research aims for the data from this site.

The data from this site will be integrated into the West London Gravels Project *for further analysis and publication.*

[1] English Heritage, 1991.

1 INTRODUCTION

This post-excavation assessment deals with MoLAS excavations at Cranford Lane, Harlington during 1994-5, (site code CFL94). It is intended that further analysis of the results of this work will form an element of a programme of landscape analysis, examining the results of a number of sites in this area (the *West London Gravels Project).* This will include these excavations, as well as an adjacent site excavated during 1989-90.

The site is located approximately half way between the present villages of Harlington and Cranford, on the southern side of Cranford Lane. The approximate centre of the site lies at TQ 0952 7736. The land is owned by the Baptist Church, from whom it has been leased for the extraction of gravel by Henry Streeter (sand and ballast) Ltd.

Following archæological investigation of land to the south, (Boucher 1989, Walker 1990, site codes CLH89 & CLH90) prior to the first phase of quarrying, the planning permission for the present site, the second phase, was dependent on archæological conditions being satisfied.

Archæological evaluations were carried out between 30th June and 13th July 1994, supervised by Mark Birley. These identified a large number of features of Neolithic, Late Bronze Age, and Roman date, as well as tree holes. These features included evidence of occupation during the Late Bronze Age and possibly the Roman periods.

Areas B, C , and C1 were excavated between 28th July 1994 and 3rd February 1995, supervised by Mark Birley. Area D was excavated between 5th April and 7th August 1995, supervised by Nicholas Elsden. (The 1989/90 excavations were considered to be Area A).

All of the work, but especially that in Area B where the density of features was greatest, was characterised by a lack of time and staff to excavate as fully as might have been desired. This resulted in smaller proportions of ditches and wells being excavated than might produce good pottery assemblages, some stratigraphic relationships which were obvious on the surface not being excavated, occasional liberties being taken with the recording system, and in particular, one small part of Area B not being excavated at all. Conditions, as usual on brickearth sites, were rarely ideal: the ground baking hard in the summer, or turning quickly to a mire after rain. The latter had a particular effect on Areas C and C1.

The acidic nature of the soil was such that virtually no prehistoric bone survived, with the exception of calcined bone in deposits of charcoal. Other organic material, including that which would provide environmental information, fared equally badly. The best environmental material proved to come not from charcoal rich deposits, but from waterlain silts in wells or deep pits. No prehistoric bronze survived on the site, despite the presence of bronze casting debris in one of the wells, and an earlier find of a bronze axe during quarrying to the north of the site.[2] This too may have been, at least partially, a result of the acidic nature of the soil.

[2] Laws, 1978.

2 QUANTIFICATION OF THE SITE ARCHIVE

Table 1. Stratigraphic Archive			
Contexts	Evaluation	388	Mostly duplicated in excavation: 62 to be carried forward to post-excavation analysis.
	Excavation	2090	Including 117 feature numbers & 7 finds retrieval numbers.
Plans	'A4' 1:20, mostly single context excavation plans	742 sheets	Including 2 x 1:50 multi-context plans
	A1 1:50 pre-excavation plans	90 sheets	Including 4 other A1 plans
Sections	'A4'	133 sheets	37 sheets have more than one section drawing. Also 2 x A1 section drawings
Matrices	Areas B, C, C1	Yes	Digital and paper copies
	Area D	Yes	Paper copies
Photographs		155 images	

Table 2. Finds Archive	
Prehistoric Pot	*c.* 4000 sherds, including *c.* 300 Neolithic
Number of boxes of Roman Pot	7
Number of boxes of Post-medieval Pot	<1
Animal Bone	0.21 kg
Number of boxes of Building material	
Number of boxes of Worked flint	1220 pieces
Number of boxes of Burnt flint	
Number of registered finds	61 (includes 31 ?Roman)
Quantities of 'other' materials	

Table 3. Environmental Archive	
Bulk Soil Samples	248
Single Item Samples (wood or charcoal)	7
Possible Cremations	12
Column Samples	11
Total	**288**

3 WORK UNDERTAKEN ON THE ARCHIVE

3.1 Stratigraphy

see Table 1

- All of the context sheets, plans and section drawings have been checked.
- The plans have been digitised using an ACAD system.
- A Harris Matrix of contexts has been compiled, and, except for Area D, input into the Bonn Archæological Seriation Programme. Note that the programme is not well suited to recording to shallowly stratified sites, and thus the strata had to be input into two data sets.
- Sub-groups have been defined by annotating the Matrices, and Sub-group data have been recorded in the MoLAS Oracle database.
- A Harris Matrix of sub-groups has been compiled in the Bonn Archæological Seriation Programme. Those with no stratigraphic relations with other sub-groups have been recorded in text form only, because of the problems with the programme mentioned above.
- The Sub-group database has been cross referenced with the spot date tables to produce the Dating Tables.
- The Sub-groups have been assigned to broad periods on a preliminary basis, and preliminary period plans have been compiled on ACAD.
- A summary of the stratigraphic sequence has been written, with finds and environmental results integrated where appropriate.

3.2 Finds

see Table 2

- The pottery has been washed and dated. The 'spot' dates have been entered into a data base.
- 'Accessioned' finds have been cleaned and given preliminary conservation where necessary, and accessioned. The accessioned finds have been entered into a database.
- Copper alloy and iron objects have been X-rayed.
- The coins have been dated where possible. These dates have been added to the dating tables.

3.3 Environmental

see Table 3

- 52 bulk soil samples were processed to assess survival, and determine which of the large number of samples taken had the potential to preserve environmental remains.

- On the basis of this assessment, it was determined that the overall level of preservation was very poor, and therefore 92 samples were not capable of contributing environmental information.
- Eleven column samples were described and assessed.
- Twelve possible cremations were processed, and the calcined bone assessed to attempt to determine if it is human. Unfortunately, the bone was in such a condition that no definite conclusion could be reached by MoLAS osteologists, and it will have to be sent to an external consultant for further examination.

4 INTERIM STATEMENT OF FIELD WORK RESULTS

Periods 1 and 2, Neolithic and Middle Bronze Age, have been dealt with in greater detail than the succeeding periods, as the limited amounts of data required analysis in greater depth than the later material, in order to define which periods the deposits belonged to.

Palaeolithic and Mesolithic

No features of these dates were observed, but one possible Palaeolithic flake was residual in a Roman ditch,[3] and an unstratified rod microlith[4] was also recovered.

Period 1: Neolithic

see Figure 1.

Sub-groups: 79, 118, 137, 289, 346-8, 390, 449, 488.
?Building 1 (dating uncertain) 199-204, 273-4, 338, 340-2.

The bulk of the Neolithic evidence from the site consists of a single cluster of activity comprised of pits, a ***possible*** structure, and six isolated features. A small quantity of residual Neolithic pottery was distributed across the site, with a large concentration in the area of a pit which may have been of Neolithic date. In addition, three tree or root holes contained Neolithic pottery, which might, however, have been residual.

Three relatively large pits, 8 to 15 m apart, appear to have been the focus of Neolithic activity.[5] One pit produced a significant assemblage of Neolithic pottery; *c.* 90 sherds of early-middle Neolithic date, although it also included two intrusive sherds of possible Late Bronze Age pottery. The pottery from the other two pits was less diagnostic: one pit contained one or two possible Neolithic sherds out of 37 fragments of otherwise undiagnostic prehistoric pottery; the other *c.* 70 sherds of pre-1st millennium BC date. These three pits were the only features on the site to produce worked flint assemblages of more than 50 flints. The flintwork was mostly comprised of small flakes and spalls, but included blades and a few scrapers, and a burnt, broken, leaf arrowhead.

The size and form of the pits was distinctive in comparison with the Late Bronze Age features in this area, as were the large flint assemblages. It appears, therefore, that despite the imprecise dating of two of the pits, these three pits were all of early-middle Neolithic date. The function of the pits is unknown.

A more problematic feature, or features, was a post hole and beam slot structure, rectangular in plan, measuring some 8 x 5 m, which may have formed more than one structure.

[3] Sub-group 283.
[4] Sub-group 491
[5] Sub-groups 346, 347, and 348.

Figure 1 Period 1: Neolithic

Whilst these may have been two short palisades or fences, and a number of other structures in between them, it is possible that these features comprise the partial remains of a building.[6] The northern end of the structure lay between the pits described above, and six of the post holes contained small quantities of possible Neolithic pottery. Nine of the post holes, however, produced Late Bronze Age pottery, and it is unclear whether this material is intrusive, or if the ?Neolithic pottery is residual.

Whereas it might initially appear that the Neolithic material is more likely to be residual than the Late Bronze Age to be intrusive, the southeastern face of the structure was cut by a ditch of the Late Bronze Age field system, suggesting that the structure predated at least one phase of the extensive Late Bronze Age occupation in the immediate vicinity. The latter would provide an obvious explanation for any intrusive material. Whilst residual Neolithic pottery was recovered from three of the ditches defining the area around this Late Bronze Age occupation, it may be significant that none was recovered from any of the numerous post holes in the area immediately adjacent to the structure. Additionally, the alignment of the structure did not correspond to that of any of the other Late Bronze Age features in this area.

This circumstantial evidence suggests that this could have been a Neolithic structure, despite the considerable quantities of (?intrusive) Late Bronze Age pottery present. Further analysis, including a reassessment of the combined pottery assemblage from this structure, with respect to the stratigraphic and spatial relationships of the individual elements, may help to answer this question, as may Carbon 14 dating. If it were not Neolithic, then it would probably form part of an initial phase of Late Bronze Age occupation in this part of the site, preceding the division of the area by ditch Sub-group 205.

An amber ‘doughnut bead’ was found in a pit within the outline of this structure,[7] which also contained a burnt fragment of animal bone, of a size to suggest that it was a sheep or goat, and 11 sherds of pottery that might be of Neolithic or Middle Bronze Age date. If this pit did date from the Neolithic, then the amber would be a comparative rarity, especially if it were of early or middle Neolithic date, as the more precisely dated pottery from the three large pits suggests.

A pit or possibly a cremation in the southeastern part of the site contained charcoal, burnt bone, some of which has been identified as human, and 10 sherds of Peterborough ware.[8] Apart from a single unstratified rim sherd, this was the only pottery of this tradition identified at Cranford Lane, raising the question of whether it represents the same phase of occupation as the other Neolithic material. Carbon 14 dating may help both to refine the dating of this type of pottery, and to indicate if this feature is contemporary with the early-middle Neolithic activity on the site. This feature requires further analysis and research, to determine whether this is likely to have been a cremation, perhaps disturbed.

[6] Sub-groups 199-204, 273-4, 338, and 340-2. For convenience, it has been labelled ?Building 1.
[7] Sub-group 342.
[8] Sub-group 118.

The other isolated features, which are much less securely dated, included a possible hearth, and three pits or post-holes.[9] A polished axe, possibly of Langdale or Pen Maenmwr type, was found as a surface find after machine clearance.[10]

With one exception, the residual material is scattered fairly sparsely across the site, with no definite pattern, and in such small quantities for the dating to be uncertain.[11] The exception is an assemblage of *c.* 75 early-middle Neolithic sherds from the fills of a pit lying approximately 45 m to the west of the main group of Neolithic activity. This large pit is interpreted as one of the water collecting 'sumps' of the Late Bronze Age field system.[12] Apart from a single sherd of possible Neolithic date amongst the earlier disuse silting, the Neolithic pottery comes from the latest phase of backfilling, and final silting up of the feature. This suggests that the material came from the same source as the soil used to back fill the feature, presumably from the area around the pit. No Neolithic material has been identified nearer than the main group of activity referred to above, but the construction of the sump had heavily truncated an earlier pit, of which little remained and from which no dating material was recovered.[13] It is possible that this pit was itself the source of the Neolithic pottery in the later deposits, having been removed during construction of the 'sump', and then having been amongst the material used to backfill the later feature.

