

**Channel Tunnel Rail Link  
Union Railways (South) Limited**

**Project Area 430**

**LEDA COTTAGES  
ARC 430/83+200**

**WATCHING BRIEF  
POST-EXCAVATION ASSESSMENT REPORT  
  
FINAL**

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## LIST OF CONTENTS

1.	INTRODUCTION .....	1
1.1	Project Background.....	1
1.2	Geology and Topography.....	1
1.3	Archaeological and Historical Background .....	1
2.	ORIGINAL PRIORITIES, AIMS AND METHODOLOGY .....	3
2.1	Landscape Zone Priorities.....	3
2.2	Fieldwork Event Aims .....	3
2.3	Fieldwork Methodology.....	3
2.4	Summary of Excavation Results .....	4
2.5	Assessment Methodology .....	4
3.	FACTUAL DATA AND QUANTIFICATION.....	5
3.1	The Stratigraphic Record .....	5
3.2	The Artefactual Record .....	8
3.3	The Environmental Record .....	10
3.4	Archive Storage and Curation.....	10
4.	STATEMENT OF POTENTIAL .....	12
4.1	Stratigraphic Potential.....	12
4.2	Artefactual Potential .....	13
4.3	Environmental Potential.....	14
4.4	Dating Potential.....	14
4.5	Overall Potential .....	15
4.6	Updated Research Questions.....	18
5.	BIBLIOGRAPHY .....	21
	APPENDIX 1 - CERAMICS.....	23
1.1	Late Iron Age And Roman Pottery .....	23
1.2	Ceramic Building Materials and Fired Clay .....	27
	APPENDIX 2 - LITHICS.....	30
2.1	Flint.....	30
2.2	Humanly Modified and Unworked Stone .....	31
	APPENDIX 3 -GLASS .....	34
3.1	Glass.....	34
	APPENDIX 4 METALWORK .....	35
4.1	Metalwork .....	35
	APPENDIX 5 IRON SLAG .....	36
	APPENDIX 6 - ANIMAL BONE .....	40
6.1	Animal Bone .....	40
	APPENDIX 7 MACROSCOPIC PLANT REMAINS AND CHARCOAL .....	41

## LIST OF TABLES

Table 1: Leda Cottages: Fieldwork Events.....	1
Table 2: Record of the archive	

## **LIST OF SPECIALIST TABLES**

- Table 1.1: Quantification of all excavated pottery assemblages  
Table 1.2: Quantification of all sieved pottery assemblages  
Table 1.3: Summary of quantification of pottery assemblages by phase  
Table 1.4: Spot-dating of excavated key pottery assemblages  
Table 1.5: Spot dating of sieved key pottery assemblages  
Table 1.6: Quantification of ceramic building materials by count and weight  
Table 1.7: Probable/possible daub, by context  
Table 1.8: Quantification of fired clay by count and weight  
Table 1.9: Counts and weights of Roman tile by type  
Table 2.1: Summary composition of the flint assemblage by context  
Table 2.2: Quantification of burnt unworked flint  
Table 2.3: Quantification of worked stone by context  
Table 2.4: Fragments of Lava (probably from rotary querns)  
Table 2.5: Quantification of burnt unworked stone by context  
Table 2.6: Quantification of unworked stone (includes ironstone)  
Table 3.1: Quantification of glass by context  
Table 4.1: Quantification of metalwork by context  
Table 5.1: Quantification of iron slag by context (all weights are in g; all measurements in mm.)  
Table 6.1: Percentage of identified fragments by context, feature interpretation and period  
Table 7.1: Quantification of charred plant remains by context

## **LIST OF FIGURES**

- Figure 1: Site location  
Figure 2: Overall plan, showing extent of the archaeology.  
Figure 3: Interpretative plan of the main area showing occupation phases  
Figure 4: Iron smelting furnaces and associated features  
Figure 5: Furnace group 8300

## **LIST OF PLATES**

- Plate 1: Structure 8098  
Plate 2: Structure 8098

## SUMMARY

As part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL), the Oxford Archaeological Unit was commissioned by Union Railway (South) Limited to maintain a watching brief during soil stripping of land West of Leda Cottages (central chainage 83+200) within CTRL Project Area 430 between July and September 2001. Investigations prior to the construction programme had revealed no significant archaeology, thus the site was designated a General Watching Brief. The size of the construction site totalled 2.88 ha.

The watching brief revealed a sequence of activity dating from the Late Iron Age to *c.* AD 270. The preliminary phasing can be summarised as follows:

- Phase 0: Late Mesolithic/Early Neolithic/Bronze Age. A mixed assemblage of worked flint comprising material of Late Mesolithic/Early Neolithic and possible Bronze Age date, all redeposited in later contexts.
- Phase 1: Late Iron Age-Early Romano-British (150 BC-100 AD). Construction of a substantial rectilinear enclosure with two apparent entrances; two four-post structures, three pits and three postholes. Four lengths of ditches were located to the north-west of the enclosure. Evidence of iron smelting and secondary smithing, in the form of a collapsed iron smelting hearth was also situated in the enclosure. A second concentration of features at the base of the slope, close to the present-day stream comprised three furnaces, a pit filled with slag and charcoal, and a shallow cut feature with evidence of *in situ* burning. All furnaces produced very limited dating evidence and their attribution to this phase is very tentative.
- Phase 2: Late 1st-Late 2nd century. Continued use of the primary enclosure with probable backfilling of its ditches at some point during this phase. Construction of a second enclosure immediately to the north-west of the earlier one. A number of pits, some of them substantial, a flint-lined structure, a possible six-post structure, two parallel ditch segments at the north-west end of the second enclosure, and a furnace adjacent to the present-day stream.
- Phase 3: Late 2nd-Mid 3rd century. Continued use of the second enclosure, a clay and stone structure, several possible rubbish pits, a probable work area and a large waterhole.

A further four -post structure is undated. The site appears to have been abandoned *c.* AD 270.

The artefactual evidence, which included a number of pottery wasters, suggests that at least some of the pottery was produced on or near the site. However no corresponding feature was identified on site. At least two structures were judged to be potential kilns by their overall construction, but showed no evidence of firing. The evidence of on-site iron working is also of considerable significance and can be paralleled with a number of other CTRL sites such as Beechbrook Wood.

The key themes and ideas that have emerged as a result of the Fieldwork Events and the post-excavation assessment suggest that there is good potential to address most areas of research interest that were identified in the Fieldwork Event Aims and the Landscape Zone Priorities.

## 1. INTRODUCTION

### 1.1 Project Background

- 1.1.1 The Oxford Archaeological Unit was commissioned by Union Railways (South) Limited (URS) to maintain a Watching Brief during the top and subsoil stripping of an area west of Leda Cottages, within CTRL Project Area 430 between July and September 2001. Investigations prior to the construction programme had revealed no significant archaeology (URS 1998e, URS 2000b), thus the site was designated a Watching Brief. The watching brief covered an area measuring c. 240 m by 120 m (2.88 ha) centred on URS grid point 76580 27370 (OS NGR 596500 147450). The location of the site is shown on Figure 1. Figure 2 shows the extent of the Watching Brief and the principal archaeological features recorded.
- 1.1.2 The archaeological work was carried out according to a Written Scheme of Investigation (WSI) (URS 1999c) prepared by Rail Link Engineering (RLE), and agreed in consultation with English Heritage (EH) and Kent County Council (KCC) on behalf of the Local Planning Authorities.
- 1.1.3 The assessment considers the results of Fieldwork Event ARC 430/83+200 as summarised in Table 1. The results of previous investigations (eg. ARC LED98) have been reported on separately and are not incorporated into this assessment.

*Table 1: Leda Cottages: Fieldwork Events*

Fieldwork Event Name	Fieldwork Event Code	Contractor	Dates of Fieldwork
Leda Cottages	ARC 430/83+200/01	OAU	21/07/01 - 15/09/01

### 1.2 Geology and Topography

- 1.2.1 The site lies on the eastern edge of the Folkestone Beds, bordered to the east by Gault Clays. It was sealed by sandy silt soils.
- 1.2.2 The area of the watching brief lies between the existing A20 and the embankment of the Maidstone to Ashford railway line. The site slopes gently down from south-east to north-west with a stream forming the northern boundary of the site. The southern extent of the site is defined by a post-medieval sunken lane.
- 1.2.3 Prior to work on the CTRL the area of the site had been under arable cultivation.

### 1.3 Archaeological and Historical Background

- 1.3.1 The site to the west of Leda Cottages lies within an area where few previous archaeological remains have been identified. A scatter of worked flints had been collected during field walking over the site (URS 1994, Supplementary Fieldwork Report, Map 14a) but with no obvious concentrations. A single fragment of Roman tile (Map 14c), and a very small group of well distributed medieval pottery sherds (Map 14d) were also recovered.
- 1.3.2 Prior to the commencement of the CTRL construction, a series of evaluation trenches was excavated to the immediate west and south-east of the site. MOLAS excavated 18

trial trenches, at the back of Leda Cottages (ARC LED98) (URS 1998e), which produced a solitary post-medieval pit. MOLAS also excavated a further 23 evaluation trenches at Westwell Leacon (ARC WWL98) (URS 1998c) approximately 200 m to the east of the site. The latter produced a small number of undated linear features. Trial trenching, approximately 750 m to the south-east, at Tutt Hill (ARC TUT98) (URS 1998b), exposed post-medieval features in four of the nine evaluation trenches.

- 1.3.3 Since the commencement of the CTRL construction a number of sites have been identified in the vicinity as part of the archaeological watching brief.
- 1.3.4 Work west of Leacon Lane (ARC LLA98), roughly 1.5 km to the west of the site, chainage 81+800 to 82+000, produced a concentration of Late Neolithic/Early Bronze Age worked flint, seven undated pits, a probable Early Roman ditch and a cluster of Late Iron Age/Early Roman pits. East of Pluckley Road (chainage 81+200), two badly truncated Late Iron Age pits and possible kiln debris were recorded during the watching brief (ARC 430/99) (URS 2000b).
- 1.3.5 An isolated group of four Late Iron Age pits was excavated (Figure 2) to the rear of Leda Cottages (chainage 83+300 to 83+350), producing diagnostic ceramics from all the features. Watching briefs between the M20 and west of Westwell Lane, chainage 83+850 to 84+100, also produced a series of isolated Iron Age pits as well as a small spread of medieval pottery (URS 2000b).
- 1.3.6 East of Westwell Road (chainage 84+300 to 84+550), a Late Bronze Age pit was discovered during the excavation of a geotechnical test pit. An area of 40 m x 20 m around the feature was subsequently investigated, and revealed a small concentration of Late Bronze Age pits and gullies. Further evaluation of the area identified a number of Late Bronze Age /Iron Age pits (URS 1999a).
- 1.3.7 Further investigations were carried out in the area, both as part of General and Targeted Watching Briefs, and revealed further evidence of a Bronze Age date, including potential parts of a field system, a house gully, and a large number of tree throw holes (URS 2000b). A geophysical survey to the south-east of the area did not produce clear results.
- 1.3.8 Recent excavations on CTRL Contract 430 at Beechbrook Wood (URS 2002b), c. 3 km to the south of Leda Cottages, revealed extensive remains of a multi-period nature, suggesting that the site had seen continuous periods of use from the Late Mesolithic through to the Early Roman period. After c. AD 250 it experienced a hiatus until the post-medieval period.
- 1.3.9 Substantial evidence of late Iron Age and Roman occupation has been recovered elsewhere along the CTRL route, during both CTRL and unrelated works. Major CTRL excavations at Thurnam Villa in the Medway valley have revealed a continuous sequence of occupation from the late Iron Age to the late 4th or early 5th century AD (URS 2001b). The recently discovered Roman small town at Westhawk Farm, Ashford (Booth and Bingham 2001) lies roughly 7 km to the south-east of the present site. This settlement was situated near the junction of two important Roman roads, from the Weald to Canterbury and from Lympne to Maidstone. Important evidence for iron production and agricultural activity was recovered. Occupation of the excavated part of the settlement was confined almost entirely to the period c. AD 50-250, with only minimal evidence of late Roman activity.

## **2. ORIGINAL PRIORITIES, AIMS AND METHODOLOGY**

### **2.1 Landscape Zone Priorities**

2.1.1 The Landscape Zone Priorities set out in the WSI for all the watching briefs in CTRL Project Area 430 (URS 1998a) were to recover data to address the following issues:

- *Landscape Zone Priority 1.* A reconstruction of the changing paleo-environment for all time periods present, and the interaction with past economies, through ‘on site’ and off-site’ studies.
- *Landscape Zone Priority 2.* Establish the basis of the rural economy for the area for all time periods, but especially through the recovery of material and environmental remains.
- *Landscape Zone Priority 2.* Ritual and ceremonial use of the landscape

### **2.2 Fieldwork Event Aims**

2.2.1 A series of Fieldwork Event Aims were highlighted in the WSI to address the Landscape Zone Priorities (see Section 2.1 above). As the Watching Brief was carried out under the general Watching Brief WSI, the original Fieldwork Event Aims are generic in character:

- to record any significant archaeological structures, features or deposits
- to retrieve environmental and economic evidence and artefacts from those archaeological contexts, as well as any other artefacts disturbed during construction work.

### **2.3 Fieldwork Methodology**

2.3.1 Following the initial identification of features as part of the Watching Brief General, a Targeted Watching Brief methodology was implemented, where all relevant machine operations were continuously monitored. Stripping of both the topsoil and subsoils was carried out by the main contractor using two 360° excavators with toothless buckets, under the direct control of an archaeologist. Where archaeological features were exposed, they were excavated by hand and recorded.

2.3.2 All features were recorded using a single context recording system, were drawn in plan and section, and were photographed. An overall site plan was produced at a scale of 1:100 and more detailed segments of the site were planned at 1:50. Specific features were planned at 1:20 and 1:10 when greater level of details was required. Sections were drawn at 1:20 or 1:10. Surveying of the site and levelling was carried out using a Total Station Theodolite enabling CAD plans to be produced.

2.3.3 Archaeological remains, where encountered, were sampled in order to characterise the features and their relationship with one another, as well as the recovery of dating and environmental evidence. All Recording was undertaken to the specifications laid out in the WSI (URS 1999c) and the *OAU Field Manual* (Wilkinson 1992).

2.3.4 A daily record of all activities related to the watching brief was maintained.

## 2.4 Summary of Excavation Results

- 2.4.1 The earliest activity on site (Figure 3) was dated from the Late Iron Age to the Early Roman period. It was represented by the establishment of a rectilinear enclosure (ditches 8624, 8626, 8628) with two apparent entrances and later subdivided by a small gully (group 8629). One four-post structure (group 8403), possibly associated with the establishment of the rectilinear enclosure, was identified. It may have been replaced subsequently by another four-post structure (group 8402) possibly contemporary with the subdivision of the enclosure. These post structures could have been associated with cereal processing. Evidence for iron smelting activity was also tentatively attributed to this period, based on very limited evidence. One furnace (group 8300, Figure 5) was located within the main enclosure but the main cluster (Figure 4) associated with this activity was situated at the base of the slope, in close proximity to the present-day stream. It was composed of three furnaces (8011, 8014, 8021), one pit (8007) and one shallow cut feature showing evidence of *in situ* burning at its base (8019). It is not clear how long this second focus of activity was in use for, as dating evidence was very tenuous.
- 2.4.2 A second rectangular enclosure (groups 8625 and 8627) was dug possibly in the late 1st century, respecting the alignment of the earlier one, which was therefore probably still in use. Dating evidence suggests that the ditches forming the earlier enclosure were deliberately backfilled shortly afterwards. Pottery of 2nd-century date was found in a wide range of features, located both within and outside the second enclosure, including a number of pits (8573, 8525, 8488, 8531, 8321, 8116, 8062), a rectangular flint-lined structure (8142), a possible small six-post structure (group 8286) and two short ditch segments (8033 and 8039). Another possible four-post structure (8068, 8070, 8076, 8081) may have been associated with this phase. However, it did not produce any dating evidence.
- 2.4.3 The last phase of occupation, from the late 2nd century-AD 270, produced the largest assemblages of pottery. It was mostly represented by a series of discrete features including a rectangular clay and stone structure (8098), several possible rubbish pits (8037, 8150, 8153, 8494), a probable work area (8060) and a large waterhole (8282). The dating evidence suggests that the second enclosure was still in use during this period. None of the pottery from the site is likely to be later than *c.* AD 270.

## 2.5 Assessment Methodology

- 2.5.1 This assessment report was commissioned by URS following the specification for such reports produced RLE, as discussed with English Heritage and Kent County Council (URS 2000a). This specification follows national guidelines prepared by English Heritage and provides additional information regarding the level of detail required in the report and its format. The production of the assessment report was project managed by Stuart Foreman (Project Manager), and prepared by Mike Sims and Valerie Diez. Specialist work was undertaken by appropriately qualified in-house and external specialists. All material was assessed because the quantities of artefactual and environmental material were relatively small.



### 3. FACTUAL DATA AND QUANTIFICATION

#### 3.1 The Stratigraphic Record

##### *Paper and Digital Archive*

- 3.1.1 A total of 636 context records, 147 section drawings and 37 plans were produced during the Fieldwork Event.
- 3.1.2 Datasets of the records and files have been compiled although it is expected that the dataset will require further development, when the requirements of the analysis are known. The updated archive index is listed in Table 2, which appears in section 3.6 below.

##### *Stratigraphy*

- 3.1.3 The main features recorded during the watching brief (Figure 3) comprise a large number of linear ditches and gullies, pits, postholes either in groups or isolated, discrete areas of industrial activity and stakeholes. There are also a number of tree-throw holes and other natural hollows. Most of the man-made features are isolated and the general absence of physical relationships does not allow them to be placed in stratigraphic sequences. Stratigraphy was therefore of very limited use in phasing and dating the features on the site.

##### *Phasing*

- 3.1.4 In the absence of stratigraphic relationships most features were dated by artefactual evidence. The fairly large amounts of pottery provide the main support for the dating and sequencing of features and aid in the association and characterisation of features within the same phase. The earliest activity on site is represented by approximately 12% of the pottery assemblage and has been dated to the Late Iron Age/Early Roman period.
- 3.1.5 Just under half the features (46%) contained any pottery. However, many of the undated features can be dismissed as natural hollows or disturbances. When present, the quantity of pottery was sufficient to provide a reasonable degree of confidence in the dating of the features.
- 3.1.6 Three main phases have been defined on the basis of the ceramic evidence. The dating sequence suggests that these three phases represent a continuous period of occupation until the abandonment of the site *c.* AD 270.