These deposits form a central group of early-middle Neolithic activity represented by the pits and possible structure, with scattered features and residual material suggesting that evidence of more widespread activity has been lost to truncation. If the structure were Neolithic, and a building, then this may have been an occupation site. It would be of some importance in the region, being the first to have been identified away from the River Thames, in the area of one of its tributaries, the River Crane.

[9] Sub-groups 390, 79, 449, 453, respectively.
[10] Sub-group 137.
[11] Sub-groups 13, 57, 123, 165, 234, 317, 378, 400, 436.
[12] Sub-groups 290-2.
[13] Sub-group 289.

Period 2: Middle Bronze Age

see Figure 2.

Sub-groups: 19, 44-6, 52-5, 76, 91-2, 108-10, 112, 136, 141, 144, 193, 302, 449, 453, 489.

There is no evidence of activity on the site during the later Neolithic, unless the single pit containing Peterborough Ware is so dated. Nor is there any indication of activity during the Early Bronze Age. This abandonment of the site lasts until the Middle Bronze Age, when there is evidence of renewed activity, and probably occupation.

The Middle Bronze Age activity takes the form of two discrete groups of features in the northeastern part of the site. In addition, there were six isolated features containing Middle Bronze Age pottery,[14] some of which might be residual, and a spread of residual material in later features.

The largest group of activity forms a rough circle focused on a narrow well.[15] Preliminary examination of environmental samples from the well has indicated that sufficient survival of waterlogged plant remains has taken place to warrant analysis, although sedimentalogical analysis of column samples indicates that all of the fills of the well derive from its disuse.

The pits to the west and south of the well are characterised by fills containing charcoal and burnt flint. A rectangular pit was filled with charcoal and burnt flint, but although conforming to the class of features which have been described as 'cooking pits' or 'boiling pits', showed no signs of burning *in situ*.[16] It may have been a pit containing refuse from the emptying of a more shallow pit actually used for cooking, which had been destroyed by truncation. The surrounding pits contained lesser quantities of charcoal and burnt flint, as well as fragments of burnt clay.[17] These too appear to contain refuse from a cooking pit. The pits to the north and east of the well have less characteristic fills, possibly they were general refuse pits.[18]

The dating of this circle of activity is not entirely secure, being based on very small groups of pottery, which are, however, reasonably consistent. The primary silting of the well contained three sherds of Middle Bronze Age pottery, and one pit four.[19] The latest silting in the well produced three sherds of middle or Late Bronze Age pottery, and a single sherd of similar date came from the largest of the possible refuse pits.[20]

This small assemblage of pottery could be residual, and the possible refuse pits could alternatively be associated with the Late Bronze Age field system(s). These features do, however, form an obvious cluster around the well, suggesting that they represent one phase of activity.

[14] Sub-groups 209, 302, 449, 488-9.
[15] Sub-groups 44, 45.
[16] Sub-group 83.
[17] Sub-groups 19, 76, 86, 87, 91, 92.
[18] Sub-groups 52, 108, 109, 110, 112.
[19] Sub-groups 44 and 19, respectively.
[20] Sub-group 112.

Figure 2 Period 2: Middle Bronze Age

This circle is cut across, and in the case of one pit, cut by, a ditch,[21] which is one of the earliest elements of the Late Bronze Age field system in this area. Again, Carbon 14 dating may help to clarify this matter.

A second, and smaller, group of activity occurs in the far northeastern corner of the site. This includes a hearth,[22] and a pit containing a moderately sized group of Middle Bronze Age pottery, as well as a flint scraper and a whetstone.[23] A second pit, with at least two phases of use, was filled with charcoal; burnt flint, clay, and fragments of animal bone; as well as frequent pottery and worked flint.[24] This may have been refuse from a cooking pit, or the hearth. The pottery in the earlier fills may have been of Middle Bronze Age date, or possibly later. That from the latest fill comprised 24 Middle Bronze Age sherds.

There were no surviving buildings to provide definitive evidence of occupation, but evidence of these may well has been lost to truncation. The concentration of possible 'domestic' activities suggests that this represents the remains of occupation in the immediate vicinity.

Although these groups together form the only cluster of activity on the site dated to the Middle Bronze Age, a single isolated pit some 75 m to their south contained charcoal, burnt flint, a cattle tooth fragment, and *c.* 50 sherds of Middle Bronze Age pottery.[25] This feature implies that more extensive Middle Bronze Age activity may have taken place in this area, but have been lost to truncation. It is possible that some of the undated features in the surrounding area, which have been phased with the Late Bronze Age activity, may in fact belong to the earlier period.

A concentration of residual Middle Bronze Age pottery is found the area around one of the Late Bronze Age occupation sites.[26] In particular, the disuse of a large cooking pit, and the fill of one of the surrounding ditches, contained ten and eight sherds of Middle Bronze Age pottery, respectively. Further to the west, the fill of one of the ditches of Late Bronze Age field system produced a near complete, although broken, narrow bucket urn of cylindrical form.[27] This vessel had been pierced with closely spaced holes around the rim before firing, and others below the rim and close to the base after firing. The precise function of all of these holes has not yet been satisfactorily explained.

Although these features are confidently dated to the Late Bronze Age, this concentration of residual material suggests that there may have been significant Middle Bronze Age activity in this area, which has not survived truncation. It is notable that this pottery is greater in quantity than that surviving in the circle of activity around the well to the east.

[21] Sub-group 20.
[22] Sub-group 144.
[23] Sub-group 141.
[24] Sub-groups 53-55.
[25] Sub-group 46.
[26] Sub-groups, 260, 268, 463.
[27] Sub-group 192.

Period 3: Late Bronze Age

see Figure 3.

Sub-groups: 4-5, 9-15, 17-18, 20-30, 32, 37-41, 47-8, 50-1, 56-60, 62-3, 65-6, 69, 71-5, 89, 95, 96-9, 101, 104, 113-4, 116, 119, 120, 123-4, 126, 129, 130, 134, 142-3, 147, 149, 151, 153, 155-7, 161, 163-4, 167, 170-3, 176-7, 179-82, 184-5, 187-8, 190-2, 196, 205-9, 215, 218, 220-4, 233-5, 240-3, 251, 252, 254-6, 257-65, 267-72, 278-80, 290-3, 295, 297, 301-2, 309, 311, 313-4, 316-7, 318-22, 325, 336-7, 339, 344, 349-50, 352-4, 356-8, 360, 362-7, 371-4, 375, 388, 392-6, 398-9, 402-4, 406, 409, 411-7, 419-20, 424-5, 430, 431-6, 439, 441-2, 443-8, 450-2, 454, 456, 460, 471, 474, 483-4, 487.
?Building 1 (dating uncertain) 199-204, 273-4, 338, 340-2.

The Late Bronze Age saw an expansion from the limited concentration of Middle Bronze Age activity, into an extensive agricultural settlement with well regulated field systems, and at least two, probably four, occupation sites, all within a defined perimeter. In addition to agriculture, there is evidence that bronze casting was being undertaken on the site. The sequence of deposits suggests that at least three, and probably more, phases of activity can be identified.

The most extensive element in this field system is the series of boundary and/or drainage ditches, which define a system of droveways and rectangular enclosures.[28] Some of the ditch lined enclosures are further sub-divided by post hole alignments, interpreted as the supports for wooden or wattle fences.[29] Some parts of this system have been truncated by later activity, but can be reconstructed from the alignments of surviving elements. The system extends beyond the limits of the site to the north, south, and west, but to the east is bordered by a boundary ditch, pierced by a single entranceway.[30] This system appears to have been maintained over a considerable length of time, with three successive recuts being noted at one point of the eastern boundary ditch, and some internal divisions being recut twice. Several changes of layout are apparent in some parts of the system, for example the construction or expansion of a wide droveway across the northern part of the site,[31] and the replacement of a ditched droveway with a gravel metalled trackway.[32] Further analysis and dating is required in order to understand more fully the phasing of this system. This includes the possible suppression of a droveway and part of the field system, by a set of ditches whose dating is unclear, but which may be Roman rather than Bronze Age.[33]

In the northwest of the site, the ditches are punctuated six large pits, which appear to have been 'sumps' to collect water from the ditches.[34]

[28] Sub-groups 9-12, 20-23, 25-7, 41, 48, 66, 153, 155-7, 161, 163-4, 167, 182, 190, 192, 196, 205, 207-8, 218, 220, 223-4, 233, 240-3, 254-5, 257-8, 261, 264, 268, 271, 279-80, 293, 297, 301, 309, 317, 322, 337, 354, 356, 367, 371, 398-9, 403-4, 411, 416-7, 432, 435-6, 445, 450, 454, 456.
[29] Sub-groups 4, 5, 14, 50, 51, 74-5, 95, 123-4, 134, 147, 149, 177, 179-80, 184-5, 188, 252, 353, 375, 388, 402, 406, 425, 430, 443-4, 483.
[30] Sub-groups 9-12, 21-23.
[31] Sub-groups 233, 261, 265, 398-9, 403-4, 432, 445.
[32] Sub-groups 25-30.
[33] Sub-groups 226-7.
[34] Sub-groups 262, 290-2, 295, 313, 318-21, 360, 460.

Figure 3 Period 3: Late Bronze Age

In the eastern part of the site, there are no 'sumps', but four wells.[35] A fifth well was located on the very northern edge of the central part of the site.[36] Both wells and 'sumps' are located close to droveways and entranceways through the ditch system, and two of the wells flanked the entranceway through the eastern boundary ditch.

One of the latter[37] contained fragments of crucible and clay mould in its earliest fills. The moulds included fragments of both the inner valves and outer wraps. It has been suggested that the former, made from an extremely silty fabric, may have been made from the local brickearth. The crucible had apparently been used in multiple firings, and relined in a similar manner to the crucibles from Springfield in Essex. Although this material, especially the crucible fragments, indicates that bronze casting was being undertaken on this site, there appears to have been no other evidence of this industry, bar a single mould fragment recovered from the fill of a post hole, some distance from the well. Although the crucible and mould fragments are few in number, the latter appear to have been from more than one mould. There are probably not enough inner valve fragments to identify the object(s) being cast, which may have been sword or spear blades. This material is likely to be of regional or national significance, and bears comparison with similar groups from Mucking and Springfield, both in Essex.

There are four possible occupation sites. The western occupation site[38] consists of a single possible roundhouse, comprised of a mostly complete ring of post holes. Within the same enclosure there is a four post structure, as well as pits, and post holes from undefined structures. Apart from the possible roundhouse, ?Building 2, this is the least convincing occupation site. This enclosure, and that to the north, are the most regular of those that survive, being virtually square in plan. It is possible that these were some of the earlier elements of the field system, with the layout becoming less regular as it expanded and was modified, having to conform to earlier elements. It would require more precise dating than can be provided by pottery to prove this theory.

A second occupation site[39] is suggested by a large possible roundhouse, ?Building 3, which would measure *c.* 10 m across. Several possible post hole structures existed in the same enclosure, of which one neatly encloses a corner of the area containing a cooking pit more than 6 m long. The disused cooking pit was cut by the construction or expansion of the wide droveway to the north. A different phase of that droveway cut the silted up sump on the northern side of the enclosure, suggesting that the occupation site may have gone out of use by that time.