##### *Phase 0: Late Mesolithic/Early Neolithic/Bronze Age*

- 3.1.7 Although a sizeable number of worked flints were recovered dating from the Mesolithic to Bronze Age they occurred as residual finds within later fills.

##### *Phase 1 : Late Iron Age/Early Roman (150 BC-100 AD)*

- 3.1.8 The earliest activity on site was represented by a number of substantial ditches which formed a large rectilinear enclosure with two apparent entrances. Evidence indicative of iron working was also recovered.
- 3.1.9 The main enclosure was composed of three ditch groups (8624, 8626 and 8628) , forming three sides of a roughly north-south - east-west aligned rectangle, measuring *c.*

58 m north-south by 56 m east-west. The southern extent of this enclosure has been truncated by later cultivation. These ditches appeared to be substantial, with a V-shaped profile and evidence for at least one period of recutting or cleaning. The enclosure was later subdivided by a smaller discontinuous gully, group 8629, comprising three segments: a 7 m section running north-south, a 7 m north-south section turning at a right angle and running westwards for 18.5 m, and an 11 m section on the same alignment. Group 8629 appears to be truncated by a possible four-post structure (group 8403). Also none of the postholes produced any dating evidence, its location and stratigraphic relationship with 8629 suggest it may have been built shortly after the main enclosure was established but previously to the construction of partition ditch 8629. Another four-post structure, group 8402 was located within the area defined by ditch 8629 on the east. Group 8402 appears to respect the corner of ditch 8629, which suggests the two are contemporary. This second post-holes structure could represent a replacement for group 8403. Both four post structures measure approximately 2.5 x 2m and both produced good cereal assemblages suggesting a similarity in their function, linked to agricultural activities on site. These structures are commonly interpreted as granaries, and this interpretation seems to be reinforced by the environmental evidence. Further features dated from the Late Iron Age-Early Roman period and located within the main enclosure included three pits, three postholes and two tree-throw holes.

- 3.1.10 Evidence for iron smelting and secondary smithing has also been associated with this phase. Group 8300 was located just within the enclosure's eastern ditch. It was a collapsed iron smelting hearth, measuring 1.3 m in diameter, showing evidence of *in situ* burning and containing a large quantity of iron slag and fragments of fired clay (Figure 5). A separate concentration of hearths and associated features (Figure 4) was situated at the base of the slope, in close proximity to the present-day stream. This cluster of activity comprised three furnaces (8011, 8014, 8021) containing iron smelting debris, one pit (8007) filled with slag and charcoal, and one further possible associated feature, a shallow cut feature with evidence of *in situ* burning at its base (8019). The location of these features was possibly associated with the nearby water supply. The dating evidence is fairly slight: furnaces 8021, 8300 and feature 8019 all contained one sherd each of Late Iron Age-Early Roman pottery; pit 8007 contained two sherds of the same date. The degree of abrasion of these sherds may inform potential residuality and will need further examination at the analysis stage.
- 3.1.11 Two outlying ditches (8040) and (8108) to the north of the enclosure were part of this phase both following the same east-west, north-south alignment. However, their function and full extent could not be determined. Two short truncated length of ditches/gullies (groups 8630 and 8631), both slightly curving from south to the north-east might have been related to the two previous outlying ditches, possibly forming a smaller enclosure.
- 3.1.12 This complex probably represents a small farmstead with episodic (seasonal?) iron smelting activity.

*Phase 2: Late 1st-late 2nd century*

- 3.1.13 During this period a second rectangular enclosure was constructed to the north of the earlier enclosure, measuring approximately 77 m east-west by 49 m north-south. This enclosure comprised three ditches (groups 8552, 8625 and 8627) which form the western and southern boundaries of the enclosure, the northern and western extents have been destroyed by later ploughing and the construction of the A20. The south-east

- 3.1.14 Late 1st- to 2nd-century pottery was recovered from a number of outlying pits of indeterminate function, including a substantial pit (8573) at the south-western entrance to the primary enclosure, which may suggest that this enclosure had fallen into disuse, or had been backfilled by this time. The presence of the lower stone of a rotary quern from pit 8573 may indicate continuity of agricultural activities.
- 3.1.15 A rectangular flint-lined structure (8136) was identified in the south-eastern portion of the enclosure. This feature measured 2.32 x 1.98 m and at least two phases of rebuilding/construction were identified. The earliest pottery is dated 150 BC-AD 100 so construction in phase 1 is possible; it was clearly in use throughout phase 2 and possibly into phase 3. The interpretation of this feature remains problematic and no artefactual or environmental evidence provided any indication of its function.
- 3.1.16 Group 8286, comprising six postholes and one stake hole, was identified in the south of the new enclosure. The pottery suggests a date within the 2nd century. This rectangular structure measured approximately 4.5 x 2.5 m. This feature could be a small temporary shack or an animal pen. Its function however, remains uncertain, as no artefactual, environmental or stratigraphic evidence gave any indication of its use. Group 8286 is overlain by layer 8060.
- 3.1.17 Two parallel ditch segments (8033 and 8039), aligned east-west were located to the north of the site and contained 2nd-century pottery. They could possibly represent internal divisions within the later enclosure or a series of field boundaries associated with the earlier enclosure.
- 3.1.18 Small-scale iron smelting activity possibly still occurred during this phase in the cluster of furnaces located at the base of the slope, next to the present-day stream. Furnace 8018 truncated hearth 8021 which was dated to phase 1. The top fill of 8018 also contained pottery dated between 170-250 AD, associated possibly with its final use or with its backfilling. Furnace pit 8021 was also recut, though the fills of the recut did not produce any dating evidence.

*Phase 3 :Late Second to Mid Third Century*

- 3.1.19 This later phase of occupation on site was mostly represented by a series of discrete features. The pottery dating, does not suggest an obvious break between phases 2 and 3 but rather, continuous occupation.
- 3.1.20 Some 3rd-century pottery occurred within the primary fills of ditch group 8625. Also, some evidence of recutting and possible cleaning have been observed within many of the sections across these ditches. These elements suggest that the second enclosure was still in use during phase 3.
- 3.1.21 Features dated to this phase included a substantial clay and stone structure (8098) within a rectangular pit (8100), several possible rubbish pits (8037, 8150 and 8153), probable work area (8060) and a large waterhole (8282). A large tree-throw hole was utilised during this phase as a rubbish pit (8494).

- 3.1.22 The rectangular structure 8098 (Plates 1-2) had a number of features in common with structure 8142 (fill of 8136) and was located next to it. Although the two present morphological similarities, a main difference lies in the presence of clay lining within structure 8098. Similar clay-lined pits, interpreted as dyeing or tanning vats, have recently been identified in a craft zone at Springhead (pers. comm. Brigitte Buss). The absence of clay lining within rectangular pit 8136 suggests that the two features may not have been utilised for the same purpose.
- 3.1.23 Environmental samples have revealed the presence of grains and chaff in the fills of both pits 8100 and 8136, not in sufficient quantity however to have any significance. They are likely to represent re-deposited material.
- 3.1.24 Three large fragments of rotary querns were retrieved from pits 8494 and 8100, suggesting an agricultural element among the activities performed on the site.

#### *Undated features*

- 3.1.25 A four-post structure (8068, 8070, 8076, 8081), measuring approximately 2.5 x 2.5 m, was located adjacent to flint-lined structure 8142. The postholes of this group did not produce any dating evidence but their spatial arrangement suggests that this feature could possibly be associated with structure 8142. They were all cut by later postholes which possibly represent repair. These later postholes did not produce any dating evidence
- 3.1.26 There was a substantial overlap between phases of enclosure activity and many features appear to have been in use during at least two phases if not all three.
- 3.1.27 None of the pottery from the site is likely to be later than *c.* AD 270 which suggests abandonment of the site around this time.

#### *Truncation*

- 3.1.28 The site has been truncated to a varying degree, ranging from only slight truncation over the area of the earlier enclosure graduating from moderate to severe/complete truncation over the slope northwards down towards the present-day stream. At the base of the slope the earlier hearths (8011, 8014, 8019 and 8021) were preserved by later hillwash /colluvium deposits.
- 3.1.29 The absence of features to the east of the enclosures appears to be genuine, since this area was sealed by a layer of colluvium.

#### *Residuality*

- 3.1.30 The reasonably large numbers of sherds found in some of the features means that residual finds could easily be identified. All worked flints ranging from Late Mesolithic to the Bronze Age in date were residual in later contexts. Pottery of one or more phases was present in many features.

### **3.2 The Artefactual Record**

#### *Late Iron Age and Roman pottery (Appendix 1.1)*

- 3.2.1 A total of 1982 sherds (2087 g) of Late Iron Age and Roman date were recovered from 115 contexts: a further 281 sherds (1542 g) were retrieved from 14 of these contexts and 7 others during environmental processing. The pottery data suggest fairly limited

occupation during the Late Iron Age and the period *c.* AD 50-150, followed by a great increase in activity during the period *c.* AD 150-270. There are no indications of activity after AD 270 apart from a possible medieval sherd.

- 3.2.2 The small amounts of Late Iron Age pottery came mainly from the ditches forming the earliest enclosure (129 sherds). Only five assemblages, from discrete features, can be attributed exclusively to the period *c.* AD 50-100 and all are relatively small.
- 3.2.3 There are considerably larger quantities of material from 2nd-century features and from those containing a mixture of late 1st- and 2nd-century pottery. The late 2nd to early 3rd century is represented by large assemblages of pottery when the focus of activity moved to the south-east corner of a new ditched enclosure. The various pits in the south-east corner of the later enclosure also produced significant quantities of pottery dated *c.* AD 150-270.

*Ceramic Building Material and Fired Clay (Appendix 1.2)*

- 3.2.4 A small quantity of ceramic building material (1.2 kg), together with a larger quantity of fired clay (15.8 g) was recovered. Most of the ceramic building material is of Roman date, although one fragment of medieval or post-medieval roof tile is also present. Some of the fired clay is associated with iron smelting. Some appears to be from wattle-and-daub structures.

*Flint (Appendix 2.1)*

- 3.2.5 A total of 83 pieces of worked and 245 pieces of burnt flint (2270 g) was recovered. This material was entirely redeposited within later contexts. No diagnostic retouched forms were recovered, however distinctive technological traits indicated the presence of a small number of Late Mesolithic/Early Neolithic flints and possible Bronze Age flint working.

*Humanly Modified and Unworked Stone (Appendix 2.2)*

- 3.2.6 Approximately 300 fragments of stone were recovered, 10 of which were worked. Five of these were fragments of rotary querns (a mixture of Hertfordshire Puddingstone, Green Sandstone, Lava and an unidentified coarse gritty sandstone). Additionally, there was a possible tessera, two possible building blocks and a sling shot. The worked stone was found largely in the fill of pits and ditches which are largely dated to phase 2. The majority of the unworked stone is local ragstone (Green Sandstone). The weathered appearance of this stone suggests that it had been gathered locally probably by surface collection.

*Glass (Appendix 3.1)*

- 3.2.7 A total of 8 small fragments of undiagnostic green-blue fragments of vessel glass were recovered from the fill of tree-throw hole 8283.

*Metalwork (Appendix 4.1)*

- 3.2.8 A total of 5 iron items were recovered. These comprised 3 complete nails from fill 8037 of 8036, and 2 nail heads from fill of pit 8097 which was associated with structure 8098.

*Slag (Appendix 5.1)*

- 3.2.9 A large assemblage (c. 171 kg) of iron slag and related material was recovered. Most was generated by iron smelting and secondary smithing, but with very little evidence for primary smithing of blooms. The smelting evidence consisted of furnace bottoms - a slag type common in the Iron Age which continued into the Roman period - and tap slag - the result of a furnace innovation introduced at about the time of the Roman conquest. Also present were broken pieces of slag very similar to a type (slag pit blocks) hitherto associated with pre-Roman Continental Northern Europe and with the early Anglo-Saxon period in England.

**3.3 The Environmental Record***Animal Bone (Appendix 6.1)*

- 3.3.1 A total of 315 fragments of bone were recovered by hand. Almost all of the bone was very fragmented and re-assembly of the pieces reduced the fragment count to 152. A further 3 fragment of bone were retrieved during environmental processing. The bone was in very poor condition: only two cattle teeth fragments were sufficiently well preserved to allow positive identification. The poor condition of the bone can be attributed to the acidic nature of the soil with the majority of the surviving elements being teeth and burnt bones

*Macroscopic Plant Remains and Charcoal (Appendix 6.1)*

- 3.3.2 A total of 61 samples of Late Iron Age and Roman date were submitted for assessment, of which 41 produced seeds and/or chaff and 51 produced charcoal. Overall, the cereal species were dominated by *Triticum spelta* with occasional *Hordeum vulgare* (barley) and *Avena* sp. (oats). In addition to the cereal remains, weed seeds were present in 24 samples, generally in small quantities and two samples produced occasional large legumes recorded as *Vicia/Pisum* sp. (vetch/bean/pea). The large deposits of cereal grain and chaff and the consistency of the presence of *Triticum spelta* across the site suggest that cereal processing activities were taking place.
- 3.3.3 The two furnace samples and hearth associated feature 8019 (fill 8020, sample <805>) produced frequent or abundant charcoal with no seeds or chaff. It is reasonable to assume that the charcoal derived from fuel for the furnaces. Charcoal from the hearths may also represent fuel although these deposits were quite mixed and may represent redeposited material.

**3.4 Archive Storage and Curation**

- 3.4.1 All items and records from the Fieldwork Event that forms the subject of this assessment report are listed in Table 2, below.

*Table 2: Record of the archive*

Item	Number of Items or boxes or other	Number of fragments or litres	Condition (No. of items) (W=washed; UW=unwashed; M=marked; P=processed; UP=unprocessed; D=digitised; I=indexed)
Context records	636		I
A1 plans	4		I, D
A4 plans	33		-
A4 sections	147		I

Small finds	16		W, M
Films (monochrome)	15		I
Films (colour)	14		I
Flint, worked and unworked	3 size 3	470	W, M
Pottery	3 size 1 1 size 2 2 x Natural History Museum skull box	2247	W, M
Fired Clay	2 size 2 1 size 3	1046	W, M
CBM	1 size 2	74	W, M
Metalwork/Iron	1 plastic size 4	5	W, M
Animal Bone	1 size 4	318	W, M
Glass (Vessel)	1 size 4	8	W, M
Stone	1 size 2 1 size 3 1 x Ashmolean 3 x Unboxed	351	W, M
Slag	29 size 2 5 x Unboxed	6036	P
Mortar	1 size 4	13	P
Soil samples (bulk)	66	146	P

\* flot size

Key to box sizes

Cardboard boxes

Size 2 = Half box	391 mm x 238 mm x 100 mm	0.01 m <sup>3</sup>
Size 3 = Quarter box	386 mm x 108 mm x 100 mm	0.004 m <sup>3</sup>
Size 4 = Eighth box	213 mm x 102 mm x 80 mm	0.002 m <sup>3</sup>

Plastic boxes

Size 4 = Small	213 mm x 102 mm x 80 mm	0.002 m <sup>3</sup>
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## 4. STATEMENT OF POTENTIAL

### 4.1 Stratigraphic Potential

- 4.1.1 The Landscape Zone Priorities and Fieldwork Event Aims for the area Leda Cottages are set out in Section 2 of this report, above. The present section reviews the success of the Fieldwork Events and post-excavation assessment in providing stratigraphic data to address these aims and priorities so far, and their potential to support further analysis related to these aims.
- 4.1.2 The Landscape Zone Priorities for CTRL Project Area 430 (URS 1998a) focused on the reconstruction of the changing palaeo-environment and establishing the basis of the rural economy for the area for all time periods. The ritual and ceremonial use of the landscape also represent a research aim for Project Area 430. The Fieldwork Event Aims for Leda Cottages comprised the recording of features and deposits uncovered during construction, including the retrieval of environmental and economic indicators. Where feasible, the fieldwork was to be orientated towards addressing the aims of the CTRL Research Strategy at Landscape Zone Level.
- 4.1.3 The main stratigraphic potential for the site lies in providing evidence for the continuous use of the site for small-scale industrial production and domestic/agricultural activity during the Late Iron Age through to the mid Romano-British period. The site has particular potential for addressing a number of aspects of the CTRL research strategy for the period 'Towns and their rural landscapes', sub-period (i) 100 BC - 410 AD.

*Area 430 Landscape Zone Priority 1: the reconstruction of the changing palaeo-environment for all time periods present, and the interaction with past economies through 'on-site' and 'off-site' studies.*

- 4.1.4 No stratigraphic evidence relating to communities prior to the late Iron Age was recovered at Leda Cottages and there is therefore no potential for the reconstruction of palaeo-environmental change through time. Area 430 Landscape Zone Priority 2: Establishing the basis of the rural economy for the area for all time periods, but especially through the recovery of material and environmental remains.
- 4.1.5 Leda Cottages has produced evidence for part of what is likely to have been a rural settlement of Late Iron Age-3rd century AD date. The dating of the pottery has revealed what seems to be a continuous sequence of occupation. Various discoveries related to this period have been made in the vicinity during the works for the CTRL. The Late Iron Age-early Roman period seems to be especially well represented and thus the site has the potential to provide information relating to the Late Iron Age/Early Roman transition as well as further development up to the 3rd century.
- 4.1.6 The stratigraphy of the site alone was insufficient to establish the sequence of occupation as most features were isolated. However, there were two exceptions: ditch group 8627 cut ditch group 8630 and waterhole 8282 truncated ditch 8108. Problems caused by truncation have already been referred to. However, the limited stratigraphic data, in conjunction with the finds and environmental data are sufficient to support more detailed analysis of the types of structure present on the site and the sequence and chronology of site development. This should allow a more detailed characterisation of the nature of this settlement and its economic base.



*Area 430 Landscape Zone priority 3: Ritual and ceremonial use of the landscape.*

- 4.1.7 Leda Cottages presents no evidence related to ritual or ceremonial use of the landscape. No burial or ritual deposits have been identified on site. It should be kept in mind, however, that the bone preservation was very poor due to the acidity of the soil, as shown by the animal bone assessment (Appendix 6). Therefore there is no potential to address this research aim.

## **4.2 Artefactual Potential**

### *The Pottery (Appendix 1.1)*

- 4.2.1 The relatively large groups of pottery cover a small but significant date range and will contribute greatly to the dating of the site and to the understanding of the local, and in some cases the regional ceramic sequence.
- 4.2.2 The 'Belgic' Late Iron Age and Roman material comes from a variety of features and has the potential to provide information on the changing pattern of pottery supply to the site. That potential is somewhat limited in regard to the Late Iron Age pottery and earlier Roman pottery of the period c. AD. 43-150 because of the small sizes of the assemblages.
- 4.2.3 The largest and most significant pottery assemblages come from the industrial area (ie the south-eastern portion of the later enclosure with the exception of 8537) and date to the period c. AD 150-270. There is evidence for limited local pottery production: many fragments appear to be wasters and poorly fired pots in a previously unknown local fabric. Some of these pots may also have been used as packaging as indicated by the presence of resin on the necks and rims of two jars. An intensive study of this material should contribute significantly to our knowledge of the economy of the site, and possibly the distribution of its products.

### *Ceramic Building Material and Fired Clay (Appendix 1.2)*

- 4.2.4 The potential of the small quantity of ceramic building material is probably limited to providing information on the distribution of Roman tile fabrics in Kent. Some of the fired clay may provide information on iron smelting techniques. The possible daub can contribute only minimally, if at all, to our understanding of building techniques.

### *Flint (Appendix 2.1)*

- 4.2.5 The assemblage has little potential for further work, due to its limited size, apparently mixed date (late Mesolithic/Early Neolithic to Bronze Age) and residuality of the material.

### *Humanly Modified and Unworked Stone (Appendix 2.2)*

- 4.2.6 The potential of this small assemblage lies in the broad variety of raw materials used to make the objects. Understanding the supply of querns and other stone items can contribute to our understanding of the economics of the site and patterns of contact and trade. To achieve this a detailed typological and lithological description of the querns and other artefacts is required.

### *Glass (Appendix 3.1)*

- 4.2.7 This assemblage presents no potential for further work due to its very small size.

*Metalwork (Appendix 4.1)*

- 4.2.8 The metalwork assemblage has no potential for further work.

*Iron Slag (Appendix 5.1)*

- 4.2.9 There is great potential for further work on the slag, especially in view of the types which appear to be present. In addition to full publication, there is a possibility that the Leda Cottages slag could be included in a wider research programme of metallographic analysis at the Centre for Archaeology, English Heritage.
- 4.2.10 The possible ores in context [8020] require examination by a geologist to determine whether they are iron ores and, if so, to determine their source.

**4.3 Environmental Potential***Animal Bone (Appendix 5.1)*

- 4.3.1 In light of the small number of identified fragments and poor preservation due to the acidic nature of the soil, it is clear that the assemblage is unlikely to provide useful information regarding animal husbandry practices, status and typical diet of the inhabitants of the site. Therefore, this assemblage offers no potential for further analysis.

*Macroscopic Plant Remains and Charcoal (Appendix 6.1)*

- 4.3.2 It is recommended that five samples which produced over 50 items of grains and/or chaff and two very rich cereal deposits undergo full analysis as they can contribute to our understanding of the local landscape. It is important to establish why some sites produce abundant evidence for cereal production or processing and others do not and to attempt to establish why some sites were utilising emmer wheat and spelt wheat and others just spelt. The data from individual sites, such as Leda Cottages, form critical components of the broader landscape study in terms of their agricultural relationships.
- 4.3.3 Any analysis of the charcoal from the majority of features is likely to be of limited use. The industrial features on the site may reflect deliberate collection and use of specific wood taxa, however, perhaps with taxa selected for their particular burning qualities, temperature ranges and so on. It is therefore recommended that the charcoal from the two furnace samples, the furnace associated feature (8019) and four or five hearth samples be examined more closely.

**4.4 Dating Potential**

- 4.4.1 The ceramics recovered on site provided sufficient secure dating for most of the site. Although three phases were identified, all dated features belonged to the Roman period. Scientific dating is therefore very unlikely to improve the phasing of the site and does not present significant potential.
- 4.4.2 The cluster of furnaces located near the present day stream appear as the only features worth considering for scientific dating due to their distance from the main site, the paucity of ceramic dating and their potential for addressing some research aims. The relevance of radiocarbon dating should therefore be considered during the course of the post-excavation depending upon the results of further analysis.

## 4.5 Overall Potential

- 4.5.1 The site offers good potential to address some of the research aims identified for the Wealden Greensand Landscape Zone and, in particular, those concerned with Towns and their Rural Landscapes, Sub-period (i) c.100 BC-AD 410, as defined in the CTRL Research Strategy. Important comparisons can be made with other contemporary CTRL sites in the Wealden Greensand Landscape Zone such as Beechbrook Wood (URS 2000b) and non-CTRL sites such as Westhawk Farm (Booth and Bingham, 2001). There is evidence for continued activity over a period of at least three centuries, including evidence of occupation and probable agricultural activities for the majority of this period. The evidence for small-scale industrial activity during this period suggests that it forms part of an organised trading network, probably local, but also possibly regional in scale.

### *Hunter-foragers (400,000 - 4500 BC) into Early Agriculturists (4500-2000 BC)*

- 4.5.2 A small assemblage of worked flint recovered from Leda Cottages is mostly of Bronze Age date with a few pieces of Mesolithic/Early Neolithic date. No features of these periods were found, and much of the flint was redeposited in the Late Iron Age and Roman features. Although there is no potential for further work on this assemblage, the material is indicative of activity in both research periods and should therefore be considered within wider Landscape Zone studies.
- 4.5.3 The paucity of Mesolithic sites in Kent increases the importance of these finds as indicative of the location of hunter-forager activity. A single feature of Mesolithic date containing a significant worked flint assemblage was revealed at Beechbrook Wood.

### *Farming Communities (2000-100 BC)*

- 4.5.4 The Bronze Age flintwork is mainly composed of indistinct flakes and therefore has no potential for further work. However the presence of cores, chips and irregular waste indicate that some knapping has occurred on or around the site. This is the only evidence of activity related to this period. Although Leda Cottages can add nothing to our understanding of the Bronze Age landscape, the lack of evidence should be taken into account with regard to period across the region, since its absence stands in stark contrast to the considerable evidence from the period at nearby sites such as Tutt Hill and Beechbrook Wood. A Bronze Age field system was revealed at Beechbrook Wood and more tentative evidence was found at Tutt Hill, along with Late Bronze Age pits, gullies and ring ditches.
- 4.5.5 There is also a significant lack of evidence of early to middle Iron Age activity in this area, with the discovery of only one pit and two cremations of Middle Iron Age date (East of Newlands). The main exception is Beechbrook Wood which revealed a double-ditched enclosure with cremated human remains and an extensive ceramic assemblage. Leda Cottages conforms therefore to the pattern observed on most neighbouring sites. It should be taken into consideration in any synthetic overview of the spatial distribution of occupation at this time.

### *Towns and their Rural Landscapes; Late Iron Age-Romano British (100 BC - 410 AD)*

#### Late Iron Age-Early Roman

- 4.5.6 Evidence for Late Iron Age and Early Roman occupation includes a large rectilinear enclosure, together with associated ditches, gullies and two four-post structures, possibly granaries, suggesting a probable agricultural settlement. Several iron smelting hearths are also dated to this period. The dating evidence suggests that the enclosure was established in the Late Iron Age; the other features might be contemporary or slightly later.
- 4.5.7 At an intra-site level, Leda Cottages has some potential for study of the Late Iron Age/Early Romano-British transitional period. However, this potential is limited by the small quantity of pottery recovered dating to this period. The main potential of the site therefore lies in its group value. It contributes data which adds to our understanding of how the rural landscape was organised in the Late Iron Age and Early Roman period, when considered in conjunction with other sites in the area. The excavation at the CTRL site of Beechbrook Wood, c. 3 km to the south-east, revealed valuable evidence for the nature of Late Iron Age settlements in the area and also for the transition into the Roman period. Other scattered evidence for Late Iron Age and Early Roman activity was uncovered near East of Pluckley Road, at Leacon Lane and Lodge Wood (URS 2000b). Further along the route of the CTRL east of Ashford, other comparisons include the sites of Boys Hall Balancing Pond, Little Stock Farm and Bower Road.
- 4.5.8 Following the Roman conquest, there appears to have been little immediate change in land use at Leda Cottages. The Late Iron Age enclosure and related activities seem to have persisted through the 1st century AD with little apparent change. However, further analysis should help to refine the dating sequence and could possibly establish more precisely changes which occurred after c. 50 AD. The potential of the Leda Cottages site also lies in its wider analysis, along with other sites in the area. This landscape unit shows evidence for both continuity and possibly significant change relating to the effect of the Roman conquest and change in landscape organisation over time. This will directly address CTRL research priorities for the period as stated below in Updated Research Aim 4.

#### Roman

- 4.5.9 In the late 1st-2nd century, a second rectilinear enclosure was constructed immediately to the north of the earlier one, leaving a possible trackway between the two. Although this may indicate a period of expansion for the activities undertaken on the site, the earlier enclosure appears to have been deliberately backfilled shortly after the commencement of phase 2. The increase in quantity of pottery also seems to suggest an expansion in activities for this period. Despite the construction of a new enclosure, there is no definitive evidence of change in the nature of activity. The focus of activity, now located in the south-east corner of the new enclosure, was possibly of an agricultural nature with an industrial element. Environmental evidence and the discovery of rotary quern fragments seem to suggest agricultural activities were still possibly taking place. The focus of activity remains unchanged during phase 3 and a continuous occupation, up to the abandonment of this part of the site around c. AD 270, appears likely.
- 4.5.10 The precise nature and date of the iron smelting activity associated with the cluster of furnaces located at the base of the slope, next to the present-day stream remains unclear. Dating evidence suggests this activity took place probably during phase 1 and continued into phase 2, and possibly phase 3. However, this evidence is inconclusive as few sherds of pottery were recovered during excavation. Stratigraphic evidence suggests at least two phases of activity. Further analysis of these structures, in conjunction with an

in-depth study of the iron slag should allow for a better understanding of the functioning of the furnaces and the type of iron smelting and smithing practised on site. Analysis of maps could help identifying if the present day stream corresponded to an ancient watercourse, which could explain the location of this activity area away from the settlement.

- 4.5.11 At an intra-site level, there is considerable potential for further analysis of the nature of this settlement, to address CTRL research priorities relating to the organisation and function of settlements at this time. Stratigraphic data and pottery evidence should allow further refinement of the sequence and chronology of occupation, and the stratigraphic, finds and environmental evidence should be adequate to achieve a more detailed understanding of the nature of the site and its economic base. An in-depth analysis of some of the features, such as structures 8098 and 8142, should allow a better understanding of their function and of the nature of the activities performed on site. The pottery and worked stone assemblages offer some potential to contribute to our understanding of trading networks in the area. The identification of locally produced pottery and comparisons of the ceramic fabrics from other sites in the vicinity, in conjunction with residue analysis to determine how vessels were used as packaging and the nature of their content, could contribute significantly to the understanding of the economic pattern in the area as well as to the status of the site at Leda Cottages.
- 4.5.12 At an inter-site level, Leda Cottages has considerable group value for studying change in the landscape and in the organisation of settlement in the immediate area during the late Iron Age and the Roman period up to the 3rd century. On the basis of the current assessment, it appears that a new farmstead was laid out in the Late Iron Age, in the periphery of Leda Cottages, in an area where no earlier occupation could be traced. During the same period, two foci of occupation with evidence of both agricultural activities and metallurgical practices and trade, were identified on the site at Beechbrook Wood. The other evidence in the area comprises only scattered remains of Late Iron Age and Early Roman pits which probably represent off-site activity. All activity appears to have ceased *c.* AD 250 for the site of Beechbrook Wood and no later than *c.* AD 270 for Leda Cottages. The nearby small town of Westhawk Farm has also revealed a very reduced level of activity after AD 250. This abandonment gives an impression of significant dislocation of settlement in the area. It would be of value to compare the chronology of these sites with other CTRL sites which have revealed occupation during the late Roman period, such as Thurnham and Bower Road, and to establish if there is any distinguishable pattern in their development. Leda Cottages, in combination with other CTRL sites, will contribute to research issues relating to chronology, aspects of settlement, landscape, trading patterns and processes of change.
- 4.5.13 The CTRL Research strategy has also highlighted the importance of studying the effect of the development of towns on the organisation of the landscape. The relative proximity to the Roman 'small town' at Westhawk Farm offers some potential to address this question. Recent excavations suggest that the main phase of occupation of the town was dated from the mid 1st to the mid 3rd century, and ironworking formed an important part of its economic base. It is likely that this small town (the only such in the vicinity) was the local market centre for the settlement at West of Leda Cottage. The sites of Beechbrook Wood, Leda Cottages and Bower Road (URS 2002a) appear to be of comparable status, and are all within a potential catchment area of Westhawk Farm. Further study of this group of sites has the potential to provide evidence regarding the hierarchy of settlements in the area and their relationships to the main Roman centre.

*Towns and their Rural Landscape; The medieval and post-medieval periods (AD 1100-1700):*

- 4.5.14 A small collection of finds relating to this period were noted within the topsoil and subsoil sealing the site, however there was no evidence for any activity other than ploughing. There is therefore no potential to address the Fieldwork Event Aims.

#### **4.6 Updated Research Questions**

- 4.6.1 The following updated research questions are formulated from the statement of potential (see section 4.5 above). These are presented as a series of aims and objectives, following recent guidance from English Heritage regarding the formulation of updated project aims (English Heritage nd, 2-3). This recommends that it is helpful, when appropriate, to treat *aims* as major themes or goals to which specific *objectives* contribute, and that it is helpful, when appropriate, to think of aims and objectives as questions.

- 4.6.2 Overall, there is some potential for further detailed analysis of the site data. Certain elements of the artefact and ecofact assemblages, and their stratigraphic context, may be used to address research themes concerning chronology and material culture, in particular sources of raw materials and patterns of trade.

- 4.6.3 There is also the potential to address broader issues concerning settlement, landscape and society, regionality (distribution and exchange, cultural identity, inter-regional contact) and processes of change, in particular through comparison with other contemporary sites within the Ashford area, such as Beechbrook Wood (URS 2002b) and Westhawk Farm (Booth and Bingham 2001)

*Hunter-foragers (200,000-4500 BC) - Early agriculturists (4500-2000 BC) into Farming communities (2000-100BC)*

- 4.6.4 *Updated Research Aim 1:* To provide additional data for the study of the range and location of human activity during the prehistoric period.
- 4.6.5 Brief consideration should be given to the worked flint assemblage in the context of wider landscape studies.

*Towns and their Rural Landscapes (100 BC - AD 410)*

Site-specific Research Aims

- 4.6.6 *Updated Research Aim 2:* To define, as far as possible, the probable nature and function of the settlement at Leda Cottages and its relationship to the wider landscape
- Objective 1: To refine the present understanding of the chronology of the settlement.
  - Objective 2: To refine the present understanding of the nature of the structures on site and of the economic base of the site.
  - Objective 3: To refine the present understanding of the layout and development of the settlement, and in particular the establishment of any activity areas and the practices they represent (eg. pottery production and ironworking)

- Objective 4: How does the industrial activity at Leda Cottages compare with similar sites, such as Beechbrook Wood, and with the metalworking tradition of the Weald?
- Objective 5: To characterise the likely status of the site and its inhabitants through consideration of the nature of the structures on the site and the range and types of artefacts present, and comparison with other sites in the vicinity.

#### Landscape Zone Research Aims

4.6.7 *Updated Research Aim 3:* To characterise the form of Late Iron Age settlement in the area

- Objective 1: What is the nature of the settlement during this period?
- Objective 2: What evidence relating to trading networks can be identified?

4.6.8 *Updated Research Aim 4:* To assess the evidence for change through time in the organisation of the landscape, including the effects of the Roman conquest and the development of the 'small town' at Westhawk Farm

- Objective 1: Is there evidence from this group of sites, including Leda Cottages and Beechbrook Wood, to suggest that there was change or continuity in the organisation of the local landscape following the Roman conquest of Britain?
- Objective 2: How does the development of Leda Cottages compare and contrast with that of other sites in the vicinity? Is the evidence for change synchronous across the group and is it likely to be the result of common factors?
- Objective 3: What caused the abandonment of this part of the settlement after c. AD 270? Is this a regional pattern?
- Objective 4: How does the development of Leda Cottages and other nearby rural sites relate to the development of the 'small town' of Westhawk Farm?
- Objective 5: What common factors, if any, can be perceived in the growth and decline of the town and the rural sites? What is the connection between the town and the rural sites likely to have been, and is there evidence for this in the archaeological record?

#### Material Culture

4.6.9 *Updated Research Aim 5:* What are the sources of raw materials? What evidence is there for the trade in raw materials?

#### Ceramics

- Objective 1: What are the sources of the ceramic objects found on the site? Were they produced on site or acquired through local trading networks? Is there any difference in the sources of supply over time?
- Objective 2: Were the local ceramics used as packaging for the marketing of local products? If this was the case what did the vessels contain?

These objectives can be achieved by a comparative study with other assemblages such as Beechbrook Wood, Bower Road, Westhawk Farm and Thurnham. Thin-sectioning for the characterisation of the local wares is recommended. Residue analysis on selected rims may help to identify their original contents, and may help to establish their use as packaging for local goods.

#### Lithics

- Objective 3: What are the sources of the stone objects found on site? Can patterns of contact and trade be established from the source analysis?

#### Metalworking and metalworking residues

- Objective 4: What is the likely source of the iron ore used in the smelting process? What are the differences and similarities in production processes and techniques between this site and other contemporary sites such as Beechbrook Wood and Westhawk Farm? Can patterns of contact and trade be established from the source identification?

#### Environmental Remains

- 4.6.10 *Updated Research Aim 6:* What can the macroscopic plant remains and charcoal tell us about the nature of agricultural activity on the site?