The third, and most intensive, occupation site[40] lay in the same location as the group of Neolithic pits and possible building. It is as yet unclear whether the latter was a Neolithic or Late Bronze Age structure, or structures, see above, p 8. Analysis of the post holes in this area suggests the partial remains of three round houses lay within this enclosure: Buildings 4, 5, and 6. Further post holes represent fencelines and several four post structures. The number of possible buildings, and the alterations to the surrounding ditch

[35] Sub-groups 37-40, 56-7, 96-8, 187.
[36] Sub-groups 373-4.
[37] Sub-groups 56-57.
[38] Sub-groups 142, 272, 278, 388, 415, 471.
[39] Sub-groups 259-60, 394-6, 441, 443-4, 447.
[40] Sub-groups 251, 339, 344, 349-50, 352-3, 362-6, 424-5, 431, 454, 487.

system, suggest that the occupation site went through several phases of construction, requiring further analysis.

The fourth possible occupation site[41] lay in the southeastern corner of the excavations. There were no indications of any buildings, but four cooking pits, and a similar number of four post structures, imply occupation in, or at least close to, this area. The internal sub-divisions of the ditched enclosures seem to have gone through three phases of construction. These included the replacement of a fenceline by a ditch, and a change of alignment.

Whilst the eastern boundary ditch appears to enclose the vast majority of Late Bronze Age activity, a small group of features lay outside of it. These appear to be associated with a ditch which seems to predate the eastern boundary ditch, and include a small 'cooking pit', a pit filled with charcoal and ?ash, the latter in association with a rectangular stake hole structure. Although pottery from a pit indicates a Late Bronze Age date for this activity, it is as yet unclear how it relates to the Late Bronze Age field system and associated activity and occupation.

Fifteen possible cremations have been identified,[42] some of which may have been refuse pits or post holes, whose fills included burnt animal bone.

In the southeastern corner of the site, the Late Bronze Age deposits were apparently sealed by what is probably a flood deposit,[43] which could have been the product of flooding from the River Crane or one of its tributaries. This episode may date to the Late Bronze Age or Early Iron Age.

Preliminary examination of the Late Bronze Age material suggests several areas where further analysis is required. These include the phasing of the construction and alterations to the field system; the relationship of the activity outside of the eastern boundary to that within it; and the distribution of cremations, 'cooking pits', four post structures, and other distinctive classes of features, with respect to the possible occupation sites. A number of these subjects would be informed by judiciously selected Carbon 14 dates.

Further analysis of the distribution of cremations with respect to each other and the occupation sites is required.

[41] Sub-group 47, 59-60, 99, 170-2, 176.
[42] Sub-groups 63, 69, 73, 101, 114, 116, 173, 191, 209, 221, 372, 393, 409, 413, 451
[43] Sub-groups 15, 17-18, 30, 58, 151.

Figure 4 Period 4: Iron Age

Period 4: Iron Age

see Figure 4.

Sub-groups: 81-2, 152, 169.

Only four features, located on the very northern edge of the site, may be attributed to the Iron Age. Of these, only one pit contained pottery of definite Iron Age date, and that only ten sherds. Two other pits, which contained no dating evidence, may also be part of the same activity.[44]

Part of a post hole and beam slot structure lay just within the limits of excavation.[45] This may have formed part of one face of a building and three internal post holes, but could have been merely a robust fence. Two of the three sherds of pottery recovered from the structure were identifiable as dating from the Late Bronze Age or Early Iron Age. Given the proximity of the pit containing Iron Age pottery, in an area with little other activity of any period, this structure has been tentatively assigned an Iron Age date.

The location of these features on the very edge of the site suggests that any focus of Iron Age occupation lay to the north of the limits of excavation. They should be studied in conjunction with the Iron Age features observed recently to the northeast of the site, in Cranford Park,[46] as well as those further afield.

A single fragment of Iron Age pottery appears to be residual, in a ditch interpreted as Roman, in the southeastern corner of the site.

A further 20 sub-groups contained pottery which could date from either the Late Bronze Age or Early Iron Age. Of these, a significant number represent the disuse of features, or the probable flooding deposit. The majority of the remainder probably date from the Late Bronze Age, rather than the Early Iron Age, but further analysis may indicate that a small number of features can be assigned to the later period.

Period 5: Roman

see Figure 5.

Sub-groups: 1-2, 16, 31, 33-4, 66, 67, 107, 158, 160, 174, 193, 195, 197-8, 210, 213-4, 226-9, 230-1, 237-9, 244-5, 248-50, 252, 276-7, 281-8, 299-300, 307-8, 312 323, 326-8, 330, 331-5, 361, 368-70, 381-4, 389, 391, 393, 406-10, 418, 426, 438, 457-8, 461-2, 470, 472, 474-7, 480, 490.

The Roman deposits were confined to the southern, and in particular, the western, parts of the site. The majority of the features took the form of a series of intercutting ditches, defining a complex of enclosures.[47] Although they consist of at least five phases of construction, preliminary analysis suggests that all of this activity is dated to the later part of the Roman era.

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[44] Sub-groups 81-2, 152.
[45] Sub-group 169.
[46] see Hoad, 1996.
[47] Sub-groups 193, 195, 197, 210, 213-4, 226-9, 230-1, 237-9, 244-5, 248, 250, 252, 276-7, 281-8, 299-300, 323, 326-8, 330, 331-5, 361, 368-70, 382-4, 389, 391, 418, 438, 457-8, 461-2, 475-6, 480.

Figure 5 Period 5: Roman

The majority of the enclosures appear to have been extensions of a large sub-rectangular enclosure, *c.* 100 x 35 m, which probably forms the second phase of Roman activity.[48] The majority of the Roman artefacts from the site came from this enclosure ditch, and includes two fragmentary bracelets, a ring-headed pin, a gaming counter fashioned from a pot sherd, two possible quern fragments, fragmentary shears, and fragments of heavy lead sheeting.

Of the Roman features which were not ditches, most fall within this large enclosure. They comprise three wells, a post hole structure, and thirteen pits.[49] A group of seven minims, all irregular 'fallen horseman' types of *c.* 355-365, was recovered from one of the pits, whilst another contained a probable hoard of metalwork.[50] The latter included an iron agricultural tool, probably some form of reaping hook, chain fragments, double-spiked loops, an iron plate, and an enigmatic lead ring with iron rods running through the centre. This pit also produced pottery dated from AD 350-400, and has parallels from other sites in southeast England, with which it will need to be compared. The precise form of the sub-rectangular post hole and ?beam slot structure[51] is not yet understood, but it may have formed a small enclosure. Outside of the large enclosure, a post hole or pit produced a single glass bead with blue and yellow spiral decoration, and a group of hobnails were found one of the ditches of a possible droveway.

The Roman activity on the eastern side of the site was severely limited. The major feature was a droveway, probably a continuation of one seen in the 1989-90 excavations, which ran across the site from west to east.[52] The northern ditch defining the droveway appeared to have been replaced, the redug ditch lying 1 m to the side of the original. The southern ditch was seen only in section, its course having been suggested by the locations of several small finds, one of which was a silver *siliqua* of Valentinian II. The only other possible Roman features on the eastern part of the site were a pair of relatively short ditches lying at right angles to one another.[53] One of these ditches truncated the silted up Late Bronze Age trackway, and although undated, its alignment suggests possible association with the Roman droveway to the south. The second ditch contained abraded prehistoric pottery, interpreted as being residual.

There is no evidence of Roman buildings, or other features distinctive of occupation, either within the large enclosure or without. It is possible, given the heavy levels of truncation on the site, that buildings with shallow foundations, perhaps of wooden construction, could have existed but not survived. Alternatively, any buildings may have lain outside of the areas of excavation. Analysis of the function and distribution of Roman artefacts, particularly those from the large enclosure ditch, may suggest whether the activity was purely agricultural, or whether there are any indications of occupation in this area. It has been noted that the pottery included an unusual number of colander sherds, and that some wares show burning or sooting from use, suggesting domestic activity.

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[48] Sub-group 197.
[49] Sub-groups 67, 193, 198, 307, 381, 393, 408, 410, 477, 480-1, 490.
[50] Sub-groups 198 and 408, respectively.
[51] Sub-group 193.
[52] Sub-groups 1, 2, 66, 158, 160, 107, 174.
[53] Sub-groups 16, 31, 33-34.

Figure 6 Period 6: Medieval and post-medieval

At most four Sub-groups contain pottery of 1st or 2nd century AD date, and much of this material is be residual in 3rd or 4th century contexts. Indeed, much of the late 3rd to 4th century pottery may itself be residual, in late fourth century contexts. Further analysis of the internal phasing and dating of the Roman features is needed, and residual 1st or 2nd century material may indicate that some earlier activity took place on this site. This should include further research into Alice Holt ware, which should help in refining the dating sequence. The apparent break in activity between the second and late 3rd centuries AD has been noticed on other sites in West London, with which it will need to be compared.

Assessment of the Roman pottery identified five contexts containing pottery classified as 'unknown', of Late Iron Age/early Roman date, which will require further work in order to define the dates more closely.

Period 6: Medieval and Post-Medieval

see Figure 6.

Sub-groups: 135, 189, 355, 463, 466, 467, 468, 485.

There is no evidence for occupation on the site after the Roman period, but a series of shallow linear features run across the site from west to east, roughly parallel with the modern Cranford Lane. The dating material from these features was a mixture of prehistoric, Roman, and a lesser quantity of 16th century pottery. These features are interpreted as the remains of post-medieval, and probably medieval, 'ridge and furrow' cultivation. Similar 'ridge and furrow' survives to the northeast of the site in Cranford Park.

Apart from the 'ridge and furrow', only one feature is dated this period,[54] a pit containing a mixture of Roman and late 18th or 19th century pottery. This is interpreted as a post-medieval feature, with residual Roman material.

Tree Holes

Sub-groups: 42, 43, 64, 78, 88, 125, 128, 146, 162, 165, 211, 212, 217, 227, 236, 298, 304, 310, 376, 385, 387, 395, 405, 422, 440, 449, 465.

A large number of tree extraction and root holes were present across the site. Twenty-nine were excavated, of which only five produced dating material. Two contained possible Neolithic pottery, one Neolithic or Middle Bronze Age, one possible Late Bronze Age, and one Roman with residual Neolithic.[55] Some or all of this material may be residual.

It is possible that analysis of the distribution of the tree holes with reference to dated features, especially the few which were cut by such features, may show that some were the result of prehistoric tree clearance.

[54] Sub-group 485.
[55] Sub-groups 165, 442, 449, 42, 304, respectively.

TABLE OF PERIODS REPRESENTED

Note: Many of the sub-groups for this site are roughly equivalent to the groups used in the previous West London Gravels projects, at least partly as a result of the much larger quantities of data from Cranford Lane.

Summary - Provisional Dating	
Period or type	**Number of Sub-groups**
Neolithic	10
?Building 1 - Date uncertain	12
Middle Bronze Age	26
Late Bronze Age	236
Iron Age	4
Roman	90
Medieval/Post-Medieval	8
Tree Holes	27
Not yet assigned	78
Total	485

Neolithic

Sub-groups: 79, 118, 137, 289, 346-8, 390, 449, 488.
?Building 1 (dating uncertain) 199-204, 273-4, 338, 340-2.

Middle Bronze Age

Sub-groups: 19, 44-6, 52-5, 76, 83, 86-7, 91-2, 108-10, 112, 136, 141, 144, 193, 302, 449, 453, 489.