#### Macroscopic plant remains and charcoal

- Objective 1: What is the evidence for cereal cultivation, what is its date, and how does it compare with regional and inter-regional patterns.
- Objective 2: What evidence is there for the preferential use of different wood for fuel? What are the evidence from contemporary sites such as Beechbrook Wood and Westhawk farm?

#### *Additional aims*

- 4.6.11 Additional research aims identified by specialist contributors that are beyond the scope of the original CTRL Landscape Zone Priorities and Fieldwork Event Aims are set out below. Consideration may be given to adding some or all of these to the project updated research aims.

- Comparison of the tile fabrics with the Canterbury Archaeological Trust's tile fabric type series, may provide information on sources and date ranges. Additionally, comparisons might fruitfully be made with material from other Roman sites in north Kent.
- There have been recent discoveries of slag blocks previously believed to be Roman in Late Iron Age-Early Roman contexts on a number of CTRL sites. A seminar of specialists involved in the study of iron working waste is recommended in order to address some of the apparent anomalies recently noted in slag from some Late Iron Age and Early Roman sites.



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Wilkinson, D, 1992 OAU Field Manual. 1st edition, OAU, Oxford

## APPENDIX 1 - CERAMICS

### 1.1 Late Iron Age And Roman Pottery

*by Malcolm Lyne*

#### *Introduction*

- 1.1.1 Significant quantities of Early Roman and somewhat smaller amounts of Late Iron Age pottery were recovered during excavations Leda Cottages.
- 1.1.2 The bulk of the pottery was retrieved by hand on site, from sections across the various enclosure ditches and a number of pits and postholes. Smaller quantities of pottery were retrieved during the processing of environmental samples.
- 1.1.3 The retrieval of the pottery was undertaken in accordance with the Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The recovery of this material was undertaken in order to refine our understanding of the development of the settlement throughout its life and in particular its changing morphology and function.

#### *Methodology*

- 1.1.4 All pottery assemblages were subjected to general sherd count, weighing and spot-dating. There are assemblages from 122 contexts: 18 of these were selected as being from contexts crucial for the dating of the various site phases. These 18 assemblages were further quantified by numbers of sherds and their weights per fabric. They account for 15% of the contexts with pottery, 22% of the sherds and 21% of the total weight.
- 1.1.5 Fabrics were identified with the aid of a x8 lens with built-in metric scale for determining the sizes, natures, forms and frequencies of added inclusions. Finer fabrics were further examined using a x30 magnification pocket microscope with built-in artificial illumination source. The Late Iron Age and Roman fabrics are described according to the Canterbury Archaeological Trust's classifications (Macpherson-Grant *et al.* 1995).
- 1.1.6 Pottery may have been made on or near the site during the late 2nd and early 3rd centuries. These local wares lack diagnostic features which make their classification difficult. For the purpose of this assessment, these ceramics have been given temporary Canterbury codings for general unsourced fabrics of similar appearance.

#### *Quantification*

- 1.1.7 An assemblage of 1982 sherds (20, 987 g) of pottery was recovered from 115 contexts. A further 281 sherds (1542 g) of pottery was retrieved during the sieving of environmental samples from 14 of these contexts and seven others. Tables 1.1 and 1.2 below give breakdowns of these figures by context and the spot-dates arrived at for the various assemblages.
- 1.1.8 Table 1.3 shows the excavated and sieved assemblages divided by phase, which suggests fairly limited occupation during the Late Iron Age and the period *c.* AD 50-150, followed by a great increase in activity during the period *c.* AD 150-270. There

- 1.1.9 Table 1.4 gives the form and fabric breakdown of the 186 key assemblages. Those from the Late Iron Age ditches and clay lined pit group 8136, dated *c.* AD 70-150 are very small and lacking in diagnostic sherds: only the broadest date-ranges can be given for those features. The assemblages dated *c.* AD 150-270 are considerably larger and consequently better dated.
- 1.1.10 Table 1.5 gives the same information, but for the assemblages recovered during sieving. These assemblages by their very nature are generally less informative.

#### *Provenance*

##### 'Belgic' Late Iron Age. *c.* 50 BC-AD 50

- 1.1.11 The small amounts of pottery of this phase come mainly from ditches 8624, 8525 and 8629 forming the earliest enclosure (129 sherds, 875 g). This material includes very few rims or other diagnostic sherds but can be broadly dated to the 'Belgic' Late Iron Age.
- 1.1.12 Other very small assemblages come from small pits and postholes within the northern part of this earlier enclosure. Diagnostic sherds from these assemblages are equally scarce.
- 1.1.13 The bulk of the Late Iron Age sherds are in 'Belgic' grog-tempered ware variants, although significant numbers of sherds in the glauconitic-sand tempered B9.1 fabric from the Medway valley are also present.

##### Early Roman. *c.* AD 50-AD 250/70

- 1.1.14 Only five rather small assemblages can be attributed exclusively to the period *c.* AD 50-100. Pit 8062 contained a small assemblage of three 'Belgic' grog-tempered fragments and a chip from a closed form in an early-looking whiteware fabric. The construction matrix for structure 8142 (context 8138) and the upper fill of the associated pit 8136 contained a somewhat larger 32 sherds, also made up largely of grog-tempered jar fragments but with South Gaulish Dr.18 and Canterbury grey and oxidised ware sherds as well.
- 1.1.15 There are considerably larger quantities of material from 2nd-century features and from those containing a mixture of late 1st- and 2nd-century pottery. Most of the features belonging to this period are in the northern part of the Late Iron Age enclosure and immediately outside its west entrance, where there was a probable post-built structure. The post-packing for posthole 8593 relating to this putative structure contained three sherds, including a fragment from an everted rim jar in grey Upchurch fineware (*c.* AD 120-200): another small 2nd-century assemblage came from tree-throw hole 8494. Pit 8573, occupying much of the interior of the putative structure, contained 28 sherds of 2nd-century pottery, including an oxidised Canterbury mortarium with stamp in orange Fabric R6.1. Pits 8531 and 8321 within the Late Iron Age enclosure also contained small pottery assemblages of 2nd-century date.
- 1.1.16 Large pottery assemblages of late-2nd to early 3rd-century date were recovered from the backfill of tree-throw hole 8494 (containing over 500 sherds) adjacent to posthole 8593 and its associated structure and from 8282 in the south-east corner of the later enclosure (the junction of ditches 8625/8627). These coincide with a great increase in

activity on the site. The focus of this activity was in the south-east corner of the new ditched enclosure and was clearly of an industrial nature.

- 1.1.17 The various pits in the south-east corner of the enclosure produced significant quantities of pottery dated *c.* AD 150-270. Pit 8037 contained 104 sherds, including many fragments from what appear to be wasters and poorly fired pots in a patchy-fired sandy fabric with pimply surfacing. A second local fabric is represented by a large necked storage-jar in a pink relatively sand-free fabric fired yellow-buff. The upper part of a Severan ring-neck flagon in the same fabric also came from the pit, as did the lower part of another flagon; this time from Hoo and showing traces of burning.
- 1.1.18 The lining of structure 8098 (8097) contained many sherds of residual pottery and fragments from contemporary Thameside vessels. Of particular interest is the very underfired base of a local flagon in a very similar fabric to the Severan example referred to above: sandy local black coarse wares are also present.
- 1.1.19 Virtually all of the other features in this Antonine to early 3rd-century industrial feature group had sherds of both coarse and fine locally produced pottery. The presence of many fragments of wasters and poorly fired pots indicate it is likely that local wares were produced on or near the site although no features clearly related to ceramic production have been identified.
- 1.1.20 None of the pottery from the site is likely to be later than *c.* AD 270.

#### *Conservation.*

- 1.1.21 As the pottery represents the primary dating evidence for the features on the site it should be retained until final decisions have been taken about the scope of further analysis.
- 1.1.22 The pottery has no immediate conservation needs, but it should be noted that investigative techniques recommended in the statement of potential will damage or destroy a limited number of sherds. It is recommended that about six to ten sherds in the locally produced fabrics be thin-sectioned in an endeavour to determine a precise geological source for their clays and fillers. All sherds should be retained.

#### *Comparative Material*

- 1.1.23 The Late Iron Age wares lack distinct diagnostic features. The grog-tempered pottery is similar to much of that from elsewhere in East Kent and the glauconitic wares are comparable with those from Snarkhurst Wood, Hockers Lane and other CTRL sites further west towards the Medway valley.
- 1.1.24 The late 2nd- and early 3rd-century Roman, grog-tempered wares display characteristics similar to those of contemporary East Sussex wares (Green 1980; Lyne 1994) and suggest that some pottery was brought in from the Weald at that time. The local material of the same period was clearly produced on a very small scale for mainly local consumption. For the purpose of this assessment, no comparanda to the Leda Cottages pottery could be identified elsewhere within Kent, although the lack of diagnostic features of the fineware makes such comparisons difficult.
- 1.1.25 The presence of resin on the necks and rims of two of the locally-produced jars suggests packaging of some local villa estate product, or products, and their marketing over a fairly limited area.

- 1.1.26 The other non-local Romano-British wares mainly come from the Thameside and Upchurch kilns of North Kent and the Canterbury kilns. Forms are quite standard and many parallels can be quoted from all over Kent including other CTRL sites.

*Potential for further work*

- 1.1.27 The lack of vertical stratigraphic sequences and limited relationships between features makes the pottery the key to the dating and phasing of this site. Further analysis of the pottery in conjunction with other finds and the stratigraphic data should help to refine the sequence and dating of the occupation phases.
- 1.1.28 The amounts of Late Iron Age pottery are unfortunately rather small and lacking in diagnostic sherds. This material can contribute little to the more precise dating of this earliest occupation and is totally inadequate for determining whether any specialised activities were taking place on the site. A general quantification of all sherds from Late Iron Age features may, however, be of some limited use in plotting the percentage distribution of Fabric B9.1 glauconitic sherds on CTRL sites.
- 1.1.29 The earlier Roman material is also of limited use for the same reasons as apply to the Late Iron Age pottery. The real importance of this site lies in the large quantities of late 2nd-early 3rd-century pottery from the industrial area.
- 1.1.30 The locally produced wares should be written up in their entirety as a small corpus with sherds sent for thin-sectioning as detailed above (Section 1.1.22). Vessel rims should also be examined thoroughly for traces of resin sealant and their use as packaging. It might also be useful to send sherds of such vessels for residue analysis in order to determine what their contents may have been and thus the site's role in the economy of the area.
- 1.1.31 Quantities of imported pottery within the industrial area are large enough for determining the pattern of pottery supply to the site during the late 2nd and early 3rd centuries. This quantification can be compared with those for similarly dated assemblages at Thurnham and Smeeth CTRL sites and other sites such as Westhawk Farm, Ashford (Lyne forthcoming) in order to determine any variations in the pattern of pottery supply along the edge of the Kentish Weald. These imported wares should also be examined for any indications of their use as packaging: it may be that non-local pots were also used to transport the postulated local produce.
- 1.1.32 The late 2nd-early 3rd-century pottery assemblages from this site, taken in conjunction with those from other CTRL sites and elsewhere, have the potential to contribute significantly to our understanding of the contemporary pattern of economic activity within the Wealden Greensand zones of the Medway valley and East Kent, particularly with reference to CTRL period categories 3 and 4i; and these highlighted issues:

*Farming Communities (2,000-100 BC)*

- Determine spatial organisation of the landscape in terms of settlement location in relation to fields, pasture, woodland, enclosed areas and ways of moving between them
- Determine how settlements were arranged and functioned over time

*Towns and their rural landscapes (100 BC - AD 1700)*

- How were settlements and rural landscapes organised and how did they function?

- How did the organisation of the landscape change through time?
- Consider the effect on the landscape of known historical events, eg. the arrival of Roman administration.

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## **1.2 Ceramic Building Materials and Fired Clay**

*by Terence Paul Smith*

### *Introduction*

- 1.2.1 A small quantity (1.2 kg) of ceramic building material and a larger quantity (15.8 kg) of fired clay were examined for the assessment. The material labelled 'CBM' included a quantity of fired clay, which has been reclassified for this assessment. There was also some slag present: this has been removed from the assemblage and is not considered in this assessment. In a very few cases, tiny fragments may be either ceramic building material or fired clay.

### *Methodology*

- 1.2.2 The ceramic building material has been examined with a view to determining fabrics – but without any full analysis of these – and forms where appropriate. Quantities have been recorded by count and by weight. The fired clay fragments have been counted and weighed, and notes made of the most distinctive fabrics and any unusual inclusions. Exceptionally reduced (blackened) or vitrified material has been noted. The presence of original surfaces, imprints and tempering has been noted. The data have been entered into an Excel database. All the material has been retained.

### *Quantification*

- 1.2.3 The total weight of ceramic building material scanned for the assessment is 1.2 kg and the total weight of fired clay is 15.8 kg; of the latter, 5.9 kg may be daub. Quantification of ceramic building material by count and weight are listed in Table 1.6. Quantification of fired clay by count and weight are listed in Table 1.7. A list of probable/possible daub by context is presented in Table 1.8.

Ceramic Building Material

### Roman

1.2.4 The Roman tile assemblage is very small at only 1.2 kg. It was recovered from contexts 8060, 8097, 8498, and 8499. All these contexts have already been spot-dated to the period *c.* AD 150-250/270. Both the forms (types) present, *tegulae* and *imbrices*, are roofing tile. None is complete. Count and weight of Roman tiles by types are listed in Table 1.9.

1.2.5 The four pieces are all in a similar fabric (*Fabric 1* in the database), orange in colour with tiny black iron oxide, white calcium carbonate, and mica specks in a smooth matrix, with the use of fine moulding sand.

#### Post-Roman building material

1.2.6 A small fragment (21 g) of plain tile was recovered from context 8465. It is in a fairly fine orange/red fabric (*Fabric 2* in the database) somewhat similar to MoL fabric 2271. It is impossible to date a small fragment like this: plain tiles were in use in Kent from the 12th century to recent times. The standard form had two holes for fixing with either pegs or nails.

1.2.7 A tiny fragment (5 g) of an unidentifiable ceramic material was recovered from context [8298], which also contained part of a Roman *imbrex*.

#### Fired clay

1.2.8 The bulk of the material examined for this assessment, coming from a total of 62 contexts, was fired clay, including pieces that had originally been classified by the excavators as ceramic building material. Fired clay and daub constitute 91% of the material scanned for this assessment.

1.2.9 Much of the material consists of small fragments, often abraded and/or burned. The latter is consistent with the fact that much of it is associated with hearths or furnaces and specifically with iron smelting, as witnessed by the amounts of slag, some of it included amongst the fired clay. Some pieces, however, are or may be daub; these are shown in Table 1.8.

1.2.10 A possible lath impression (context 8192) was noted but appears very uncertain. Some of the wattle impressions are more convincing. The possible post impressions (contexts 8128, 8514) are of circular posts.

1.2.11 Other pieces with smooth faces came from contexts 8015, 8020, 8097, 8137, 8580, and 8601. The last shows two flat faces at right-angles to each other. The context suggests that this may be part of a hearth wall or some similar feature.

#### *Provenance*

1.2.12 The provenance of the material is not known, although it seems likely that the fired clay is more or less local. The ceramic building materials too are probably Kentish products, as tiles in Fabric 1 occur on other Roman sites in north Kent.

#### *Conservation*

1.2.13 Some of the fired clay which is associated with iron smelting may be worthy of detailed inspection and further assessment by a specialist in the field of furnaces and iron smelting.

1.2.14 The following items should be kept:



- One of the Roman *tegulae* or *imbrices*, since the fabric may need to be compared with others
- Any fired clay which is associated with iron smelting and which is to be looked at by a specialist in that field.

- 1.2.15 There is little point in retaining the rest of the material, whether ceramic building material or fired clay, in the long term. There are no special requirements for long-term storage, other than the use of robust packaging materials and a dry environment.

*Comparative Material*

- 1.2.16 The tile fabrics found on the site should be compared with the Canterbury Archaeological Trust's tile fabric type series, which may provide information on sources and date-ranges. Comparisons might fruitfully be made with material from other Roman sites in north Kent, although this would have to be considered as a long-term, non-site-specific project.

*Potential for Further Work*

- 1.2.17 The tile fabrics provide potential evidence for the sources of the building materials used at or near the site in the Roman period. It is unlikely that the one small fragment of post-Roman peg tile will prove at all useful in this respect. The fired clay and daub is a potential source of information on iron smelting. But it contributes only minimally, if at all, to knowledge of building techniques using wattle-and-daub, since (a) the material is fragmentary and mostly very abraded; (b) some of the features – such as the possible lath impression and some of the possible wattle impressions – are far from certain; and (c) most appears not to be in primary contexts.
- 1.2.18 The material does not require illustration.
- 1.2.19 The furnace fired clay should be examined by an appropriate specialist.

## APPENDIX 2 - LITHICS

### 2.1 Flint

*By Hugo Lamdin-Whymark*

#### *Introduction*

- 2.1.1 A total of 83 pieces of worked flint and 245 pieces of burnt unworked flint (weighing 2,770 g) was recovered from the excavations. This material, summarised in Tables 2.1-2.2, is redeposited within later features. No diagnostic retouched forms were recovered, however distinctive technological traits indicated the presence of a small number of late Mesolithic/early Neolithic flints and Bronze Age flintworking.

#### *Methodology*

- 2.1.2 All of the flint was briefly scanned and recorded, with information regarding dating, technology and general condition being noted. The material was added to an Access database. All of the burnt flint was scanned and weighed; general comments on the condition of this material were also made.

#### *Quantification*

- 2.1.3 A total of 83 pieces of worked flint and 245 pieces of burnt unworked flint (weighing 2,770 g) was recovered from the excavations. This material is summarised below in Tables 2.1 and 2.2.

#### *Provenance*

- 2.1.4 The flintwork was recovered from a wide variety of features, the majority dating from the Iron Age or later periods; therefore, the flintwork in these features is redeposited. No diagnostic retouched forms were present to assist with dating, however, technological traits aided identification of the industries present. The bipolar blade core, along with several narrow flakes and blades, which exhibit platform edge abrasion, belong to a predominantly blade-based industry of Late Mesolithic or Early Neolithic date. The majority of the assemblage comprises thick and squat flakes, struck using hard hammer percussors; these flints belong to the flake-based industry of the Bronze Age. The presence of cores, chips and irregular waste indicate that some knapping has occurred on or around the site, whilst the presence of a small retouched component (two scrapers and an edge retouched flake) indicates various activities were performed in the vicinity of the site. However, in general the quantity of flint recovered is small and reflects a background presence in the area from the late Mesolithic onwards.

#### *Conservation*

- 2.1.5 Much of the flint has suffered some post-depositional edge damage; cortication is not present. Several pieces of burnt unworked flint were also recovered; this material was very heavily calcined either grey-white or red. A few of the worked flints were also burnt.
- 2.1.6 The flint is adequately bagged and boxed for long-term storage. There are therefore no storage or conservation requirements.

### *Comparative Material*

- 2.1.7 The flint can be compared to other sites from the CTRL route which produced Late Mesolithic/Early Neolithic and Bronze Age material, eg. Beechbrook Wood.

### *Potential for Further Work*

- 2.1.8 The flint assemblage provides evidence for human activity on site predating the cut features, however, the limited size, mixed composition and residuality of the assemblage limits the potential for further work. A summary for publication should be produced using this assessment as a basis.

## **2.2 Humanly Modified and Unworked Stone**

*by Ruth Shaffrey*

### *Methodology*

- 2.2.1 All retained stone was examined with a x10 magnification hand lens. The stone has been tabulated according to whether it is humanly modified or unworked so that time will not need to be spent on further consideration of the unworked stone.

### *Quantification*

- 2.2.2 Approximately 300 fragments of stone were recovered. Table 2.3 summarises the worked stone; Table 2.4 summarises the lava fragments; Table 2.5 summarises the burnt but unworked stone and Table 2.6 summarises the remaining unworked stone.
- 2.2.3 The assemblage included one complete quern, two fragments of querns and two probable fragments of querns. Of these, two were of Hertfordshire Puddingstone, one was of lava, one was of Greensand and one was possible German Triassic sandstone or Millstone Grit. The provenance of this last stone needs to be clarified with thin section analysis. All the stone retrieved from the site was extremely weathered and in addition to the quern of lava, several contexts produced numbers of very small lava fragments which, although they retain no original features, are most likely to be from querns. Small quantities of ironstone, such as might have been used in the iron-smelting process, were also recovered.
- 2.2.4 One possible tessera was identified. This was of a purple coloured quartz ironstone which was a popular material for mosaics. No other stone evidence for a tessellated floor was recovered.
- 2.2.5 One very large rectangular chunk of quartzitic sandstone appears to have been shaped from a boulder and was probably used in construction having been recovered from the structural debris of a flint lined structure (8098). Another square chunk of stone also shaped from a boulder and with several smooth sides was recovered from the fill of a pit (8498) and may have been used for grinding.
- 2.2.6 A flint sphere which may have been a sling shot was retrieved from the fill of a pit (8281).

### *Provenance*

- 2.2.7 The stone mostly came from the fills of pits and ditches. Four of the rotary querns were recovered from the fills of pits while the fifth was used in the construction of a flint

lined structure (8098). One block of stone was probably also found amongst the structural debris of 8098.

#### *Conservation*

- 2.2.8 No conservation is required. The lava quern which has been almost completely degraded cannot be repaired but has been carefully packaged to preserve it.
- 2.2.9 All unworked stone may be discarded.

#### *Comparative Material*

- 2.2.10 The main items of worked stone which were retrieved were the rotary querns. All the positively identified materials which here were used in Kent during the Roman period and the range of stone types exploited is largely the same as those found at Thurnham.
- 2.2.11 Hertfordshire Puddingstone tends to occur on early Roman sites and is thought to have been mainly used during the early Roman period. It is the least commonly utilised stone type in Kent which is represented here. Thurnham Villa is the only site from previous CTRL excavations which has produced querns of the same lithology. Examples outside the CTRL project are hard to find but there are possible specimens from Fordcroft, Orpington (Tester 1970, 68-69) and another at Oliver Crescent, Farningham (Priest and Cumberland 1931, 69-70, quoted in Black 1987, 177).
- 2.2.12 Lava was more commonly used in Kent. Within the CTRL project, it has been found on sites including Springhead, Waterloo Connection and Thurnham (Roe 1999, 31; Shaffrey 2000a; Shaffrey 2000b). Lava has also been identified as a quern material outside the CTRL project, especially in eastern Kent and sites include Church Field, Snodland where one fragment was found (Ocock and Sydell 1967, 213-214) and Fawkham, which produced “irregular lumps” of lava querns (Philp 1964, 72).
- 2.2.13 Greensand was locally available and has been found at sites including the CTRL site of Thurnham (Shaffrey 2000b) and the Romano-British farmstead at Fawkham (Philp 1964, 72) and Joyden’s Wood (Tester and Caiger 1954, 182).
- 2.2.14 The quern of unknown material may be either Millstone Grit or German Triassic Sandstone. The latter could easily have been imported at the same time as querns of lava and might in fact have been an easier material to import than Millstone Grit from Derbyshire. Analysis of a thin section would help determine the source.
- 2.2.15 The variety of materials exploited are comparable with other sites across Kent. At nearby Westhawk Farm, querns were made from Millstone Grit, Lava and Greensand. Of the lithologies found at Leda Cottages, the use of Hertfordshire Puddingstone is the most unusual. It was much less commonly used in Kent than the other materials, although previous work at Thurnham has shown that it did occur. Future work would usefully examine the distribution of Hertfordshire Puddingstone querns in Kent, which has hitherto only been published as an interim report, and determine whether this find is on the periphery of the distribution.

#### *Potential for Further Work*

- 2.2.16 Although there were few rotary querns from the site, they are of a broad variety of materials, including Hertfordshire Puddingstone which tends to be from early Roman contexts only and a possible German Triassic Sandstone.

- 2.2.17 Understanding the supply of querns and other items of stone can contribute to any study of the economics of the site and its patterns of contact and trade. To achieve this there needs to be a detailed typological and lithological description of the querns and other artefacts.
- 2.2.18 An in-depth examination of the distribution of Hertfordshire Puddingstone and German sandstone in particular would be beneficial. A study of the Hertfordshire Puddingstone could contribute to a wider study of the distribution of this under-examined quern material. An examination of the possible German Sandstone, whose provenance needs to be determined, could have implications for any study of the supply of the site. Ideally it should be thin sectioned and examined microscopically.
- 2.2.19 Discussion of the objects in relation to contextual information could contribute to a study of the changing supply to the site and to different zones of activity across site.

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### **APPENDIX 3 -GLASS**

#### **3.1 Glass**

*by Valerie Diez*

- 3.1.1 A total of eight small fragments of undiagnostic green-blue fragments of vessel glass were recovered from the fill of a tree-throw hole (Table 3.1).
- 3.1.2 They are in reasonable condition and do not require any further conservation. They have no potential for further work.

## APPENDIX 4 METALWORK

### 4.1 Metalwork

*by Valerie Diez*

*Introduction and methodology*

- 4.1.1 A total of 5 iron items were recovered from the excavation Leda Cottages. The assemblage has not been x-rayed.

*Quantification*

- 4.1.2 The metal artefacts are summarised in Table 4.1.

- 4.1.3 One complete nail and two heads of nails were retrieved from context 8036. The complete nail was bent in an L-shape.

- 4.1.4 Two complete nails were recovered from context 8097. One of them was slightly bent.

*Conservation*

- 4.1.5 No further conservation is required.

*Potential for Further Work*

- 4.1.6 Due to the very small size of this assemblage, there is no potential for further work.

## APPENDIX 5 IRON SLAG

*By Lynne Keys*

### *Introduction*

- 5.1.1 A large assemblage (just over 171 000 g) of iron slag and related material was recovered from a variety of contexts.
- 5.1.2 This assemblage appears to date to the Late Iron Age and Early to slightly later Roman periods. There was some evidence of metalworking in the form of furnaces which are most likely associated with the iron slag recovered from the site.

### *Methodology*

- 5.1.3 With the exception of five soil samples, all the slag have been recovered by hand.
- 5.1.4 All the slag presented was examined by eye and categorised on the basis of morphology alone. Identification of slags resembling “slag pit blocks” was the more difficult because the slag was unwashed. Each category of slag within individual contexts was weighed separately and the smithing hearth bottoms were each individually weighed and measured to obtain their dimensions.
- 5.1.5 Since the slag was unwashed however, the soil in the bags was routinely examined by eye and with a magnet in an attempt to locate any micro-slugs; the results are recorded under the entries for “hammerscale” in each context.

### *Quantification*

- 5.1.6 All quantifications are listed in Table 5.1
- 5.1.7 Activities involving iron can take two forms:
- 1) the manufacture of iron from ore and fuel in a *smelting* furnace. The resulting products are slag (waste) and a spongy mass called an unconsolidated bloom which consists of iron with a considerable amount of slag still trapped inside.
  - 2a) *primary smithing* (hot working by a smith using a hammer) of the bloom on a stringhearth, usually near the smelting furnace, to remove excess slag. The slag from this process will include micro-slugs, particularly tiny smithing spheres
  - 2b) *secondary smithing* (hot working) of an iron shape by a smith to turn it into a utilitarian object. This will also generate micro-slugs: hammerscale flakes from ordinary hot working of a piece of iron, or tiny spheres from high temperature welding to join two pieces of iron.

### *Smelting*

- 5.1.8 Several types of smelting slag were recovered: furnace bottoms, tap slag, and possible slag blocks. A tiny amount of dense slag, and some possible ore was also identified.
- 5.1.9 Furnace bottoms (resembling very large smithing hearth bottoms) derive from smelting in a covered bowl furnace where the slag sinks to the bottom with the bloom on top;



sometimes the bloom is intermixed with the slag and the latter has to be broken up to extract it. The smelting furnace bottoms are distinguished from smithing hearth bottoms by their larger size. Some of the examples from Leda Cottages are extremely large, identifying them as the former type rather than the latter s (eg. those from contexts 8510 and 8560).

- 5.1.10 Another type of smelting furnace had a pit below it in which the slag was allowed to collect, rather than being tapped out of the furnace. The distinctive slag produced by this furnace is called a slag block (*Schlackenklutz* in German). Slag blocks are common in southern Scandinavia, north Germany and Poland but a few have been found mainly in eastern England dating to the early Anglo-Saxon period. The furnace above the slag pit was moveable so the slag could be left in the hole when the pit was full.
- 5.1.11 It has generally been believed until now that slag-pit furnaces were not in use before or during the Roman period in Britain but recent work on some Late Iron Age/Early Roman iron smelting sites seems to cast doubt on this assumption (see Comparative Material, below). Several very large pieces of slag resembling broken slag blocks were seen amongst the Leda Cottages material and require further examination when cleaned.
- 5.1.12 Tap slag is a dense, low porosity, fayalitic (iron silicate) slag with a ropey flowed structure. It is formed as the liquid slag is allowed to flow out continuously or intermittently through a hole in the side of the furnace along a specially made channel into a hollow in the ground. This removal of the slag facilitated retrieval of the bloom after the smelting operation. It is believed furnaces with tap holes replaced bowl furnaces in the Roman period as their efficiency was recognised.
- 5.1.13 With so many different types of smelting slags present it is also likely that some of the broken fragments which are heterogeneous in their makeup could be smelting rather than smithing slags. These slags, like smithing slags, contain charcoal and/or wood and may be magnetic in some parts and such characteristics are included in comments in table 5.1.
- 5.1.14 Dense slag is of low porosity and also represents smelting activity but lacks the flowed surface of tap slag.
- 5.1.15 Several pieces of ore were found in context 8020, described as the fill of a furnace associated feature, 8019. These require examination by a geologist to determine whether they may be ore and, if so, to determine their source.

#### Smithing

- 5.1.16 Slags diagnostic of iron smithing take two main forms: bulk slags and micro slags. Among the bulk slags the smithing hearth bottom is the one least likely to be confused with slags produced by smelting. Its characteristic plano-convex-shape (which can sometimes be quite large) was formed as a result of high temperature reactions between the iron, iron-scale and silica from either a clay furnace lining or the silica flux used by the smith. The predominantly fayalitic (iron silicate) material produced by this reaction dripped down into the hearth base during smithing forming smithing slag which, if not cleared out, developed into the smithing hearth bottom.
- 5.1.17 Smithing hearth bottoms were found in numerous contexts on the site, often associated with smelting slags. This implies both activities were taking place on the site and that

the blooms produced by the smelting process were being further refined before being sent elsewhere.

- 5.1.18 Iron smithing also produced micro-slags (*hammerscale*) of two types: flake and spheroidal. Flake micro-slag resembles silvery fish scales and is the product of the ordinary hot working and hammering of a piece of iron where fragments of the oxide/silicate skin flake off from the iron and fall to the ground. Spheroidal micro-slags are small solid droplets of liquid slag expelled from within the iron during the primary smithing of a bloom or the fire welding of two pieces of iron. Hammerscale is not visible to the naked eye when in the soil but is highly diagnostic of smithing activity, often remaining in the area around the anvil and near the hearth when macro-slags have been cleared out of the smithy and dumped elsewhere. Since it is generally highly magnetic, its detection with a magnet while excavating can allow the spatial relationship of the anvil to the hearth to be recorded and can pinpoint the smithing activity more precisely.
- 5.1.19 Occurrence of the small spheres which one can expect on a smelting site as a by-product of primary smithing of blooms prior to their removal is extremely scarce on the site. Flake hammerscale, representing secondary smithing of iron which has already been prepared for the manufacture of objects, is, however, present.
- 5.1.20 This anomaly is difficult to explain but it may have been caused by unconsolidated blooms being taken away for primary smithing and the flakes represent iron which was brought in for general working in the settlement. In this author's experience, spheroidal micro-slag may not be as magnetic as commonly assumed, and only careful washing of slag over a very fine mesh (not flotation - spheres float away) to retrieve microslags from the adhering soil may recover more evidence. A general reassessment of metalworking sites with regard to such apparent anomalies is, in this author's opinion, required.

#### *Provenance*

- 5.1.21 The most significant groups in terms of iron slag were those identified as furnaces, and located away from the main area, near the present day stream, with the exception of group 8300. Group 8300, feature 8335 is described as a furnace superstructure and contexts from it (8336, 8337, 8338, 8340, 8343, and 8347) produced both smelting slags and smithing slags. Other metalworking-related features would seem to be furnace base 8011 (context 8010) and furnaces 8014 (context 8012) and 8018 (contexts 8015, 8017 and 8020).
- 5.1.22 Some other groups in ditch fills contained substantial and interesting groups of slag but their relationship to the metalworking area(s) needs closer examination before further work is undertaken.

#### *Conservation*

- 5.1.23 Alkali silicate slags and fayalitic iron slags do not deteriorate and so require no special storage or treatment. It is recommended that the slag be washed over fine mesh to clean it for further research and that all residues found in the mesh from each context are carefully dried, packaged and marked so they too can be examined more closely.

### *Comparative Material*

- 5.1.24 Comparanda with the Leda Cottages assemblages are found in two non-CTRL sites currently being studied by English Heritage (Westhawk Farm, Kent and Thorpe Lea Nurseries near Egham). Both exhibit similar associated slag types, and appear to have “slag pit” type associated with furnace bottoms and tap slag. At least one of these smelting sites also lacks the smithing spheres which ought to be associated with primary smithing of blooms but has flake hammerscale from secondary smithing.
- 5.1.25 Nearby CTRL site Beechbrook Wood also had what appeared at the time of assessment to be a slag of slag pit type (context 1080) amongst its assemblage. It too lacked microslag evidence for primary smithing but produced evidence for secondary smithing.
- 5.1.26 In view of these discoveries, a seminar of specialists involved in the study of iron working waste is recommended in order to address some of the apparent anomalies recently noted in slag from some Late Iron Age and Early Roman sites.

### *Potential for Further Work*

- 5.1.27 There is great potential for further work on the slag, especially in view of the wide range of slag types which appear to be present, including evidence for smelting activity, primary and secondary smithing. The context in which this activity takes place can provide information regarding the exploitation of iron deposits in the Weald of Kent. In addition to full publication, there is a possibility that the Leda Cottages slag could be included in a wider research programme of metallographic analysis in the Centre for Archaeology, English Heritage. In any case, the site certainly merits publication as it will be of interest nationally as well as regionally. The value of Leda Cottages slag assemblage at inter-site level has been highlighted in the overall potential of the site (refer to sections 4.5.12 and 4.5.13).
- 5.1.28 Further analysis will require the cleaning of the material, particularly those groups which are associated with furnace groups and those large amounts from ditches (this includes the very large furnace bottoms from context 8510).
- 5.1.29 Further spatial analysis should be undertaken in conjunction with the project’s field staff to clarify relationships between slag types and structures. Comparative studies of the morphology of the structures should be undertaken to identify comparanda from other published sites.
- 5.1.30 The presence of potential ores from context 8020 should be confirmed by a geologist, and source identification undertaken. This may help to highlight the nature of regional and inter-regional trading networks during the period.

## APPENDIX 6 - ANIMAL BONE

### 6.1 Animal Bone

*by Bethan Charles*

#### *Introduction*

- 6.1.1 A total of 315 fragments were recovered by hand from excavations at Leda Cottages. Many of the bones were very fragmented and reassembly of the pieces reduced the fragment count to 152. A further 3 fragments of bone were recovered during environmental processing. None of the sieved bone fragments could be identified to element or species.

- 6.1.2 All quantification are listed in Table 6.1.

#### *Provenance*

- 6.1.3 The bone was in particularly poor condition due to the acidic nature of the soil, the majority of surviving elements being the teeth and burnt bones. Nine fragments of burnt bone were recovered by hand from contexts 8477 and 8608 whilst a single fragment of burnt bone was recovered from the sieved material from context 8309. The sieved fragment was very small and undiagnostic but may possibly be part of a human long bone.

#### *Conservation*

- 6.1.4 The storage of the animal bone in finds boxes is satisfactory for long-term storage.