Late Bronze Age-

Sub-groups: 4-5, 9-15, 17-18, 20-30, 32, 37-41, 47-8, 50-1, 56-3, 65-6, 68-9, 71-5, 89, 95, 96-9, 101, 104, 113-4, 116, 119, 120, 123-4, 126, 129, 130, 134, 142-3, 145-7, 149, 151, 153, 155-7, 161, 163-4, 167, 170-3, 176-7, 179-82, 184-5, 187-8, 190-2, 196, 205-9, 215, 218, 220-4, 233-5, 240-3, 251, 252, 254-6, 257-65, 267-72, 278-80, 290-5, 297, 301-2, 309, 311, 313-4, 316-7, 318-22, 325, 336-7, 339, 344, 349-50, 352-4, 356-8, 362-7, 371-4, 375, 388, 392-6, 398-9, 402-4, 406, 409, 411-7, 419-20, 424-5, 430, 431-6, 439, 441-2, 443-8, 450-2, 454, 456, 460, 471, 474, 483-4, 487.

Iron Age

Sub-groups: 81-2, 152, 169.

Roman

Sub-groups: 1-2, 31, 33-4, 66, 67, 107, 158, 16, 160, 174, 193, 195, 197-8, 210, 213-4, 226-9, 230-1, 237-9, 244-5, 248-50, 252, 276-7, 281-8, 299-300, 307-8, 312, 323, 326-8, 330, 331-5, 361, 368-70, 381-4, 389, 391, 393, 406-10, 418, 426, 438, 457-8, 461-2, 470, 472, 474-7, 480, 490.

Period 6: Medieval and Post-Medieval

Sub-groups: 135, 189, 355, 463, 466, 467, 468, 485.

Tree Holes

Sub-groups: 42, 43, 64, 78, 88, 125, 128, 146, 162, 165, 211, 212, 217, 227, 236, 298, 304, 310, 376, 385, 387, 395, 405, 422, 440, 449, 465.

5 RESEARCH POTENTIAL

5.1 Original Research Aims

These have been reconstructed using the 'proposal for excavation and further evaluation' for Areas C, C1 and D, as there was no method statement for the first phase of excavation in Area B. Other aims have been derived from the evaluation report.

Broadly, the aim of the project was to provide a detailed study of a large landscape area, where it had been shown that there was a multi-period range of settlement and land management features.

It was felt that the range and quality of the material would contribute materially to an understanding of:

- the development of agricultural settlement in the Neolithic;
- the establishment and development of settlement and agricultural landscapes and practices through the Late Bronze Age;
- and the final stages of Romano-British settlement.

More specific research aims included:

5.1.1 To establish a dating framework for the prehistoric periods from the significant quantities of artefacts represented.

5.1.2 To establish if there is evidence of Neolithic settlement.

5.1.3 Is there any evidence for changes in land organisation in this period, and changes to the local environment?

5.1.4 To provide evidence for the Late Bronze Age/Early Iron Age transition, for which there is only limited evidence from previous controlled excavation.

5.1.5 To further understand the development of late Roman rural settlement and its pattern of land use.

5.1.6 To trace any buildings relating to the Roman enclosures, and determine their form and period of occupation.

5.1.7 Is there any evidence indicating the reasons for a decline of late Roman settlement?

5.1.8 Is there any evidence for contact with immigrants from continental Europe during the period of Roman decline?

5.2 Research Potential of the Data

The original research aims are repeated here from section 5.1.

5.2.1 *To establish a dating framework for the prehistoric periods from the significant quantities of artefacts represented.*

The relatively large quantities of pottery recovered during the excavation provide the basis of the dating structure for the prehistoric periods. They represent activity in the early-middle Neolithic, and an apparent continuum from the Middle Bronze Age through to the Iron Age. The latter period, however, is represented only by a single assemblage of ten sherds. This constitutes one of the largest groups of material from the west London gravels. The earlier Neolithic material, *c.* 300 sherds, has not been found in this quantity hitherto, whilst the apparently unbroken sequence of the mid 2nd millennium to early 1st millennium BC material is also unusual in the area. The full significance of this material can best be brought out by integrating it with that already under consideration in the *West London Gravels* project. In effect Cranford Lane extends the local ceramic sequence decisively back into the earlier Neolithic, and provides a sequence of predominantly domestic later prehistoric, *i.e.* Deverel Rimbury and Post-Deverel Rimbury, pottery which has local and regional significance.

This sequence is capable of further refinement, by means of a judiciously selected sequence of Carbon 14 dates. These would provide more precise dating than that derived from the pottery, as only just over thirty contexts produced groups of 25 or more sherds, large enough to provide confident dating of defined episodes, as per LPCRG guidelines. The assemblages from contexts forming sub-groups are, of course, larger, allowing more confident dating of the more extensive features and structures.

The Carbon 14 dates would also help to provide a refinement of the dating of Peterborough Ware, which derives from only one of the Neolithic features. This might also indicate whether this feature represents the same, or a different, phase of activity as the remaining Neolithic pottery. It will also contribute to the current national debate about the position of such pottery within the overall ceramic sequence.

5.2.2 *To establish if there is evidence of Neolithic settlement.*

The group of three pits, containing large quantities of Neolithic pottery and flintwork, implies occupation during the early-middle Neolithic. It is possible that ?Building 1 may have been a Neolithic structure. If so, then this would form good evidence for occupation at this time. The isolated features and scatter of residual pottery suggest that the Neolithic activity was more widespread than the single group of activity indicates. Further stratigraphic analysis, and examination of the pottery and lithic assemblages as a whole, may help to identify whether the pits and their contents represent domestic activity or not.

5.2.3 *How can the data from Cranford Lane contribute to an understanding of the development of agricultural settlement in the Neolithic?*

There are few data directly indicating that the Neolithic occupation had an agricultural function, except by default. The preservation of organic matter in the environmental samples was disappointingly low, and the large number of waterlogged species, including possible grape pip fragments, appear to have been intrusive. A single charred oat grain may actually be part of the Neolithic assemblage.

As a possible occupation site away from the Thames, its location is of some local significance.

5.2.4 *How can the data from Cranford Lane contribute to the establishment and development of settlement and agricultural landscapes and practices through the Late Bronze Age?*

The complex and extensive field system, with several occupation sites and phases of construction and alteration, provides the best opportunity to examine the regulation of, and settlement within, a Late Bronze Age agricultural landscape in West London.

A series of Carbon 14 dates should help to phase the construction and alterations to the system of enclosure ditches and droveways. Further stratigraphic analysis will define the nature of the structures within the occupation sites more closely. Further study, and hopefully dating, of the group of activity outside of the eastern boundary ditch should result in an understanding how it relates to the occupation within the field system.

Further stratigraphic analysis of the possible Late Bronze Age round houses, and associated features, should provide more information on the character and phasing of the occupation. In particular, the multiple phasing of the occupation site which includes Buildings 4, 5, and 6 requires further work. Analysis of the distribution of cremations, 'cooking pits', four post structures, and other distinctive features, with respect to the possible occupation sites may also be informative. The albeit small assemblages of animal bone and organic material from environmental samples, along with residues from pottery, should give some indication of the products of the agriculture.

The crucible and mould fragments indicate that minor industry was also taking place within the settlement, and are worthy of study in their own right, see 5.3.6 below.

5.2.5 *Is there any evidence for changes in land organisation in this period, and changes to the local environment?*

Preliminary analysis suggests that there are at least three phases of construction and alterations to the Late Bronze Age field system. The phasing and dating of which will be refined by further stratigraphic analysis, and, hopefully, a series of Carbon 14 dates. In addition, one of the occupation sites displays two phases of buildings. The poor survival of organic matter from the site is likely to provide only a generic indication of the local environment, but might possibly show indications of change over time. The results of palynological analysis from column samples may be more successful.

5.2.6 *To provide evidence for the Late Bronze Age/Early Iron Age transition, for which there is only limited evidence from previous controlled excavation.*

There are nearly 400 sherds of transitional Late Bronze Age/Early Iron Age pottery from the site, most of which appear to represent the later phases of Late Bronze Age activity, and in particular the disuse of a number of features. This includes a possible flood deposit in the southeastern corner of the site, which probably sealed the Late Bronze Age activity. A few sherds came from the backfills of a post hole and beam slot structure, which appeared to have been associated with a pit which contained a small group of Iron Age pottery.

This evidence, sparse as it is, indicates that the transition from Late Bronze Age to Early Iron Age was marked by the abandonment of the settlement within the area of excavation.

5.2.7 *To further understand the development of late Roman rural settlement and its pattern of land use.*

The complex series of Roman enclosures exhibits at least five phases of construction and expansion, and further analysis of stratigraphy and dating evidence should indicate the sequence of enclosures, or enclosure systems, their character and date. Examination of the small assemblages of animal bone and environmental data may indicate which crops and animals were being grown, or at least consumed, on the site.

Further analysis of both stratigraphy and artefact function and distribution should indicate whether there is evidence of occupation on the site. Although direct evidence for structures is lacking, preliminary examination of the pottery suggests domestic activity.

This agricultural activity, and possible occupation, dates from after *c.* AD 270, and probably from after AD 350. This indicates a fairly rapid expansion of the enclosure system, during the closing years of Roman rule. The dating is capable of further refinement, in particular a comparison of the pottery with Roman wares from Surrey.

5.2.8 *To trace any buildings relating to the Roman enclosures, and determine their form and period of occupation.*

Any buildings associated with the enclosures have either been lost to truncation, or lay outside of the areas of excavation. If the analysis mentioned under 5.2.7 provides evidence of occupation, then it should also produce some indication of the period of occupation.

5.2.9 *Is there any evidence indicating the reasons for a decline of late Roman settlement?*

There is no direct evidence for a settlement, but further analysis of the Roman data may provide an indication of how, and why, the enclosures and associated features went out of use. If the analysis mentioned under 5.2.7 provides evidence of occupation, then the combined information may provide indications as to the reasons for the decline of any settlement.

5.2.10 *Is there any evidence for contact with immigrants from continental Europe during the period of Roman decline?*

No, none.

5.3 Further Potential Identified from Assessment

5.3.1 The full extent and character of the activity on this site, particularly that from the Late Bronze Age and Roman periods, can only be fully understood in conjunction with the data from evaluation and excavation immediately to the south, CLH89 and CLH90. A number of the Late Bronze Age and Roman alignments can be seen to continue from one site to the other. Not only will this work provide further information on the extent of the Late Bronze Age field system and Roman enclosure system, but correlation with the better dated features from the recent work will help to phase the earlier sites.

5.3.2 The complex of post holes and slots which has been called ?Building 1 should be analysed in order to determine if it was a building, or a number of separate structures, and to provide a date for the structure(s). If it were a Neolithic building, then it would provide the clear evidence of occupation lacking for that period. If, however, it were a number of separate Late Bronze Age structures, then it would provide further information about the organisation of the largest of the occupation sites.

5.3.3 A large number of tree extraction and root holes were recorded in plan, and a lesser number excavated. A small number produced Neolithic, Middle Bronze Age, or Late Bronze Age pottery, and the date of others may be deduced from their stratigraphic relationships. Analysis of these should determine if any of them may be assigned a prehistoric date, taking into account the possibility of residuality. Spatial analysis, comparing the distribution of tree holes with adjacent prehistoric features, may produce further information on tree clearance in the various prehistoric periods.

5.3.4 The Late Bronze Age wells and 'sumps' (see page 13) have different distributions, which may be related to a difference in date. Production of a more tightly dated phasing for the field system and associated settlements, see 5.2.4 above, may indicate whether this was a change in water supply technique during the Late Bronze Age. Alternatively, is there a reason connected with the geology, topology, or water table of this site which would explain the use of the two techniques simultaneously.

5.3.5 Aerial photography shows that at least one crop mark, a right angled ?ditch, existed to the north of the site, which would now have been destroyed by quarrying. Examination of this and other crop marks, and plotting them with reference to the Ordnance Survey National Grid should indicate whether any of them may be parts of the Late Bronze Age or Roman field and enclosure systems, and possibly provide an indication of their extents.