#### *Potential for Further Work*

- 6.1.5 Only one cattle tooth from context 8137 and a fragmented tooth from context 8281 could be clearly identified to species. A possible cattle mandible fragment with associated fragmented teeth fragments was recovered from context 8286 and the remains of teeth again possibly belonging to a horse were recovered from context 8097. In light of the small number of identified fragments it is clear that the assemblage is unlikely to provide useful information regarding the animal husbandry practices, status and typical diet of the inhabitants at the site. All primary recording data can be found in the archive.

- 6.1.6 No further work is recommended.

## APPENDIX 7 MACROSCOPIC PLANT REMAINS AND CHARCOAL

by Ruth Pelling

### Introduction

- 7.1.1 Samples for the extraction of charred plant remains and charcoal were taken from a range of features including postholes, pits, hearths and ditches as well as industrial furnaces with evidence of iron smelting. The deposits sampled were of Late Iron Age and Roman date. Samples of 3 to 40 litres in volume were processed by flotation in a modified Siraf-type machine. The flots were collected onto a 250 µm mesh and allowed to air dry. A total of 61 samples were submitted for assessment.

### Methodology

- 7.1.2 Each sample submitted was first put through a stack of sieves from 500 µm to 2 mm mesh size in order to break the flot into manageable fractions. Each fraction was then scanned under a binocular microscope at x10 to x20 magnification. Seeds or chaff were provisionally identified on the basis of morphological characteristics and an estimate of abundance was made. Charcoal was broken in transverse section and provisionally identified. Quantification was based on a four point relative scale for charcoal (present, common, frequent and abundant), and on numerical estimates for seeds and chaff (1-10, 11-50, 51-100 and >100).

### Quantification

- 7.1.3 All quantification are listed in Table 7.1.
- 7.1.4 A total of 61 samples were assessed, 41 of which produced seeds and/or chaff and 51 produced charcoal. Cereal grain was present in 37 samples, five of which contained over 50 grains. Samples <824> and <818>, produced very large assemblages. Sample <818> contained over 2000 grains, the majority of which were provisionally identified as *Triticum spelta* (spelt wheat). This sample also contained large quantities of glume bases. In total chaff was noted in 31 samples, 6 of which produced more than 50 items (including sample <818>). Overall the cereal species were dominated by *Triticum spelta* with occasional *Hordeum vulgare* (barley) and *Avena* sp. (oats). It was not possible to establish if the *Avena* sp. was a cultivated or wild species. In addition to the cereal remains weed seeds were present in 24 samples, generally in small quantities and two samples produced occasional large legumes recorded as *Vicia/Pisum* sp. (vetch/bean/pea). Occasional *Corylus avellana* (hazel) nut shell was noted in sample <836>.
- 7.1.5 The charcoal was dominated by *Quercus* sp. (oak), while cf. *Prunus spinosa* (sloe), *Pomoideae* (apple/pear hawthorn etc.) and cf. *Corylus/Alnus* sp. (hazel/alder) were also noted. Of the 51 samples that produced charcoal, most contained only small amounts. Two samples produced abundant charcoal with no other charred remains, pit sample <800> and furnace sample <846>. A further 12 samples contained frequent charcoal.

### Provenance

- 7.1.6 All types of feature produced charred seeds and chaff. Sample <818> which produced a very large deposit of grain and chaff was taken from a posthole. Sample <824> which also produced a good cereal assemblage was taken from another posthole. The large

deposits of cereal grain and chaff and the consistency of the presence of *Triticum spelta* across the site would suggest that cereal processing activities were taking place and that the remains derive from accidents during processing or storage, or from deliberately burnt and discarded cereal processing waste. Much of the material is likely to be redeposited, although some *in-situ* burning might be represented, for example in the case of the large amount of grain from posthole sample <818>. The two furnace samples and furnace associated feature sample <805> produced frequent or abundant charcoal with no seeds or chaff. It is reasonable to assume that the charcoal derived from fuel for the furnaces.

#### *Conservation*

- 7.1.7 The flots are in a stable condition and can be archived for long-term storage.

#### *Comparative Material*

- 7.1.8 Assessment of samples from sites along the length of the CTRL and from other sites in Kent suggest that cereal cultivation was well established by the Late Iron Age, although some sites, such as South of Snarkhurst Wood, appear not to have been involved in cereal processing on any scale. The assessment evidence also suggests that all sites in the region produced *Hordeum vulgare*, but there were sites which were concerned with both *Triticum dicoccum* (emmer wheat) and *T. spelta*, such as Thurnham Villa, Eythorne Street and Beechbrook Wood, and sites which appear to have only utilised *T. spelta*, such as East of Station Road. An earlier assessment of samples from Leda Cottages as part of the Hurst Wood group produced *Hordeum vulgare* and *Triticum dicoccum*, with no *T. spelta*, although the number of samples and quantities of grain and chaff were small.
- 7.1.9 In other well studied areas of southern Britain, such as the Thames Valley and the Hampshire basin, *Triticum spelta* was the dominant cereal cultivated during the Late Iron Age and Roman periods. *Triticum dicoccum* appears as little more than a weed in most areas of southern Britain, although it has been recorded at some sites in the Roman period as a crop in its own right (eg. Pelling 2000). In the north-east of England both *T. dicoccum* and *T. spelta* were cultivated throughout the Iron Age and into the Roman period, where the choice of wheat seems to be based on the agricultural regime of that site (Van der Veen and O'Connor 1998). It is yet to be demonstrated if there was a deliberate choice to grow either spelt, or emmer, or a mixed crop, in the Kent region or if the occurrence is totally random.

#### *Potential for Further Work*

- 7.1.10 The arable economy of Kent is still poorly understood, although work on the CTRL has highlighted some interesting elements which seem to be characteristic of the region, but unlike neighbouring areas. Principal characteristics seem to be the early introduction of spelt wheat in the Middle Bronze Age, at least to the Thames Estuary area (Pelling, unpub.) and the continued cultivation of emmer wheat on some sites through the Iron Age and Roman period. It is important to establish why some sites produce abundant evidence for cereal production or processing and others do not. To attempt to establish why some sites were utilising emmer and spelt and others just spelt is also a research aim that ought to be addressed. The data from individual sites, such as Leda Cottages, form critical components of the broader landscape study in terms of their agricultural relationships. It is therefore recommended that up to 5 samples which produced over 50 items of grain and/or chaff and the two very rich cereal deposits are sorted and

examined in full (samples <818, <824>). In addition, the assessment data should also be utilised in the final report.

- 7.1.11 The majority of the charcoal recovered is from redeposited fills of pits, ditches and as such probably represent spent firewood. Oak seems to be the most well represented taxa, as is often the case on archaeological sites, probably reflecting the availability and usefulness of the tree. Pomoideae likewise tends to be well represented in archaeological deposits. Any analysis of the charcoal from the majority of features is likely to be of limited use. The industrial features on the site may reflect a more deliberate collection and use of wood taxa however, perhaps with taxa selected for its particular burning qualities, temperature ranges and so on. It is therefore recommended that charcoal from the furnace samples and the burnt shallow pit 8019 be examined more closely.

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*Table 1.1: Quantification of all excavated pottery assemblages*

Context	Count	Weight (g)	Early date	Late date	Period	Phase	Comments
8001	6	35	AD.170	AD.250	RO	Phase 3	R16 closed, LR2 sherds
8015	4	11	AD.170	AD.250	RO	Phase 3	R1 sherds
8032	54	146	AD.120	AD.200	RO	Phase 2	R43 Dr.31
8036	46	738	AD.150	AD.250	RO	Phase 2/3	R73 flask, R16 beaker, R1 and local sherds
8038	3	18	50BC	AD.200	RO	Phase 2	Misc. grogged sherds
8040	2	2	50BC	AD.50	RO	Phase 1	B2, B9.1 sherds
8042	1	342	AD.150	AD.250	RO	Phase 2/3	Trunc. Local flagon
8043	7	209	AD.120	AD.200+	RO	Phase 2	Local Immit. BB2 dish
8044	36	384	AD.200	AD.250	RO	Phase 3	Local flagon
8045	14	379	AD.150	AD.270	RO	Phase 3	Local storage jar
8048	26	96	AD.70	AD.150	RO	Phase 2	Lower part of R16 flagon
8050	32	316	AD.100	AD.200	RO	Phase 2	B2/R1 transit jar
8051	7	115	50BC	AD.200	RO	Phase 2	Misc. grogged sherds
8060	16	257	AD.150	AD.270	RO	Phase 3	R46 Dr.31, R14 dish
8061	4	42	AD.43	AD.100	RO	Phase 2	Local flagon sherds
8065	5	57	50BC	AD.50	LIA; RO	Phase 1	B2.1 sherds
8067	2	18	50BC	AD.50	LIA; RO	Phase 1	B2 sherds
8093	8	77	AD.170	AD.250	RO	Phase 2	R1 sherds
8094	9	154	AD.170	AD.250	RO	Phase 2	Refired R14 dish, R1 dish
8097	34	596	AD.200	AD.270	RO	Phase 3	R14 flask, R73 dog-dish, R43 sherds
8099	7	122	AD.150	AD.200+	RO	Phase 2	R43 sherds
8102	2	26	AD.170	AD.250	RO	Phase 3	R1 jar sherds
8109	7	36	AD.50	AD.150	RO	Phase 1	B2 sherds
8117	13	142	AD.130	AD.200	RO	Phase 2	R14 'pie-dish' sherds
8128	7	27	AD.120	AD.250	RO	Phase 3	R14 sherds
8135	17	224	AD.170	AD.250	RO	Phase 3	R1 sherds
8137	16	48	AD.43	AD.90	RO	Phase 2	B2 jar, R42 Dr.18
8138	12	84	AD.70	AD.100	RO	Phase 2	R5 jar, B2 bead rim, lids
8145	1	388	AD.150	AD.270	RO	Phase 3	All one ?ESW pot
8151	11	43	AD.190	AD.270+	RO	Phase 3	ESW bowl, LR2 sherds
8155	9	37	AD.170	AD.250	RO	Phase 3	R14 bowl, R1 sherds
8159	1	3	50BC	AD.50	LIA; RO	Phase 1	B2 sherd
8170	18	496	AD.120	AD.170+	RO	Phase 2	Lid-seated B2 jar
8184	17	142	50BC	AD.50	LIA; RO	Phase 1	B2 sherds
8195	2	13	AD.50	AD.200	RO	Phase 2	Grogged jar sherds
8200	2	3	?	?	RO	Ph.2 ?	
8202	24	182	AD.170	AD.230	RO	Phase 3	R73 jar with resin adh.
8233	5	71	AD.50	AD.200	RO	Phase 2	
8234	13	154	AD.50	AD.100	RO	Phase 1	B2 jar sherds, inc. decor.
8252	1	12	?	?		?med.	Odd fabric, rim looks medieval
8256	2	6	50BC	AD.200	LIA; RO	Phase 1	B2 sherds
8281	101	1230	AD.170	AD.250	RO	Phase 3	Local sandy wares, R16 flak etc.
8283	65	360	AD.150	AD.200	RO	Phase 2/3	Local lid-seated jar
8285	3	40	AD.150	AD.200	RO	Phase 2/3	B2/ESW Ev. rim jar
8286	11	64	AD.100	AD.200	RO	Phase 2	R16 beaker
8288	26	333	AD.100	AD.200	RO	Phase 2	R16 closed + local wares
8289	33	532	AD.170	AD.230	RO	Phase 3	Same jar as 8283
8294	6	42	50BC	AD.50	LIA; RO	Phase 1	B2, B9.1 sherds
8296	2	2	AD.10	AD.70	LIA; RO	Phase 1	GB Whiteware
8297	51	632	AD.150	AD.270	RO	Phase 3	Local wares + ESW jar
8302	2	17	50BC	AD.50	LIA; RO	Phase 1	B2, B9.1 sherds
8303	26	1205	50BC	AD.200	LIA; RO	Phase 1	B2 sherds



Context	Count	Weight (g)	Early date	Late date	Period	Phase	Comments
8308	6	34	AD.43	AD.250	RO	Phase 2	
8309	4	7	50BC	AD.70	LIA; RO	Phase 1	BER15 sherds
8313	38	136	50BC	AD.50+	LIA; RO	Phase 1	B2,B9.1 sherds
8315	2	12	50BC	AD.50+	LIA; RO	Phase 1	B2 sherds
8322	50	897	AD.70	AD.130	RO	Phase 2	B2 fl. bowl
8323	3	35	AD.100	AD.190	RO	Phase 2	R16 dot-barbotine bkr.
8324	7	68	50BC	AD.200	RO	Phase 2	
8330	2	5	50BC	AD.50	LIA; RO	Phase 1	B3 sherds
8331	3	204	?	?	LIA; RO	Phase 1	
8332	26	1205	AD.50	AD.150	RO	Phase 2	B2 store, jar
8353	39	288	50BC	AD.50	LIA; RO	Phase 1	B2 jars
8357	1	71	50BC	AD.50+	LIA; RO	Phase 1	B2 storage jar
8364	6	33	AD.120	AD.200	RO	Phase 2	Inc R14 bowl
8390	9	257	50BC	AD.50	LIA; RO	Phase 1	B3 jar
8405	7	112	50BC	AD.50	LIA; RO	Phase 1	B2,B9.1 sherds
8415	7	62	AD.150	AD.250	RO	Phase 2/3	Unusual local flagon
8417	16	108	AD.120	AD.250	RO	Phase 2/3	Inc. R14 open form
8426	63	321	AD.180	AD.250	RO	Phase 3	Local jar with sealant
8440	3	7	50BC	AD.50	LIA; RO	Phase 1	B2.1,B3 sherds
8443	3	5	AD.43	AD.270	RO	Phase 2	R16 body sherds
8447	6	74	50BC	AD.250+	LIA; RO	Phase 2	Misc. grogged pot
8455	5	36	50BC	AD.250+	LIA; RO	Phase 1/2	Misc. grogged sherd
8459	1	9	50BC	AD.250+	LIA; RO	Phase 1/2	Misc. grogged sherd
8462	3	25	AD.43	AD.250+	RO	Phase 2	
8476	2	5	AD.43	AD.150	RO	Phase 2	Inc. Roman glazed
8477	9	64	AD.50	AD.100	RO	Phase 2	B2.1 beaker
8489	6	11	AD.43	AD.270	RO	Phase 2	R16 sherds
8493	6	25	AD.43	AD.270	RO	Phase 2	B2,B2.1,R17,R50 sherds
8495	63	352	AD.100	AD.190	RO	Phase 2	R16 flask ,R5,R17, etc.
8497	3	39	AD.120	AD.150	RO	Phase 2	R14 jar
8498	445	2347	AD.150	AD.270	RO	Phase 3	R14 dishes, R16 beaker,LR1.1,LR2 sherds
8499	72	527	AD.150	AD.250	RO	Phase 2/3	R14 dishes, R5, R16 etc.
8503	1	5	AD.43	AD.200	RO	Phase 2	
8507	4	11	50BC	AD.200	LIA; RO	Phase 1/2	
8510	10	234	50BC	AD.50	LIA; RO	Phase 1	B2.1, B9.1 sherds
8519	8	16	50BC	AD.50+	LIA; RO	Phase 1	B2, B9.1, BER15 sherds
8520	2	24	50BC	AD.50	LIA; RO	Phase 1	B9.1 sherds
8523	1	3	50BC	AD.50	LIA; RO	Phase 1	B2.1 flake
8527	2	16	AD.43	AD.270	RO	Phase 2	R16 sherds
8528	11	189	AD.70	AD.200	RO	Phase 2	R6.1 sherd
8530	10	92	AD.43	AD.200	RO	Phase 2	R16 sherds
8535	5	24	50BC	AD.50	LIA; RO	Phase 1	B2.1 bead rim
8539	28	209	AD.170	AD.250	RO	Phase 3	Inc. R16, R17, LR2 sherds
8550	3	99	50BC	AD.50+	LIA; RO	Phase 1	B2 sherds
8553	3	7	50BC	AD.50+	LIA; RO	Phase 1	B2.1 sherds
8556	1	5	AD.70	AD.200+	RO	Phase 1/2	
8560	2	11	50BC	AD.50	LIA; RO	Phase 1	B5 sherd
8569	36	494	AD.43	AD.100	RO	Phase 1/2	Most grogged but R17 present
8570	8	133	AD.120	AD.200	RO	Phase 2	R43 base, B2/R2 jar
8572	20	358	AD.120	AD.200	RO	Phase 2	R43, R16, B2/R1 sherds
8578	1	9	50BC	AD.50+	LIA; RO	Phase 1	B2 sherd
8579	3	458	AD.0	AD.50+	LIA; RO	Phase 1	B2.1 store jar
8580	4	80	50BC	AD.50	LIA; RO	Phase 1	B9.1 beaker
8584	3	52	50BC	AD.50	LIA; RO	Phase 1	B2 sherds
8595	3	29	AD.120	AD.180	RO	Phase 2	R16 beaker
8596	8	43	AD.50	AD.150	RO	Phase 2	B2 sherds

Context	Count	Weight (g)	Early date	Late date	Period	Phase	Comments
8597	2	10	AD.50	AD.150	RO	Phase 2	B2 sherds
8601	1	49	?	?		?	
8608	19	57	AD.43	AD.270	RO	Phase 2	R16 sherds etc.
8611	1	9	AD.150	AD.250	RO	Phase 2/3	R73 dog dish
8619	1	4	?	?		?	
8621	2	4	50BC	AD.50	LIA; RO	Phase 1	B2., B9.1 sherds
8623	31	194	AD.150	AD.250	RO	Phase 2/3	All one ?ESW jar
<b>TOTAL</b>	<b>1982</b>	<b>20987g</b>					