5.3.6 The Late Bronze Age crucible and mould fragments, though few, are likely to be of regional or national significance, and they bear comparison with other similar groups from Mucking and Springfield in Essex. Scientific analysis may yield further information on these artefacts.

5.3.7 There is a small quantity of 1st or 2nd century AD pottery, and an unstratified coin of AD 140-180, attesting to some activity on the site before the main phase of 3rd, or more probably 4th, century activity. Analysis of the phasing and

dating of the Roman enclosures should indicate whether this material is residual, or if some features belong to an earlier phase. In either case, this may provide further evidence of a 'gap' in occupation and activity in this area between the mid 2nd and mid 4th centuries. This will need to take into account any refinement of the dating of the later pottery, particularly Alice Holt ware, and be compared with other sites in the area., such as Wall Garden Farm and Holloway Lane.

5.3.8 The Alice Holt ware present at Cranford Lane is much more diverse than that found on City sites, and as a result can be difficult to identify with precision. As a result, any refined analysis of the dating of the site would require additional research into Alice Holt ware, preferably by viewing large assemblages from Surrey Museums and sites.

5.3.9 The late Iron Age/early Roman material from Cranford Lane is more valuable when seen for its contribution to a larger study of sites from the West London area, that have also produced pottery of this date, including the sites in the *West London Gravels Project*. The need to define the late Iron Age/early Roman wares, which are at present persistently a problem when spot dating sites outside the City is paramount. Although for much of this material the forms are not reconstructable, systematic petrological analysis of the fabrics may lead to sourcing of wares and establishing areas of distribution. The study of unsourced grog- sand-, shell-, and coarse tempered pottery is an essential part of research for this area, in an attempt to improve our understanding of the chronology, development of settlements and land-use and the process of romanisation in the London's hinterland. Comparisons should also be sought outside the London area, for example in Surrey, in an attempt to ensure the material is placed within the correct ceramic tradition.

5.4 Revised Research Aims

5.4.1 Integration of the data from CLH89/90 with that from this site, and analysis as part of a programme of general analysis of landscape development on the West London Gravels.

5.4.2 To date the Neolithic activity, including the possible building and the pit containing Peterborough ware, more precisely by means of Carbon 14 dating. The latter would contribute to the refining of the dating of this pottery tradition, and indicate whether this activity was contemporary with, or a separate phase from, the early-middle Neolithic activity.

5.4.3 Analysis of the ceramic, lithic, and environmental contents of the Neolithic pits to attempt to determine their function. Is there evidence of occupation activities?

5.4.4 Petrological analysis of the polished axe, to determine its source.

5.4.5 Further analysis to determine whether ?Building 1 was in fact a building, and whether it was of Neolithic or Late Bronze Age date. This would include assessment of the pottery from the associated sub-groups as an assemblage, with reference to stratigraphic and spatial relationships.

5.4.6 How does this activity, and possibly occupation, fit into the pattern of Neolithic activity in the locality?

5.4.7 To analyse the stratigraphic relationships and distribution of tree holes, in order to determine if any of them represent tree clearance during the Neolithic, Middle, or Late Bronze Ages.

5.4.8 To define the dating and phasing of the Middle and Late Bronze Age activity more closely, by means of a series of Carbon 14 dates and further stratigraphic analysis.

5.4.9 In particular, what is the significance of the changes of layout and alignment in the northern and eastern parts of the Late Bronze Age field system? Is the contrast between water supply from 'sumps' and that from wells associated with occupation of differing date? How does the activity outside of the eastern boundary ditch relate to that inside it?

5.4.10 Examination of aerial photographs for evidence of the extent, and possibly the boundaries of, the field system. In particular, the right angled cropmark to the north of the site.

5.4.11 Further analysis of the environmental samples to indicate not only the general environmental conditions in the area, and what, if any, changes can be observed, but also the species being grown in the Late Bronze Age, and Roman, field systems.

5.4.12 Further stratigraphic analysis of the possible Late Bronze Age round houses, and associated features, in order to understand the character and phasing of the

occupation more fully. In particular, the multiple phasing of the occupation site which includes Buildings 4, 5, and 6 requires further work.

5.4.13 Detailed analysis of the bronze casting moulds and crucible fragments, including X-ray photography of the crucible fragments to determine if pieces of a previous melt are trapped beneath what appears to be a relining, and possibly X-ray fluorescence analysis. Analysis of the composition of the moulds, to determine if they were made from local materials. Comparison should be made with similar material from other sites, in particular Mucking and Springfield in Essex.

5.4.14 Further analysis of the possible cremations to determine if the bone, from those not yet identified, is human or not. Is there any evidence for bone pathology, given the size and condition of the fragments? Is it possible, allowing for truncation and poor preservation, to determine if these are token amounts of bone or 'complete' cremations?

5.4.15 Analysis of the distribution of cremations, 'cooking pits', four post structures, and other distinctive features, with respect to the possible occupation sites.

5.4.16 Analysis of the phasing of the Roman enclosures, and their dating. In particular, is it possible to identify 1st or 2nd century activity on the site? This should include further research into the Late Iron Age/early Roman pottery, and Alice Holt ware, see 5.3.8 & 5.3.9. How many phases of activity do the enclosures represent, and over how long a period of time? Can analysis of the function and distribution of Roman artefacts determine if there is a concentration of domestic activity, which would indicate that there had been occupation on the site, but that any building(s) had been truncated.

5.4.17 What evidence is there for the date and nature of the end of Roman activity on the site? This will be closely related to the nature, extent, and date of the last phase of the enclosure system, particularly its disuse.

5.4.18 How does the dating of Roman activity correspond to that of other Roman sites in the area? This should involve comparison of the pottery assemblage with material from Surrey, in order to refine the pottery dating. Is there any evidence for a period of abandonment, or lack of activity, from the mid 2nd century to the mid 3rd or 4th century, and if so, how does this relate to the activity at Wall Garden Farm and Holloway Lane?

6 CONTRIBUTION TO THE WEST LONDON GRAVELS PROJECT

The Cranford Lane excavations are to be analysed and published as an integral part of the West London Gravels Project, and, therefore, academic objectives and requirements for publication work will be found in the relevant project design.

This site can contribute to the following topics from the *West London Gravels Project q.v.* :

Landscape Database

- The presence of Neolithic activity, possibly occupation.
- Middle Bronze Age activity, probably occupation.
- Late Bronze Age agricultural settlement, with evidence of minor industry (bronze casting).
- Iron Age activity.
- Roman activity, and possibly occupation.

Earliest Occupation of the Gravels

- Palaeolithic and Mesolithic findspots: unstratified worked flint.

The Emergence of a Ritual Landscape

- The group of pits containing large pottery and worked flint assemblages dating from the early-middle Neolithic. The possible building. The scatter of isolated features and residual Neolithic pottery.
- The pit containing Peterborough ware, including any refinement of its dating.

Settlement and Agriculture Transformations

- The Middle Bronze Age occupation and its dating.
- The extensive Late Bronze Age field system and settlement. Detailed discussion including finds and environmental assemblages. The dating and phasing of the system, with changes of layout and alignment.
- The bronze casting moulds and crucible fragments, and comparison with similar material from other sites.

Structured Settlement

- The Iron Age activity.

The Early Roman boom and Second Century Decline

- Further analysis may date a few of the Roman features to the 1st or 2nd centuries. Residual pottery and coins point to some activity at that time.

Roman Re-emergence

- The extensive field systems, their phasing and dating, and the evidence for occupation. Detailed discussion including finds and environmental assemblages.
- The hoard of metalwork, and its parallels in southeast England.

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This assessment report was written by Nicholas Elsden, with contributions from Janice Conheeny (Cremations), Jon Cotton (Prehistoric finds), John Giorgi (Environmental), Pat Hunter and Jane Sidell (Timber), Louise Rayner and Roberta Tomber (Roman Pottery), Kevin Rielly (Faunal Remains), Angela Wardle (Registered Roman finds).

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APPENDIX 1. PREHISTORIC FINDS ASSESSMENT

This report provides a brief provisional assessment of the potential for further analysis of the prehistoric lithic and ceramic material from Cranford Lane, as recommended in MAP2. It has been written some little while after the original inspection of the material, making use of data recording sheets (for the lithics) and summary computer printouts (for the ceramics).

Lithics

In all, 1220 pieces of worked stone were recovered from 264 separate contexts. These comprise 1218 pieces of struck flint, of which the majority were worked from local gravel cobbles of variable size and quality, and two pieces of 'foreign' stone. (Other pieces, e.g. quartzite rubbers and quern fragments, have not been included in the above figure.) However, only three contexts (all of probably earlier Neolithic date to judge from associated pottery) produced more than 50 flints, and only six produced more than 20.

With the exception of the three moderately large earlier Neolithic groups ([1197], [1293] & [1400]), the majority of the flintwork appears to be of late prehistoric (i.e. middle-late Bronze Age) type, and of typically undistinguished workmanship. The small size of most of these groups is likely to rule out metrical analysis.

Diagnostic artefacts are few, but include a single, presumably redeposited, rod microlith [1611], several broken leaf arrowheads [747] & [1400], and fragments of ground flint axes [833], [928], [1482/3] & [1812]. Two possible stone axe fragments come from [934] & [2144]. There are also fourteen scrapers from various contexts, one chisel arrowhead [1] and one possible Palaeolithic flake [603]. Much of the remainder of the material comprises shattered flakes and smashed nodules.

Of itself, the material is unlikely to be of more than local/regional significance, but it will provide useful corroborative data to add to that already under consideration as part of the *West London Gravels* project. Overall, the three moderately large groups of flintwork associated with the hitherto locally rare 'undecorated open bowl' Neolithic ceramics from the site are of perhaps most note, and invite comparison with the much larger assemblages from the relevant levels at Runnymede Bridge and from the earlier Neolithic monuments at Staines, Lower Horton and Staines Road Farm, Shepperton .

Ceramics

The site produced nearly 4000 sherds of handmade prehistoric pottery from some 270 contexts spanning the earlier Neolithic to the late Bronze Age/Early Iron Age transition. The vast majority are in a range of burnt flint-tempered fabrics. As such, the Cranford Lane assemblage comprises one of the largest groups of material yet recovered from the west London gravels. However, only just over thirty contexts produced large enough groups (25+ sherds) to allow for confident dating of defined episodes (as LPCRG Guidelines).

Nonetheless, the assemblage includes significant groups of 'undecorated open bowl' forms attributable to the earlier Neolithic and others spanning the mid second millennium

- early first millennium BC (i.e. Deverel Rimbury and post-Deverel Rimbury forms). Several much smaller groups of Peterborough Neolithic material were also present, although no grooved ware could be identified. Diagnostically early second millennium BC material (e.g. beaker, collared urn etc.) was, as usual, notable for its absence. The sequence appears to stop short of the full Iron Age.

This material adds significantly to that already known from west London: the earlier Neolithic material (c. 300 sherds) has not been found in this quantity hitherto, while the ?unbroken sequence of mid second millennium to early first millennium BC material is also unusual in the area. The association of post-Deverel Rimbury material with a small group of crucible and clay mould fragments is of particular interest.

Again, the full significance of this material can best be brought out by integrating it with that already under consideration in the *West London Gravels* project. In effect Cranford Lane extends the local ceramic sequence decisively back into the earlier Neolithic, and provides a sequence of predominantly domestic later prehistoric (i.e. Deverel Rimbury and P-DR) pottery which has local/regional significance. The crucible and clay mould fragments themselves, though few, are likely to be of regional/national significance, and they bear comparison with other similar groups from Mucking and Springfield in Essex.

Jonathan Cotton 07.05.96

APPENDIX 2. ROMAN POTTERY ASSESSMENT

Roman pottery: 7 boxes
Post-medieval pottery: <1 box
Spot-dating and computerization according to standard MoLAS methods: Yes

Roman pottery

Date-range(s): Where datable mostly 250/270-400 and 350-400. There are some rare sherds of samian and coarse wares, dating to the 1st and 2nd centuries AD, which may indicate some earlier occupation in the area.

Size of groups:[56] Small

Post-medieval pottery

Date-range(s): 1500-1600; 1780-1900

Size of groups: Small

Comment: [316], [1075], ?intrusive 1780-1900

Unknown pottery

Comment: Five contexts contain pottery, comprising more than one fabric, of late Iron Age/early Roman date.

Condition of pottery:

The sherds are frequently small and abraded, particularly the late Iron Age/early Roman sherds. Some wares, particularly Portchester D (PORD) show burning or sooting from use.

General characteristics:

The Roman pottery is similar in composition and condition to other sites in the West London area, for example Long Lane, Ickenham (LLP94) and Imperial College Sports Ground, Cranford Lane (IMP96). The Late Iron Age/Early Roman material is hard to define except under the broad fabric groupings of sand, grog, coarse (coar) and shell (shel).This is partly due to the condition of the sherds and partly due to a lack of understanding of the fabrics for this period, particularly in this area. The majority of this

[56] small = <30 sherds; medium = 30-100 sherds; large = 100+ sherds; very large = multiple boxes

and later 1st-2nd century AD material is residual with 3rd and 4th century pottery, but its presence suggests activity continued in the vicinity, if not actually at the site.

The later Roman material is in better condition, although still only present in small groups. It provides an interesting comparison to City assemblages. This site contains much larger quantities of Portchester D (PORD, AD350-400) than occur on City sites, and as such is of particular interest for the late Roman period. Oxfordshire wares (OXRC, OXWS, OXMO, generally 270-400+) and Alice Holt, Farnham ware (AHFA, 250-400) are also well represented. The lack of LR Calcite Gritted ware (CALC - one context only 432), with the same date range as PORD, together with Black-burnished 1- is somewhat surprising.

Vessels of individual importance:

An unusually large number of colander sherds were present, in five contexts with three different examples of fabric (PORD, SAND, AHFA). Their presence is suggestive of a domestic/occupational assemblage. Further work would be required to establish whether the concentration of this type of vessel indicates any specific function for the site.

Potential for further analysis:

In general, more detailed analysis would improve the dating and phasing of the features on site and determine a more precise status for the site. Some vessels, for example the colanders suggest a domestic assemblage, but this is not substantiated by the features excavated. Further analysis of the pottery by function and distribution may elucidate this picture.

Only small quantities of later 1st-2nd century pottery were recovered, mainly residual with later material. This pattern has also been noted on other West London sites (as above LLP94 and IMP96) and requires further investigation and comparison with City and Southwark sites. First impressions suggest similar patterns of contraction on urban and rural sites.

Listed below are more specific aspects that would merit further work:

1. The Alice Holt ware present at Cranford Lane is much more diverse than that found on City sites, and as a result can be difficult to identify with precision. As a result, any refined analysis of the site would require additional research into Alice Holt, preferably by viewing large assemblages from Surrey Museums and sites.

2. The late Iron Age/early Roman material from CFL94 is more valuable when seen for its contribution to a larger study of sites from the West London area, that have also produced pottery of this date, for example LLP94, IMP96 and the sites included in the West London Gravels project. The need to define the late Iron Age/early Roman wares, which are at present persistently a problem when spot dating sites outside the City is paramount. Although for much of this material the forms are not

reconstructable, systematic petrological analysis of the fabrics may lead to sourcing of wares and establishing areas of distribution.

The study of unsourced grog- sand-, shell-, and coarse tempered pottery is an essential part of research for this area, in an attempt to improve our understanding of the chronology, development of settlements and land-use and the process of romanisation in the London's hinterland. Comparisons should also be sought outside the London area, for example in Surrey, in an attempt to ensure the material is placed within the correct ceramic tradition.

Louise Rayner & Roberta Tomber 1/5/95-13/6/96

APPENDIX 3. ASSESSMENT OF THE ROMAN FINDS

1. Quantity

The site produced 61 finds of Roman and post-Roman date; quantified by material as follows, (the number in parenthesis is the number of identified Roman objects):

Ceramic:	1	(1)
Copper alloy:	38	(15, including 8 identified coins)
Glass:	1	(?1)
Iron:	8	(6 - one multiple)
Lead:	10	(?4)
Silver:	1	(1 coin)
Stone:	2	(?2)

The finds have been accessioned in accordance with the MoLAS system; the copper alloy and iron has been x-rayed.

2. Date, Range and Context

Coins			
Context	**Accession**	**Type**	**Date**
US	345(md2)	Lucilla, Sest	140-180
311/264	9	Tetricus I, Ant	268-70
1546	322	Claudius II, Ant	268-70
309	1	Carausius, Ant	287-96
1580	286	Irregular Urbs Roma	340-6
311/264	8	Irregular FH	355-65
312	15	7 minims, irregular FH	355-65
US	388	Valentinian II, siliqua	378-88
311/264	5	?James I, farthing	1603-20
1624	287	Broken, illegible	
US	409	illegible	Roman
US	410	illegible	?Roman
US	411	illegible	Roman

The coins range in date from the 2nd century, 140-80 (Lucilla) to the late 4th century, 378-88 a silver siliqua of Valentinian II, both of these unstratified, although recorded in plan. As can be seen from the list, most are of the late 3rd-mid 4th century. Coins from the enclosure ditch, contexts [311/264] date from the late 3rd century (Tetricus I, 270-3) and 4th century (*c*.355-68), with another (340-6) from a later addition to the enclosure, context [1580]. (There is also a 17th-century coin in context [311].) A small hoard of seven minims, all irregular 'Fallen Horseman' types of *c*. 355-65 came from context [312], a pit fill.

The majority of the Roman artefacts were found in the large enclosure ditch and there is an interesting group from a pit, context [595]. Most artefacts have been metal-detected, thus creating a bias towards metal objects and it is noticeable that there are no bone artefacts. Apart from the coins, other objects of copper alloy comprise two fragmentary bracelets [311/264]<7> and <12> and part of a spoon [+]<346>, these items again from the enclosure ditch or unstratified. One ?mount, also from [311/264 <10> is of interest for its composition (see section 4). Other copper alloy objects are likely, from their contexts, to be of Roman date, but are unidentifiable. Several of the iron objects are identifiable from the radiographs, but are not intrinsically datable. However, it is likely that fragmentary shears from ditch context [724]<141> and a fitting, a ring-headed pin from [1287]<347> are of Roman date as are, more obviously, hobnails from a shoe [1567]<342>. The ditch contexts also produced fragments of heavy lead sheeting.

The group of metalwork from context [595] a pit fill within the Roman enclosure is of especial interest. It comprises an iron tool (about 0.75m in length) with a stout integral handle and a curved blade, perhaps a form of reaping hook, several iron fittings, chain fragments and double-spiked loops, an iron plate and a large circular lead object (?weight) with iron inserted through a central hole. The group may be a small hoard and deliberately deposited (see below).

There are very few finds in materials other than metal. A single glass bead has decorative blue and yellow spiral decoration [1596]<125>. A gaming counter has been fashioned from a potsherd (Alice Holt Farnham Ware, AHFA) [733]<397> and two fragmentary querns from Roman contexts may be of Roman date. They appear to be made of locally available stones, rather than the imported basalt lava which is more common in London.

Post-Roman

The post-Roman artefacts are largely unstratified. A coin of James I found in the Roman enclosure ditch is intrusive. The identified metalwork comprises miscellaneous buttons, a ferrule and a copper alloy rumbler bell, probably from harness.

3. Condition of the finds

The copper alloy is in general badly corroded. Several of the coins being in extremely poor condition and several fragments, mostly from unstratified contexts, are too severely corroded for identification. The ironwork is encrusted, but several objects can be identified with the assistance of radiography.

4. Potential of the material

The dates for the coins are consistent with the dates of the pottery (see pottery assessment). The presence of this group of Roman material in a rural context is of interest in suggesting a Roman presence, particularly in the 3rd and 4th centuries. The group is too small to permit an accurate definition of its ‘character’ but the identified objects are typical of those found on rural domestic sites.

Key groups and objects of intrinsic interest

The small 'hoard' of ironwork and lead from pit context [595] merits further study. Although the individual items cannot be dated, the associated material points to a date in the 4th century and this example would therefore belong to a group of hoards of similar date, found in southeastern England (Manning 1972, p 237). Manning discusses the possible reasons for the deposition, both practical and ritual, of these hoards together with two other groups, hoards of Iron Age date and those from Roman military sites in northern Britain (*ibid* p 238-49). Investigative work is necessary to identify the individual components of the Cranford Lane group (see below) and further research is necessary to place it within the local context.

Copper alloy ?mount, [311/264] <10>

The fragment of sheet metal, which has relief decoration (?moulded), can been seen on the radiograph to have an extremely distinctive composition, a honeycombed appearance, more usually seen in slag, and not at all typical of Roman metalwork. It is possible that it is a miscast, but further investigation of the metallurgy and investigative cleaning of the object is desirable to ascertain the date of this object.

Copper alloy ?strap end [0]<414>. The date and precise function of this object is uncertain. Although unstratified, if resources permit, cleaning and further research of the type should be undertaken.

Reference

Manning, W H, 1972 'Ironwork Hoards in Iron Age and Roman Britain', *Britannia* 3, 224-250

Angela Wardle 3/5/96

APPENDIX 4 FAUNAL MATERIAL ASSESSMENT

1 Introduction

A small quantity of bones was found in contexts belonging to the Neolithic, Middle Bronze Age, Late Bronze Age and Roman periods. The assemblage can be divided roughly into two parts i.e. bone waste from various domestic activities, and concentrations of burnt bone, all from Late Bronze Age contexts, which have been interpreted as cremations. Details concerning the bones from the domestic and cremation deposits are shown in Tables 1 and 2.

The preservation of the unburnt bones is generally very poor. This is undoubtedly due to the acidic nature of the soils found on this site. Noticeably, the burnt bones were better preserved, the burning process possibly acting as some kind of safeguard against chemical attack. Undoubtedly there will have been a survival bias towards the preservation of cattle sized bone fragments.

The site was extensively sampled. However, with the exception of the cremation deposits, none of these samples produced bone fragments. All deposits which clearly contained both burnt bone and charcoal were sampled and then sieved through a 4mm and a 2mm mesh.

All the site features are heavily truncated, which suggests that the likelihood of redeposition is high.

2 The Domestic Waste

This part of the site assemblage is composed of 0.21kg of bone (see Table 1), all of which is poorly preserved, unless burnt, and highly fragmented.

Neolithic

Bones dating to this period were found in two pits (Sub-groups 118 and 342). The former pit may have been a cremation, and was sampled accordingly. Later it was found to contain Peterborough ware Neolithic pottery. The burnt bones (some identified as human) were presumably added to this pit at a later date. A single burnt sheep-size fragment was found in the other Neolithic pit. This feature was found within ?Building 1.

Middle Bronze Age

Two rubbish pits (Sub-groups 46 and 53), the latter situated adjacent to the Middle Bronze Age well (Sub-groups 44 and 45), produced a cattle tooth fragment and burnt sheep-sized fragments (including a rib) respectively. Both pits contained various burnt materials which suggests that they were either used as ‘cooking pits’ or that a proportion of the fills are composed of hearth rakings.