*Table 1.2: Quantification of all sieved pottery assemblages*

Context	Count	Weight	Early date	Late date	Period	Phase	Comments
8006	2	20	50BC	AD.150	LIA; RO	Phase 1/2	B2 sherds
8020	1	2	50BC	AD.150	LIA; RO	Phase 1/2	B2 sherds
8022	1	1	50BC	AD.150	LIA; RO	Phase 1/2	B2 sherds
8036	95	180	AD.150	AD.250	RO	Phase 2/3	R1 sherds, R73 flask
8050	14	79	AD.100	AD.200	RO	Phase 2	
8051	10	34	AD.42	AD.200	RO	Phase 2	
8097	66	741	AD.170	AD.250	RO	Phase 3	LR2, R73, etc, comminuted
8099	15	173	AD.120	AD.200	RO	Phase 2	R17 flagons
8137	4	8	AD.120	AD.200	RO	Phase 2	
8151	16	100	AD.190	AD.270	RO	Phase 3	R16 rouletted beaker
8155	12	52	AD.170	AD.250	RO	Phase 3	
8184	4	54	50BC	AD.50	LIA; RO	Phase 1	B2 sherds
8330	1	2	50BC	AD.50	LIA; RO	Phase 1	B3 sherd
8343	1	6	50BC	AD.50	LIA; RO	Phase 1	B2 sherd
8369	1	14	50BC	AD.50	LIA; RO	Phase 1	B9.1 sherd
8441	1	2	50BC	AD.50	LIA; RO	Phase 1	B9.3 sherd
8445	4	12	50BC	AD.50	LIA; RO	Phase 1	B2 sherds
8447	4	14	50BC	AD.250+	LIA; RO	Phase 1/2	
8498	15	25	AD.150	AD.270	RO	Phase 3	DR20
8499	11	13	AD.150	AD.250	RO	Phase 3	
8579	3	10	50BC	AD.50+	LIA; RO	Phase 1	
<b>TOTAL</b>	<b>281</b>	<b>1542g</b>					

*Table 1.3: Summary of quantification of pottery assemblages by phase*

Phase	Main locations	Spot-Date	Period	No. of contexts	Count	Weight (g)
Phase 1	Ditches 8624, 8626, 8628 and 8629	50BC-AD.50	LIA; RO	34	199	2165
Phase 1	Ditches 8630 and 8631	50BC-AD.100	LIA; RO	5	34	287
Phase 2	Pit 8062	AD.50-AD.100	RO	5	81	822
Phase 2	Pits 8573, 8531 and 8321. P.H.8593	AD.100-AD.200	RO	20	325	4675
Phase 2/3	Ditches 8033 and 8039	AD.100-AD.270	RO	24	120	1929
Phase 3	Pit 8037, Structure 8098, waterhole 8282	AD.150-AD.270	RO	31	1435	11849

Table 1.4: Spot-dating of excavated key pottery assemblages

Context	Count	Weight (g)	Period	Early date	Late date	Comments
<b>Ditch 8624</b>						
8353	39	288	LIA; RO	50BC	AD100	B2. 2 ev. rim jars, fresh
8184	4	42	LIA; RO	150BC	AD.100+	B2 jar
	13	100	RO	0	AD.50	B9.1 beaker + open form
8405	6	72	LIA; RO	150BC	AD.100+	B2. Closed
	1	40	LIA; RO	150BC	AD50	B9.1 Jar
<b>Ditch 8629</b>						
8313	36	130	LIA; RO	150BC	AD.50	B2, inc. necked jar
	2	6	LIA; RO	150BC	AD.50	B9.1 closed
8315	2	12	LIA; RO	150BC	AD.100+	B2. jar
<b>Ditch 8625</b>						
8200	1	2		Prehistoric		Calc. flint filler. Abraded
	1	1	RO	AD.43 +	AD.43+	R16 flake
8202	24	182	RO	AD.170	AD.230	R73. Monaghan 3H8 jar with sealant on rim
<b>Structure 8098 Construction</b>						
8097	4	88	RO	AD.150	AD.270	B2/ESW. jar
	3	82	RO	AD.150	AD.200	B2.1 jar, Monaghan 3H7 jar
	2	4	RO	AD.180	AD.250	R8? Jar
	4	100	RO	AD.120	AD.200	R14 open form, chamf. base
	4	58	RO	AD.43	AD.270	R16 closed
	1	8	RO	AD.120	AD.200	R43, DR33
	1	8	RO	AD.43	AD.270	R50, DR20 amphora, R75 base underfired
	1	10	RO	AD.180	AD.270	LR2.2 jar
	1	12	RO	C3rd	C3rd	LR2.3 jar, resin on rim
	11	148	RO	AD.200	AD.300+	LR2.3 jar
	1	10	RO	Late Roman	Late Roman	LR2.3Var. jar
	1	68	RO	AD170	AD300+	LR2.3.Oxidised, underfired
<b>Rectangular pit 8100 Fill</b>						
8099	1	60	LIA; RO	LIA	AD.200+	B2.1 jar
	3	34	RO	AD.150	AD.200	R17.2 Flagons
	1	4	RO	AD.43	AD.270	R50. DR20 Amphora
	1	24	RO	C3rd	C3rd	LR2.3 Var. local jar
<b>Rectangular pit 8136</b>						
8137	15	46	LIA; RO	150BC	AD100+	B2. Jars, fresh sherds
	1	2	RO	AD.43	AD.90	R42. Dr.18
8138	7	38	RO	AD.50	AD.200	B2. Lid
	3	32	LIA; RO	50BC	AD.70	B2.1. Bead-rim + lid
	1	12	LIA; RO	150BC	AD.50	B9.1. jar, abraded
	1	2	RO	AD.70	AD.175	R5. Closed
8170	18	496	RO	AD.120	AD.170	B2.1. Lid-seated jar. All
<b>Pit 8279</b>						
8281	1	6		Prehistoric		Calc flint + sand, abraded
	22	104	LIA; RO	LIA	AD.100+	B2. Jar
	9	60	LIA; RO	LIA	AD.100+	B2.1 jar
	1	6	LIA; RO	LIA	AD.100+	B5. Closed
	11	34	RO	AD.130	AD.190	R16. Poppy head beaker
	22	152	RO	AD.170	AD.250	R.16 flask
	2	2	RO	AD.43	AD.250	R17
	1	1	RO	AD.120	AD.200	R35. Beaker
	5	682				R50. DR20 Amphora
	12	88	RO	AD.70	AD.200	R73. Lid-seated jar
	5	30	RO	AD.150	AD.250	R73. Rolled over rim

Context	Count	Weight (g)	Period	Early date	Late date	Comments
	9	64	RO	C2nd?	C2nd?	R73. Closed
	1	1				Misc.
8296	2	2	LIA; RO	AD.30	AD.70	BER.5 Chips
8297	8	44	RO	AD.150	AD.270	B2. Jar
	9	134	RO	AD.150	AD.270	B2.1. Jars
	9	8	RO	AD.70	AD.175	R5. Jar
	3	8	RO	AD.70	AD.200	R6.3. Closed
	5	246	RO	AD.150	AD.270	R16 Jar
	1	2				R17
	2	4				R73. Jar
	12	152	RO	C2nd	C2nd	R73. Cse. Jar
	2	4	LIA; RO	LIA	AD.70	BER15. Salt container
<b>Fill of 8282 Waterhole</b>						
8283	33	150	LIA; RO	LIA	AD.100+	B2.
	6	96	LIA; RO	LIA	AD.100+	B2.1 Jar
	1	6	LIA; RO	LIA	AD.50	B9.1. Abraded
	10	10	RO	AD.70	AD.175	R5. Jar
	14	94	RO	AD.150	AD.200	R16. Jar
	1	4				R17.?
8294	5	30	LIA; RO	LIA	AD.100+	B2
	1	12	LIA; RO	LIA	AD.50	B9.2. Abraded
<b>Fill of Pit 8284</b>						
8285	3	40	RO	AD.150	AD.250+	B2. Resin on neck

*Table 1.5: Spot dating of sieved key pottery assemblages*

Context	Count	Weight (g)	Period	Early date	Late date	Comments
<b>Ditch 8624</b>						
8184	4	54	LIA; RO	50BC	AD.50	B2. Jar, fresh
<b>Structure 8098 Construction</b>						
8097	3	4	LIA; RO	150BC	AD.100+	B2. Abraded lumps
	8	64	LIA; RO	150BC	AD.100+	B2.1. Closed
	1	1	RO	AD.30	AD.80	BER5. Butt beaker
	3	4	LIA; RO	LIA	AD.70	BER15. Salt container
	4	10	RO	AD.43	AD.270	R16. Closed
	3	6				R73. Closed
	1	2	RO	AD.180	AD.270	LR2. Closed
	9	8				Misc. Heavily abraded
<b>Rectangular pit 8100 Fill</b>						
8099	5	26	LIA; RO	150BC	AD100+	B2. Necked jar
	3	4	RO	AD.120	AD.200	R43. Chips
	1	26	RO	AD.70	AD.300+	R73. Jar, fresh
<b>Rectangular pit 8136 Fill</b>						
8137	3	6	LIA; RO	150BC	AD100+	B2. Chips
	1	2	RO	AD.120	AD.200+	R14. Jar

*Table 1.6: Quantification of ceramic building materials by count and weight*

Context	Count	Weight (g)	Type	Period	Comments
8060	1	363	Tegula	Roman	Fabric 1
8097	1	225	Tegula	Roman	Fabric 1
8465	3	21	Peg tile	Med/Pmed	Fabric 2
8498	2	5	?	?	Small fragment
8498	1	390	Imbrex	Roman	Fabric 1
8499	1	170	Imbrex	Roman	Fabric 1



*Table 1.7: Probable/possible daub, by context*

Context	Count	Weight (g)	Comments
8016	7	1398	Some curved; faint wattle impressions
8026	90	1326	Burned; some wattle impressions?
8128	5	22	Post impression?
8192	8	199	One with lath impression?
8135	3	66	Burned; 1 flat face
8291	2	12	–
8368	1	8	Burned; 1 flat face
8388	1	101	Flat face
8514	5	2395	Some flat faces; post impression?
8484	2	14	One flat face
8523	15	323	Burned; abraded
8608	1	37	Burned; wattle impressions?
Total	140	5901	–

Table 1.8: Quantification of fired clay by count and weight

Context	Count	Weight (g)	Type	Comments
8006	10	153	Fired clay	Some burned
8008	4	18	Fired clay	Abraded fragments
8010	42	199	Fired clay	Abraded; burned
8012	95	1277	Fired clay	Abraded; burned
8015	55	1464	Fired clay	Some larger pieces with smooth faces; many burned
8016	7	1398	Fired clay	Daub, large pieces; 2 curved; faint wattle impressions
8020	14	534	Fired clay	Abraded; burned; 1 large piece with flattish face
8022	3	19	Fired clay	Abraded fragments; burned
8026	90	1326	Fired clay	Daub? Burned; some with wattle impressions?
8060	9	46	Fired clay	Burned
8083	3	6	Fired clay	Tiny abraded fragments
8085	3	10	Fired clay	Abraded
8097	18	206	Fired clay	Burned; larger pieces have smooth surfaces
8128	5	22	Fired clay	Daub? Possible post impression
8135	3	66	Fired clay	Daub? Burned; 1 flat face
8137	33	441	Fired clay	Some larger pieces with smooth faces; some tiny
8138	4	39	Fired clay	Abraded; burned
8151	12	40	Fired clay	Abraded fragments
8155	3	5	Fired clay	Abraded fragments
8184	19	451	Fired clay	Abraded; burned
8192	8	199	Fired clay	Abraded daub? 1 with possible lath impression
8204	2	28	Fired clay	Abraded; some CBM?
8231	4	71	Fired clay	Abraded; burned
8248	1	7	Fired clay	Abraded
8291	2	12	Fired clay	Daub?
8297	3	15	Fired clay	Abraded
8303	22	39	Fired clay	Abraded fragments
8308	1	8	Fired clay	Disintegrated
8313	2	7	Fired clay	Abraded fragments
8336	59	1150	Fired clay	Burned; includes 2 large pieces
8343	380	1848	Fired clay	Abraded; burned; some very fragmentary
8368	1	8	Fired clay	Daub? Burned; 1 flat face
8369	10	50	Fired clay	Abraded fragments; some burned
8381	2	28	Fired clay	Abraded; burned
8388	1	101	Fired clay	Daub? Flat face
8392	1	18	Fired clay	Abraded; burned
8426	5	29	Fired clay	Abraded; burned
8438	13	19	Fired clay	Abraded; burned
8450	1	4	Fired clay	Abraded fragment
8457	3	9	Fired clay	Abraded; burned
8476	2	7	Fired clay	Fragments; 1 vitrified
8477	6	16	Fired clay	Tiny fragments; burned
8484	2	14	Fired clay	Daub? 1 flat face
8493	3	11	Fired clay	Abraded
8495	2	7	Fired clay	Abraded
8497	4	49	Fired clay	Abraded
8498	18	481	Fired clay	Fragments; abraded; burned
8499	6	49	Fired clay	Fragments; some CBM?
8505	14	420	Fired clay	Abraded
8514	5	2395	Fired clay	1 very large piece; some flat faces; post impression?
8523	15	323	Fired clay	Daub? Burned; abraded
8526	5	9	Fired clay	Tiny fragments
8535	10	15	Fired clay	Tiny fragments

Context	Count	Weight (g)	Type	Comments
8540	2	48	Fired clay	Burned; includes 2 large pieces
8559	7	27	Fired clay	Tiny abraded fragments
8578	3	15	Fired clay	Abraded fragments
8579	12	56	Fired clay	Abraded fragments
8580	10	118	Fired clay	Abraded fragments; 1 with flat face
8584	2	10	Fired clay	Abraded
8601	22	330	Fired clay	1 with 2 flat faces at right angles; kiln wall fragment?
8608	1	37	Fired clay	Daub? Burned; possible wattle impressions
8611	3	28	Fired clay	Fragments; some burned

*Table 1.9: Counts and weights of Roman tile by type*

<b>Form</b>	<b>Count</b>	<b>Weight (grammes)</b>
<i>Tegula</i>	2	588
<i>Imbrex</i>	2	560
Total	4	<b>1148</b>

*Table 2.1: Summary composition of the flint assemblage by context*

Context	Count	Period	Comments
8010	2		Chips
8012	7		Chips
8015	6		5 chips, 1 flake
8017	1		1 flake
8020	1		Chip
8022	1		Chip
8026	1		1 flake
8048	1		1 flake
8102	1		1 flake
8128	2		2 flakes
8137	1		1 flake
8151	4		4 flakes
8155	1		1 flake
8195	1		1 flake
8231	1		1 flake
8234	1		1 flake
8281	1		1 flake
8313	2		2 flakes
8315	3	Neolithic?	3 flakes
8358	1		Chip
8364	2		2 flakes
8390	1	Neolithic?	1 flake
8415	2		2 flakes
8417	2		2 flakes
8440	2	Late Mesolithic/early Neolithic?	Fresh condition, 1 flake, 1 blade
8441	1		1 Blade-like flake
8443	1		1 flake
8445	2		1 flake, 1 single platform blade core (87 g)
8447	4		3 flakes, 1 chip
8450	1	Late Mesolithic/early Neolithic?	1 bipolar blade core
8457	3		2 flakes, 1 tested nodule
8484	1		1 irregular waste
8498	3		3 flakes
8499	1	Neolithic?	1 edge retouched flake
8519	8	Bronze Age?	6 flakes, 1 multi-platform flake core, 1 end scraper
8520	1	Neolithic?	1 flake
8579	5	Bronze Age?	4 flakes, 1 fragmentary flake core
8601	2		1 flake, 1 irregular waste
8604	1	Neolithic?	1 end and side scraper (on thin flake)
8611	1		1 flake

*Table 2.2: Quantification of burnt unworked flint*

Context	Count	Weight (g)	Comments
8006	24	105	
8008	7	19	
8010	11	93	
8012	9	34	
8015	20	91	
8017	3	30	
8020	9	30	
8022	10	20	
8026	28	56	
8036	2	8	
8083	2	3	
8099	2	26	
8137	2	9	
8151	3	15	
8192	2	2	
8313	1	6	
8315	2	216	
8322	3	11	
8343	21	14	
8422	1	46	
8445	2	64	
8471	12	51	
8493	2	27	
8495	3	18	
8498	44	1201	
8499	2	93	
8519	7	39	
8520	3	8	
8527	1	2	
8535	1	1	
8539	1	4	
8584	1	10	
8597	1	2	
8598	1	265	
8601	2	151	

*Table 2.3: Quantification of worked stone by context*

Context	SF No	Description	Notes	Lithology
8322		Fragment of upper rotary quern	Apparently flat grinding surface and sloping top. Less than 10% remaining	Hertfordshire Puddingstone
8097		Rotary quern fragment	Probably fragment from rotary quern although the edges are very square with one another - perhaps from reuse?	Hertfordshire Puddingstone
8426		Possible tessera	Small piece of granular ironstone which is square and which might have been a slightly incomplete tessera.	Ironstone
8137	802	Slab	Probably worked but not clear what for. Flattish thick slab, no clear evidence of function	Sandstone
8281	804	Possible sling shot	Sphere	Flint?
8098	805	Building stone?	Very large stone. Very smooth on main two faces and on one edge which also has a slight dimple in it. Probably a river boulder. Seems to have been made into roughly rectangular shape. Needs cleaning before looking at again.	fine grained quartz sandstone
8498	808	Unknown	Large squarish chunk of very fine grained quartzite. Has 2 smooth sides suggesting it's from a boulder and 1 smooth face. Possibly used for grinding but no particular evidence. Probably no polish but needs to be looked at with direct light.	Quartzite
8498	809	Probable upper stone of rotary quern	Extremely weathered quern - friable. The item has been almost completely degraded into many pieces but has been retrieved and kept together. Almost 1/4 of the stone remains.	Lava
8499	811	Probable rotary quern fragment	Slightly burnt, one worked surface and an edge.	Millstone Grit?/ German Triassic Sandstone?
8572	814	Lower stone of rotary quern	Very weathered stone so a whole section of the grinding surface has weathered away. Under surface is convex.	Greensand

*Table 2.4: Fragments of Lava (probably from rotary querns)*

Context	SF No	Description	Notes	Measurements	Lithology
8204		Quern fragments	Lava - very fragmentary but probably from a rotary quern. 6 small fragments. Largest bit shown in next column	45 x 55 x 20	Lava
8343		Rotary quern fragments	Lava - very weathered but probably from rotary querns originally. In final collapse of furnace structure and silting.		Lava
8417		Possible rotary quern fragment	Chunk of lava so may have been from rotary quern. Has glassy deposits on it which may suggest glass working on the site	40 x 35 x 25	Lava
8499		Probable rotary quern fragment	Two tiny fragments so no details		Lava
8520		Possible rotary quern fragments	8 very small weathered fragments so no details		Lava
8539		Possible rotary quern fragment	Tiny fragment of lava so unknown		Lava
8584		Possible rotary quern fragment	Tiny weathered piece of lava so unknown		Lava