Late Bronze Age

A number of features produced bones, most arising from either the wells (Sub-groups 37, 38 and 373), or the features associated with the rectangular enclosures (ditch Sub-group 163 and pit Sub-group 262) and droveways (Sub-group 30), with a small proportion

recovered from one of the occupation features, a post hole of a four post structure, (Sub-group 176). The latter feature and one of the well deposits (Sub-group 38) were initially interpreted as cremations. Both contain burnt bones, with human clearly present in the posthole deposit. Cattle tibia fragments were identified from the pit and one of the wells (Sub-group 373) and a sheep/goat maxilla (with full dentition) and tibia from another well (Sub-group 37). None of these bones were burnt. The other fragments recovered were either cattle-sized or sheep-sized, with one burnt cattle-sized limb bone fragment from the droveway deposit.

Roman

All the bones were from late Roman deposits, including the large enclosure ditch and its recuts (Sub-groups 197, 389, and 391) and one of the wells (Sub-group 307) located within this major feature. Unlike the previous assemblages, most of the bones are identifiable to species, none are burnt and one bone, a cattle-size fragement from the well deposit is moderately well preserved. Single identified bones were found in each of the ditch deposits *i.e.* Sub-group 389, a cattle tooth; Sub-group 391, a horse tooth; and Sub-group 197, a cattle metacarpus fragment.

3 The Cremations

Concentrations of burnt bone fragments contained within small pits (a total of 15) were generally distributed throughout the site. All the bones had been burnt white, and each deposit was accompanied by a quantity of charcoal. Each has been interpreted as representing an *in situ* unurned cremation. No clear dating evidence was present within any of these pitfills. However it is assumed that they date to the Late Bronze Age.

The contents of 11 (out of a total number of 15) pits were sieved (as described in the Introduction). In general these bones can be seen to be extremely fragmented, the fragment size range varying between 4mm and 20mm, with the vast majority in the first half of this range. It was found that six pits definitely contained human bone (identification made by Janice Conheeney, Human Osteologist at MoLAS), two contained animal bones and two both human and animal bones (see Table 2). It should be noted that these identifications do not exclude the possible presence of either human and/or animal bones in all 11 deposits. Various human limbbone parts and skull pieces were recognised, while the animal bone fragments are limited mainly to indeterminate sheep-size pieces. However there was also one sheep/goat phalange and a ?horse tooth fragment. The latter bone was unburnt and may therefore be redeposited from elsewhere.

Conclusions and recommendations

The information concerning the possible domestic waste is severely limited due to poor preservation and the likelihood of redeposition. Movement of bones between features and periods is demonstrated by the distribution of cremated human fragments (as described in the section on domestic waste above). The species identified will at the least show which animals were used during a particular period *i.e.* Middle Bronze Age, cattle; Late Bronze Age, cattle and sheep/goat; and Roman, cattle and horse. Regarding the age of these animals, there are clearly no juveniles present, and one probably adult individual (the sheep/goat maxilla from a Late Bronze Age well deposit). No further information can be extracted from these data.

Concerning the possible cremations, a proportion certainly contained burnt human and/or animal bones. Most of the latter bones were identified as sheep-sized with one instance of sheep/goat. Of some interest is the fact that the latter species is represented by a phalange. As this skeletal part is within the least meat- rich part of the carcass, its inclusion is at odds with a possible interpretation of this bone as a meat offering. It either represents the only surviving part of a larger offering or another interpretation must be offered. This will need to be compared with other Late Bronze Age cremation sites.

The human content of these deposits has been briefly reviewed, suggesting that human bones are present and that a variety of parts are represented. It is recommended that further work be done on this material by someone with expertise regarding the anlaysis of cremated bone. Of especial interest will be the interpretation of the method or methods used to burn the bone, and a detailed description of the deposits concerning number and completeness of skeletons.

Table 1. The Domestic Contexts

Period	Subgroup	Contexts	Feature type	Wt/number of bones	Species/Category
Neolithic	118(1)	2233	pit	0.07	?Human
	342	1077	pit within ?Bldg 1	+/1	Sheep size
MBA	46			0.001/1	Cattle
	53	2492,2470	pits	0.001/4	Sheep size
LBA	30	1875	silt layer over trackway	0.005/1	Sheep size
	37	1863	well	0.050/2	Sheep/Goat
	38(2)	1812	well		
	163	1954	ditch	0.005/1	Cattle size
	176(3)	2174	posthole	0.018	Human
	262	1774	pit, ?'sump'	0.050/2	Cattle, Cattle size
	373	1518	well	0.070/1	Cattle
Roman	197	1567	ditch	0.010/1	Cattle
	307	695	well	0.004/1	Cattle size
	389	1572	ditch	0.010/2	Cattle
	391	1566	ditch	0.015/1	Horse

Weight in kilogrammes. + weight is less than 1g.
(1) collected with a 4mm sieve (see Cremations)
(2) unwashed sample
(3) 0.013kg recovered using the 4mm mesh and 0.005kg using the 2mm mesh

Table 2. The Cremations.

Context	Subgroup	S. no	Weight and mesh		Species/Category
			2mm	4mm	
601	409	34	0.003	0.019	Human
895	221	103	*	0.003	Human, Sheep size
1390	372	182	0.004	0.015	?Horse, ?Sheep size
1603	393	225	*		
1760	451	253	*	0.008	Sheep/Goat, ?Sheep size
1855	73	281	0.033	0.255	Human
1859	69	283	0.014	0.048	Human, ?Sheep size
1872	63	290		*	
1965	173	306	0.008	0.075	
2149	114	327	0.007	0.163	Human
2213	116	340	0.046	0.163	Human

All weights in kilogrammes. * weight equals less than 1g.

K. Rielly. 13 June 1996

APPENDIX 5 WOOD ASSESSMENT

Two wood samples were taken at Cranford Lane, <284> and <285>, from a Late Bronze Age well, for identification (using Schweingruber 1987) and dendrochronology. Both samples were of oak , (*Quercus* sp.), and neither had a sufficient number of rings for a dating correlation to be made.

It is likely that the species of oak is *Quercus petraea*. This species is often associated with soils of a clayey moist nature to the east of Britain, and generally found in mixed woodland containing hazel, ash etc (Grimes *et al* 1989. 274) . Oak wood has a number of qualities which make it an attractive timber for structural use i.e. it is rigid, flexible and slow to decay (Boulton 1946).

These timbers appear to have been deposited during the use phase of a Bronze Age well. Although unsuitable for dendrochronological dating, they are appropriate for radiocarbon dating, and it is recommended that two samples are submitted, in order to establish a firmer chronology for the period of use.

References

Boulton, E.H.B. and Jay, B.A. 1946. *British Timbers*

Grime, J.P., Hodgson, J.G. and Hunt, R. 1989. *The Abridged Plant Ecology*.

Schweingruber, F.H. 1987. *Microscopic Wood Anatomy*.

P. Hunter and J.S. Sidell. 13 June 1996

APPENDIX 6 ENVIRONMENTAL SAMPLE ASSESSMENT

A total of 267 bulk samples were collected during the excavations from fills of various features including gully fills, pits, post-holes, wells and pits; this included several cremation samples and a bone sample. The volume of these samples ranged from one litre up to 40 litres although the majority were between ten and 30 litres. Eleven column samples have been described and assessed, and sent for palynological analysis.

Six groups of samples were selected on a temporal and spatial basis for processing to assess survival, and determine which of the large number of samples taken had the potential to preserve environmental remains. Separate reports have been prepared for each of these groups and are available from the MoLAS Environmental Archive.

On the basis of this assessment, it was determined that the overall level of preservation was very poor, except for waterlain material from deeply cut features such as pits, 'sumps', and wells. 92 samples were identified as having been taken from features which were not capable of producing environmental information.

These six groups consisted of 81 samples, the majority of which have been provisionally dated to the Middle/Late Bronze Age; several samples were from Neolithic levels and Late Bronze Age/Early Iron Age. Twenty-four of these samples contained low numbers of carbonised grain with emmer/spelt (*Triticum dicoccum/spelta*) and barley (*Hordeum* sp.) being the best represented species, common grains of the prehistoric period; a free-threshing wheat (*Triticum aestivum*) grain was found in one bronze age sample. Other cereal debris included single barley and wheat rachis fragments in just two samples while some of the charred weed seeds, e.g. *Rumex* sp., *Polygonum* sp., *Bromus* sp., *Galium* sp., present in small numbers together with some of the charred grain assemblages, may represent arable weeds. Legume fragments were found in two samples.

Waterlogged seeds were present in virtually all the samples, mainly in low to moderate quantities, and mainly representing arable/waste ground weeds and wetland plants. It is difficult to establish whether or not these seeds are intrusive although the presence of stem/root fragments in many of the deposits, particularly those close to the contemporary ground surface suggest that this may indeed be the case. Detailed archaeological information (including any other artefactual material) from these contexts may establish the possibility of intrusive material being present. However, 17 samples were assessed from organic deposits sampled from the base of pits/wells, of which seven were found to contain well-preserved plant material including rich seed assemblages. Three of these samples also contained sufficient beetle remains to merit further analysis.

The assessment has shown a low concentration and spread of charred plant remains across the site; these finds can provide information on the range of cereals used during the prehistoric period although the quantity of material so far recovered can provide little evidence on crop husbandry or processing activities. The waterlogged plant assemblages and insects from the base of pits and wells may provide information on the character of the local environment and possible evidence of human activities in the area of these features.

John A. Giorgi 13.6.96

APPENDIX 7 BUILDING MATERIAL ASSESSMENT

Amount Recorded: 4 shoe boxes
Amount Retained: 2 shoe boxes

1 Roman Ceramic Building Material

Contexts: 854, 1075, 1135, 1566, 1569, 1572, 1580, 1605, 1624.

There are a small number of fragments of roofing tile (tegula and imbrex) as well as a probable brick. All are made from the usual red coloured London area clays (fabric group 2815) and are probably of 1st to mid 2nd century date.

The roofing tiles indicate the presence of a Roman building with a tiled roof. The probable brick may perhaps have been used as a hearth.

2 Daub

Contexts: 981, 996, 1026, 1041, 1071, 1077, 1079, 1092, 1172, 1227, 1251, 1253, 1255, 1263, 1265 (A & B), 1267, 1278/1422, 1336, 1414, 1476, 1478, 1480/1481, 1482, 1496, 1500 (A & B), 1580, 1583, 1806, 1852, 1946, 1975, 1979, 1990, 2142, 2301, 2331, 2338, 2362, 2426, 2470, 2492.

Although daub was found in a large number of contexts the majority comprises very small abraded fragments. There are no impressions in the daub, although a few have a smoothed surface. It is therefore very difficult to be certain of there purpose or date. A number of pieces are, however partly light grey in colour indicating that they have been subject to heat.

One fragment from context 1336 is unusual in being flat and thin (20-23 mm). However, this may be an abraded tile rather than daub.

The daub may have formed part of a clay and timber building
from which the ceramic roof tiles, discussed above, derived. The burnt fragments could derived from some sort of oven structure.

3 Stone

Contexts: 632, 1018, 1022, 1092, 1172, 1287, 1297, 1400, 1414, 1580.

A number of fragments of sandstone were recovered, including a particular hard type known as quartzite. Some of these stones were in the form of broken water worn pebbles, whilst others had a flattened surface indicating use as quern stones. In is not certain whether any of the stones found derive from the structure of a building.

Ian M. Betts 13 June 1996

APPENDIX 8 CONSERVATION ASSESSMENT

Kirsten Suenson-Taylor

The following assessment of conservation needs for the accessioned and bulk finds from the excavations at Cranford Lane, encompasses the requirements for finds analysis, illustration, analytical conservation and long term curation. Work outlined in this document is needed to produce a stable archive in accordance with MAP2 and the Museum of London's Guidelines.

Recommendations for a conservation contribution to the final publication are also included.

INTRODUCTION

Conditions on site were predominately dry with shallow deposits overlying gravel beds. This resulted in poor preservation of the metal artefacts with poor surface condition of the copper alloys and spalling and delamination to the ironwork..

Conservation support at the time of the excavation was provided by conservators from the Museum of London Archaeology Service. Records of conservation carried out at the fieldwork stage are held in the conservation department of the Museum of London. Conservation of artefacts was carried out in the laboratory and conservators were also involved on site to give advice on the processing of artefacts, as well as carrying out lifting procedures for fragile finds.

CONSERVATION WORK CARRIED OUT TO DATE

Material	**No. Accessioned**	**No. Conserved**	**No. to be treated** (see below)
Copper alloy	38 (15 coins)	10 (10 coins)	2
Silver	1 (1 coin)	1 (1 coin)	
Lead	10	1	1
Iron	8		4
Glass	1		
Ceramics	1	1 (+2 unacc)	
Stone	2		
Other - Amber	1	1	
Other - "wooden trough"	unacc	1	1

ASSESSMENT OF CONSERVATION WORK OUTSTANDING.

The small finds were assessed by visual examination of both the objects and the X rays, closer examination where necessary was carried out using a binocular microscope at high magnification. The small finds were reviewed with reference to the small finds assessment (Cotton J.- Prehistoric material, and Wardle A- Roman and post Roman).

FINDS ANALYSIS
A number of items were identified for further investigation and analysis.

[595] <123> Iron tool. Investigate junctions of blade and handle. This item is in very poor condition and will need careful investigation and cleaning followed by active stabilisation. 2 days

[595] <29> Lead/iron collar weight. Investigative cleaning particularly of iron and stabilisation. 2 days

[595] <30>Iron fittings, spiked rings, chain, *etc.* Additional x raying, possible resultant conservation 1 day

[311/264] <10> Technological and investigative conservation of copper alloy. The metallurgy and composition of this item is of interest. The use of X ray florescence (XRF) and scanning electron microscope (sem) facilities and expertise at English Heritage Ancient Monuments Laboratory is recommended. 2 days

[+]<414>copper alloy strap end- clean to reveal decoration and stabilise 1 day

Total **8 days**

ILLUSTRATION
In addition some additional conservation may be needed on [595] <30> to prepare components for drawing. 0.5 day

STABILISATION FOR THE ARCHIVE.
In the case of the copper alloy, the poor condition of the surfaces and the general fragmentary nature of the archive means that active stabilisation is not recommended. Rather it is desirable that passive conservation continues and that all metal finds from this site are kept in desiccated storage. One iron object was identified as in need of active stabilisation.
[347] <1287> Iron object, poor condition, clean and stabilise 1 day
[2412] "Wooden trough" During the course of excavation organic remains were recovered from a well on site. Other artefacts found in association with the remains indicate a Bronze Age date. Upon careful excavation in the laboratory it became apparent that this was a soil mark left by the remains of a simple wooden trough. A silicon rubber mould of the remains were taken to record the shape and dimensions of the trough. Further work should be done to cast a "replica" of the bowl from the mould in a material suitable for retention in the site archive. 2 days

Total **3 days**

CONTRIBUTION TO THE PUBLICATION
This should include a summary of the investigative work and a record of laboratory work on unusual artefacts. 1 day

SYNOPSIS

Task	**Time Required**
Analysis and investigative work	8 days
Illustration	0.5 days
Stabilisation for the archive	3 days
Contribution to the publication	1 day
Total	**12.5 days**

ACKNOWLEDGEMENTS
Conservators who have worked on objects from these excavations are: Kirsten Suenson-Taylor, Heidi Lesur, Georgina Garrett

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English Heritage *Management of Archaeological Projects II*

APPENDIX 9 POLLEN ASSESSMENT

Robert G Scaife

Introduction

Excavation of the Bronze Age site at Cranford Lane afforded the opportunity to carry out pollen analysis of the prehistoric soils/sediments. This was considered important as until now there have been no previous soil pollen analyses of sites of this age in the London region. Such a study would allow comparison with the palynological database constructed from the palaeo-peat sequences of the Thames and its tributaries. Soil pollen analysis can provide a clearer view of the 'on-site' vegetation of the period in question without the masking effects of dominant wetland plants which constitute the make-up of peat accumulation. Thus, where prehistoric activity and especially agriculture was being practised, the palynological evidence may be evidenced more clearly than in typical organic accumulations.

Pollen Methodology

Box monolith samples were taken from the exposed archaeological sections 288 and 289[57] (Dr. K. Wilkinson). These were sub-sampled at 2cm contiguous intervals throughout the profile. Selected samples taken from diagnostic horizons have been prepared for pollen analysis.

Extraction procedures followed those outlined in Moore and Webb (1978) and Moore *et al*. (1991). Because all samples were inorganic, micro-mesh sieving (10u) was used to assist with removal of the clay fraction. Samples were decalcified with 10% HCL and deflocculated with 8% KOH. Coarse debris was removed through sieving at 150u and clay by micro-mesh (10u). Remaining silica was digested with 40% hydrofluoric acid. Erdtmans acetolysis was carried out for removal of cellulose and to re-inflate the pollen grains after HF treatment. The concentrated pollen and spores were stained with safranin and mounted in glycerol jelly. Pollen was identified and counted with an Olympus biological research microscope (with Leitz optics) with Phase contrast facility at magnifications of x400 and x1000. These extraction techniques were successful and pollen counts of 400 grains plus spores were made from all but one level. A preliminary pollen diagram has been constructed using Tilia graph and Tilia Plot in the Quaternary Environmental Change Research Centre of the Department of Geography, University of Southampton. Pollen is calculated as a percentage of total pollen and spores as a percentage of total pollen plus spores. Taxonomy follows that of Stace (1991) and Moore and Webb (1978).

The Pollen Data

Pollen was, in general, well preserved for mineral soil and a diverse range of taxa was recorded from the 8 levels/samples examined. Overall, herb pollen types predominate with only small numbers of tree and shrub pollen.

[57] Sub-groups 37 & 38, a Late Bronze Age well.

Tree Pollen: Arboreal and shrub pollen constitute less than 10% of total pollen except at 28-30 cm (15% TP). The principal types are *Quercus* (to 10%) with *Corylus avellana* type (6%). There are also sporadic occurrences of *Betula, Pinus Tilia* and *Alnus*. Occasional records of shrubs include *Cornus, Prunus* type and Ericales.

Herbs: Herb pollen percentages and taxonomic diversity are high, characterising the overall pollen assemblages/spectra. Poaceae are dominant with values to 60% of total pollen. Also important are cereal type, *Dianthus* type, *Chenopodium* type, *Polygonum aviculare* type and Lactucae. The former was identified by large diameter >45u but also with large pore annulus and thick exine displaying strong columellate structure. Well preserved grains appeared to be of *Hordeum/Triticum* type. These taxa are predominantly waste and arable ground types. Sporadic occurrences of other herbs similarly reflect this habitat with *Polygonum persicaria, Fallopia convolvulus, Plantago major* type (but may include *P. media* a grassland type) and various Asteraceae taxa (*Anthemis* type, *Bidens* type, *Artemisia, Cirsium* type).

Spores: *Pteridium aquilinum* is the most important spore type (to 20% TP+Spores). Also present are Monolete, *Dryopteris* types and *Polypodium vulgare*.

Inferred Vegetation

Stratigraphically, there is little change in the percentages of the dominant taxa and thus, no pollen zonation has been undertaken. This homogeneity of the pollen spectra may be due to rapid deposition, sediment/soil mixing or environmental stability spanning the period of soil/sediment accumulation. Detailed description of the stratigraphical sequence has been carried out by Dr. K. Wilkinson (Cotswold Archaeological Trust archival report) showing a variable sequence of iron stained clays, silts and sands with some possible stabilisation horizons (layer F at 21-22cm).

Given the nature of the depositional environment, it is likely that the majority of the pollen present derived from on and immediately adjacent to the site. It is clear that the environment at least locally was of open/non-wooded character. However, because of the likely dominance of local pollen, this may have statistically 'swamped' the representation of habitats from farther afield. Thus, the presence of *Quercus* and *Tilia* and *Corylus avellana* may be indicative of at least some local and/or regional woodland. The small number of *Tilia* grains is commensurate with the late Bronze Age and a post-lime decline date.

The dominance of herbs and particularly the numbers of cereal pollen grains and associated segetal taxa and weeds of waste ground is the most significant aspect of this pollen profile. Although cereal type pollen is present throughout, there appears to be a greater importance/concentration in the lowest levels of the profile which relates to the earliest stages of the site and the infilling of the ditch[58] from the surrounding area. The arable aspect of the spectra implies that cereals were being cultivated in close proximity to the site. However, it may also be considered that these pollen are derived from pollen trapped in the husks of cereals released during processing (Robinson and Hubbard 1977). This, however, similarly implies cereal cropping in the vicinity

[58] Actually a well.

Poaceae are dominant with very high percentages of total pollen throughout. Whilst these may be referable to grassland/pasture, it is also possible that the dominance reflects on-site growth in the prehistoric well. Other grassland components may include *Plantago lanceolata*, Lactucae/Liguliflorae (although this group may also include taxa of disturbed and waste ground such as for example, *Sonchus* spp.).

Summary and Conclusions
Pollen analysis of the Bronze Age soils at this site proved extremely successful in spite of the extreme minerogenic character of the soil/sediments. The data show a local environment (Bronze Age) with few if any trees in the vicinity although oak, lime and hazel may be indicated at some distance. There is, however, clear evidence for the importance of cereal cultivation especially in the basal levels of the profile. Pastoral activity is less easily discernible in pollen spectra and here, high values of Poaceae suggest local grassland since there are also other herbs present which are typical of pasture. However, these are subordinate to grasses and it must also be suggested/considered that we are here seeing elements of the flora growing 'on-site' during the evolution of this archaeological feature.

Additional pollen work could be carried out to examine further, the gaps in the pollen record associated with some of the stratigraphical boundaries recognised by Wilkinson (unpublished archival report of The Cotswold Archaeological Trust). It is suggested that the sampling intervals are closed down and the remaining 7 samples prepared and full counts are carried out on all fifteen samples. This would be followed by interpretations and the preparation of a publication text including pollen diagram. Additionally, it is recommended that samples from well b[59] (after Wilkinson) are included in the analytical programme. This is in order to look at pollen catchment from another area of the site, which may help to establish the intensity of cereal cultivation/processing in the area, and refine the detail of the background local vegetation. These samples have not been assessesed, however, preservation has been demonstrated to be good in well d[60] and this could be used to extrapolate preservation in this similar context. However, costing for preparation and initial scanning for presence has been made separately from costing for full counts and analysis. Therefore if no pollen is preserved then the costing for the analytical stage need not be given.

Costing

Preparation of additional 7 samples from well d (Sub-groups 56 & 57)	1 day
Analysis and plots of 15 (some work carried out during assessment) samples from well d	5 days
Preparation of publication text	5 days
Preparation and scanning of 16 samples from well b (Sub-groups 37 & 38)	3 days
Analysis and plots of 16 samples from well b	8 days
Preparation of publication text	5 days

N.B. These final 13 days are dependant upon pollen being present in the samples

Total 27days

[59] Sub-groups 37 & 38.
[60] Sub-groups 56 & 57.

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