*Table 2.5: Quantification of burnt unworked stone by context*

Context	Lithology	Fragments	Description	Notes
8184	Greensand	6	very weathered and slightly burnt fragments	some burnt.
8192	Greensand	7	burnt weathered chunks	
8312	Greensand	5	tiny fragments, possibly burnt	
8336	Greensand	78	very weathered and burnt sandstone	From the furnace super structure
8281	Quartzitic pebble	1	fire cracked large chunk	

Table 2.6: Quantification of unworked stone (includes ironstone)

Context	Lithology	Fragments	Description	Notes
8233	Mudstone	1	unworked	
8016	Ironstone	1	flattish chunk	Purple granular ironstone 75 x 60 x 15
8281	ironstone	1		25 x 20 x 6
8281	Greensand	1	small rounded chunk	25 x 15 x 11
8278	Greensand	13	very small fragments	Possibly fragments from pebbles as some seem to have an outer shell
8275	Greensand	68	small very weathered fragments	gritty greensand
8313	Greensand	8	weathered chunks	
8345	Pebble	1	unworked	
8138	Greensand	1	small weathered chunk	
8283	Greensand	2	small weathered chunks	
8297	chunk	1	UN-worked	
8026	pebbles	16	small fragments of pebbles	all UN-worked
8351	Slag not stone			
8369	Grey siltstone	1	UN-worked	
8281	pebble	2	UN-worked	
8050	Greensand	1	weathered chunk	
8364	Greensand	4	weathered chunks	
8040	Ironstone	1	For smelting?	UN-worked. Measures 60 x 40 x 20mm
8040	Greensand	1	small chunk	
8315	Greensand	2	weathered chunks	
8426	Greensand	1		30 x 30 x 6, brown slightly glauconitic sandstone
8459	Ironstone	1	Pebble chunk	
8484	Ironstone	1	Chunk	
8493	Ironstone	1	Granular	
8495	Ironstone	1		
8498	Ironstone	3	Granular	
8498	Ironstone	3		1 bit is probably slag
8498	Ironstone	1	Granular	55 x 45 x 15
8498	Sarsen	1		55 x 40 x 40, slightly angular
8498	Ironstone	1	Flattish chunk	90 x 60 x 20
8498	Sandstone	1	Chunk	45 x 35 x 30
8498	Ironstone	1	Granular	
8498	Gritty Greensand	1		Possibly Millstone Grit? But very small piece.
8498	Ironstone	6	Granular	small chunks
8498	Pot	7	Not stone	
8498	Burnt clay	3		
8498	White grainy stone	3	unworked	
8498	miscellaneous	9	weathered UN-worked stone	
8499	sandstone	1	angular	
8499	Ironstone	1		
8499	Miscellaneous	4	Very small weathered fragments	
8519	Gritty stone, (Greensand)	1		
8539	Ironstone	1		
8553	Possible greensand	1	Gritty stone probably weathered greensand	
8579	Ironstone	1	Small rounded chunk of granular ironstone	
8584	Quartzite	1	Angular chunk	90 x 60 x 45
8595	Unknown	1	Gritty white stone	
8597	Ironstone	8	Tiny weathered fragments	

*Table 3.1: Quantification of glass by context*

Context	SF number	Count	Weight (g)	Comments
8283	803	8	10	undiagnostic green-blue fragments of glass vessel

*Table 4.1: Quantification of metalwork by context*

Context	SF number	Material	Comments
8036		Fe	1 complete nail and 2 nail heads
8097	800	Fe	Nail
8097	801	Fe	Nail

*Table 5.1: Quantification of iron slag by context (all weights are in g; all measurements in mm.)*

Context	Sample No	Identification	Weight (g)	len. (mm)	br. (mm)	dep. (mm)	Comment
8498	861	hammerscale	none				
8006	800	cinder	8				
8006	800	dense	160				
8006	800	fired clay/hearth lining	150				
8006	800	hammerscale	14				flake & some sphere
8006	800	smithing hearth bottom	218	90	70	60	
8006	800	smithing hearth bottom	390	90	70	50	
8006	800	smithing hearth bottom	502	150	75	35	
8006	800	smithing hearth bottom	526	100	90	60	
8006	800	smithing hearth bottom	648	125	90	55	
8006	800	smithing hearth bottom	1246	140	115	60	may be furnace bottom
8006	800	undiagnostic	6940				very vesicular with charcoal
8006	800	vitrified hearth lining	286				
8008	80	fired clay/hearth lining	28				
8008	80	undiagnostic	714				tiny bits
8010	802	fired clay/hearth lining	324				
8010	802	furnace bottom	6620				
8010	802	hammerscale	1				flake & some spheres
8010	802	smithing hearth bottom	868	110	90	90	broken
8010	802	tap slag	2428				
8010	802	undiagnostic	2724				poss. smelting slag
8010	802	undiagnostic	6793				some poss. "slag pit" type
8012	803	cinder	2				
8012	803	fired clay/hearth lining	220				
8012	803	hammerscale	21				flake & some sphere
8012	803	tap slag	2072				
8012	803	undiagnostic	2				very magnetic
8012	803	undiagnostic	14				smithing slag?
8012	803	undiagnostic	98				runs
8012	803	undiagnostic	2142				
8012	803	vitrified hearth lining	744				
8012		cinder	4				
8012		furnace bottom	4880				or other smelting: very large chunks
8012		hearth lining	6				
8015	804	dense	144				

Context	Sample No	Identification	Weight (g)	len. (mm)	br. (mm)	dep. (mm)	Comment
8015	804	fired clay/hearth lining	733				
8015	804	hammerscale	none				
8015	804	iron stud	2				
8015	804	tap slag	2066				
8015	804	undiagnostic	176				smithing slag?
8015	804	undiagnostic	4590				
8017	806	hammerscale	5				flake & some spheres
8017	806	tap slag	20				
8017	806	undiagnostic	14				
8017	806	undiagnostic	14				runs
8020	805	fired clay/hearth lining	604				
8020	805	ore	6				requires geolog. i.d.
8020	805	roasted ore?	8				requires geolog. i.d.
8020	805	tap slag	1144				
8020	805	undiagnostic	1284				
8022	809	charcoal	1				
8022	809	cinder	84				
8022	809	fired clay/hearth lining	49				
8022	809	hammerscale	14				lots broken flake
8022	809	smithing hearth bottom	90	60	50	20	
8022	809	smithing hearth bottom	108	70	60	20	
8022	809	smithing hearth bottom	116	60	55	35	
8022	809	smithing hearth bottom	170	80	60	35	
8022	809	smithing hearth bottom	376	90	60	60	
8022	809	tap slag	714				
8022	809	undiagnostic	4				very magnetic - roasted ore?
8022	809	undiagnostic	518				poss. smithing slag
8022	809	undiagnostic	10282				
8022	809	vitified hearth lining	90				
8026	807	fired clay/hearth lining	979				
8026	807	hammerscale	4				flake & couple tiny spheres
8026	807	iron object	8				
8026	807	iron rod/nail	14				
8026	807	smithing hearth bottom	208	95	65	35	
8026	807	smithing hearth bottom	960	125	110	65	
8026	807	tap slag	3883				
8026	807	undiagnostic	86				runs
8026	807	undiagnostic	472				broken smithing hearth bottom?
8026	807	undiagnostic	4209				
8026	807	vitified hearth lining	408				

Context	Sample No	Identification	Weight (g)	len. (mm)	br. (mm)	dep. (mm)	Comment
8032	810	undiagnostic	24				
8050	812	tap slag	84				
8051	813	undiagnostic	4				
8051	813	undiagnostic	24				runs
8060	827	hammerscale	none				
8097	814	undiagnostic	34				
8099		undiagnostic	24				
8102	834	undiagnostic	16				
8117		undiagnostic	656				
8137		hammerscale	0				broken flake; not lot
8137		smithing hearth bottom	591	110	90	55	
8137		undiagnostic	364				
8137		vitified hearth lining	86				
8138		undiagnostic	13				
8143	829	hammerscale	none				
8155	819	hammerscale	none				
8163	818	fired clay/hearth lining	8				
8163	818	hammerscale	0				some broken flake
8163	818	iron rich cinder	4				
8163	818	smithing hearth bottom	122	70	45	20	
8163	818	undiagnostic	1158				vesicular
8184	816	fired clay/hearth lining	48				
8184	816	sample	0				a little broken hammerscale
8184	816	tap slag	1042				
8184	816	undiagnostic	90				
8184	816	undiagnostic	416				runs
8184	816	vitified hearth lining	10				
8184		cinder	44				
8184		ferruginous concretion	16				
8184		fired clay/hearth lining	492				
8184		smithing hearth bottom	268	80	55	40	
8184		smithing hearth bottom	340	120	80	40	
8184		tap slag	9				
8184		undiagnostic	296				
8184		vitified hearth lining	366				
8192	817	fired clay/hearth lining	84				
8192	817	fuel ash slag	84				
8192	817	hammerscale	none				
8192	817	iron	4				
8192	817	undiagnostic	26				
8192	817	undiagnostic	294				smithing hearth bottom frag?
8192	817	vitified hearth lining	148				

Context	Sample No	Identification	Weight (g)	len. (mm)	br. (mm)	dep. (mm)	Comment
8192		fired clay/hearth lining	220				
8192		undiagnostic	38				
8192		undiagnostic	66				iron rich slag
8192		undiagnostic	116				smithing slag?
8192		undiagnostic	272				smelting?
8205	823	undiagnostic	54				
8215	825	hammerscale	0				virtually none
8231		fired clay/hearth lining	104				
8231		undiagnostic	156				
8231		undiagnostic	648				smithing slag?
8243		fired clay/hearth lining	946				
8243		hammerscale	none				
8243		iron	6				
8243		smithing hearth bottom	234	70	60	35	
8243		smithing hearth bottom	1042	100	100	70	
8243		undiagnostic	32				smithing slag?
8243		undiagnostic	54				
8243		undiagnostic	560				runs
8248		cinder	16				
8248		undiagnostic	16				
8281	842	hammerscale	none				
8281		tap slag	852				
8309	836	fired clay/hearth lining	24				
8309	836	hammerscale	0				broken flake & 1 sphere
8309	836	undiagnostic	88				
8313	839	hammerscale	none				
8313	839	undiagnostic	24				
8313	839	undiagnostic	72				runs
8313		enamel frit	2				
8313		fired clay/hearth lining	74				
8313		undiagnostic	582				runny
8322	837	hammerscale	none				
8324	838	hammerscale	none				
8324	838	hammerscale	none				
8330	840	hammerscale	none				
8332	841	hammerscale	none				
8336	845	hammerscale	0				some broken flake
8336	845	undiagnostic	1598				heterogeneous
8336	845	vitified hearth lining	1788				
8336		cinder	98				
8336		fired clay/hearth lining	236				
8336		undiagnostic	116				runs
8336		undiagnostic	330				broken SHB/furnace bottom



Context	Sample No	Identification	Weight (g)	len. (mm)	br. (mm)	dep. (mm)	Comment
8336		vitrified hearth lining	820				
8337	846	hammerscale	0				1 sphere
8337	846	sample	0				charcoal & tiny silica runs
8337	846	sample	0				hammerscale: broken flake and 1 small sphere
8337	846	undiagnostic	278				
8337	846	undiagnostic	668				runs
8338		fired clay/hearth lining	46				
8338		undiagnostic	98				
8338		vitrified hearth lining	12				
8340		hammerscale	0				1 tiny sphere
8340		undiagnostic	182				
8340		undiagnostic	4930				large runs
8343	847	hammerscale	0				some flake & sphere, not lot
8343	847	undiagnostic	156				
8343		undiagnostic	34				
8343		undiagnostic	522				large runs
8345		tap slag	524				
8345		undiagnostic	676				smelting runs?
8345		undiagnostic	1002				furnace slag
8347		undiagnostic	260				runny
8347		undiagnostic	436				
8353		tap slag	326				
8353		undiagnostic	16				
8357		furnace bottom	1940	150	80	70	broken
8364		cinder	106				
8364		tap slag	74				
8364		undiagnostic	60				smithing slag?
8364		undiagnostic	150				
8369	849	hammerscale	0				some broken flake
8370	850	sample	0				a little hammerscale
8370		daub	40				
8370		fired clay/hearth lining	1				
8370		stone?	82				
8370		undiagnostic	38				smithing slag?
8370		undiagnostic	66				
8377	851	hammerscale	none				
8380	852	hammerscale	none				
8380		tap slag	206				
8380		undiagnostic	28				
8381	853	hammerscale	0				virtually none
8387	854	hammerscale	none				
8389		ferruginous concretion	220				
8405		furnace bottom	1836				110mm high
8405		smithing hearth bottom	292	100	60	45	

Context	Sample No	Identification	Weight (g)	len. (mm)	br. (mm)	dep. (mm)	Comment
8405		smithing hearth bottom	372	105	75	40	
8405		tap slag	176				
8405		undiagnostic	368				like smithing slag
8405		undiagnostic	1018				
8405		vitrified hearth lining	26				
8441	856	hammerscale	none				
8443	857	hammerscale	none				
8445	858	hammerscale	none				
8445		undiagnostic	576				
8447	959	undiagnostic	144				
8498		fired clay/hearth lining	88				
8498		smithing hearth bottom	244	80	60	45	
8498		undiagnostic	576				
8499	860	hammerscale	none				
8499		undiagnostic	1164				
8510		bloom fragment?	300				very magnetic iron lump
8510		dense	260				
8510		fired clay/hearth lining	268				grey: furnace lining
8510		furnace bottom	3708	190	160	110	dirty
8510		furnace bottom	9979	250	200	140	
8510		furnace bottom	14520	310	270	180	dirty
8510		hammerscale	0				some broken flake
8510		tap slag	568				
8510		undiagnostic	938				
8510		undiagnostic	946				furnace bottom fragment?
8510		undiagnostic	1354				prob. smelting with runs
8510		undiagnostic	2270				vesicular with charcoal
8510		vitrified hearth lining	152				
8514		ferruginous stone	190				
8514		furnace bottom	6395	190	180	130	
8514		smithing hearth bottom	314	60	60	40	
8514		smithing hearth bottom	620	110	80	55	
8514		undiagnostic	544				smithing slag?
8514		undiagnostic	1782				heterogeneous makeup
8514		vitrified hearth lining	874				
8519		undiagnostic	68				
8520		fired clay/hearth lining	10				
8520		undiagnostic	44				
8523		undiagnostic	228				
8528		undiagnostic	492				
8530		undiagnostic	13				smithing slag?
8535	862	hammerscale	none				
8539		fired clay/hearth lining	6				

Context	Sample No	Identification	Weight (g)	len. (mm)	br. (mm)	dep. (mm)	Comment
8539		tap slag	50				
8539		undiagnostic	90				
8560		furnace bottom	3500	230	190	120	dirty
8560		furnace bottom	5453	280	220	100	dirty
8563	863	hammerscale	none				
8579	865	hammerscale	none				
8580	864	sample	0				hammerscale flake
8580	864	sample	0				small runs

*Table 6.1. Percentage of identified fragments by context, feature interpretation and period*

Context	Interpretation	Period	% of identified fragments			Count	Weight (g)
			Cattle	Cattle ?	Horse?		
8137	Secondary fill of pit	LIA/ERO	100	0	0	1	15
8281	Upper fill of 8279	RO	100	0	0	1	8
8286	Post hole for structure	RO		100		1	33
8097	Basal fill of 8279	RO	0	0	100	69	31

Table 7.1: Quantification of charred plant remains by context

Sample	Context	Feature	Sub-group	Spot Date	Sample Volume (l)	Grain	Chaff	Weeds	Other	Charcoal	Notes
800	8006	Pit		LIA/RO	40					4	
801	8008	Hearth			12					3	
802	8010	Furnace			30					2	
803	8012	Furnace			40		1			3	
804	8015	Pit		RO	40					3	
		Furnace associated feature									
805	8020			LIA; ERO	25					3	
806	8017	Furnace			3					2	
807	8026	Furnace			40			1		3	Metal residue?
808	8023	Furnace			15					3	
809	8022	Furnace		LIA; ERO	30					2	metal residue
810	8032	Ditch		RO	40	1	2	1		1	Roots
811	8036	Pit		RO	40					1	
812	8051	Pit		RO	18	1	2	1		1	
813	8051	Pit		RO	20	1	1			1	Roots
814	8097	Pit		RO	40	2	3	2		2	Big roots
815	8099	Pit		RO	40	1				1	Big roots
816	8184	Ditch	8624	LIA	40	3	1			3	
817	8192	Ditch	8624		40	1	1			3	lots large roots
818	8163	Posthole	8402		20	2000+	4	2	1		freq. grain /chaff, few weeds!
819	8155	Pit		RO	30	2	3	1	1	3	
820	8197	Posthole	8403		10	1				1	
821	8198	Posthole	8403		9					1	
822	8204	Posthole	8402		10					2	
823	8205	Posthole	8402		10					2	
824	8215	Posthole	8403		40	4	3	1		2	
825	8215	Posthole	8403		4	1	1			1	
826	8216	Posthole	8403		10	1					
827	8060	Layer		RO	40	3	3	3		2	
828	8137	Pit		LIA; ERO	40	1	2	2		1	
829	8143	Pit			10	1	1				
834	8102	Pit	8625	LIA; ERO	20	1		1		2	

Sample	Context	Feature	Sub-group	Spot Date	Sample Volume (l)	Grain	Chaff	Weeds	Other	Charcoal	Notes
835	8303	Pit			16	1		1		2	
836	8309	Pit		LIA; ERO	20	2	1	2	1	2	
837	8322	Pit		RO	40	2	1	1		2	
838	8324	Pit		RO	40	1	2	1		2	
839	8313	Ditch	8629	LIA; ERO	40	2	2	1		2	
840	8330	Pit		LIA	20	1	1			1	
841	8332	pot		LIA; ERO	2	1	1			1	
842	8281	Layer		RO	37	1	1			2	
843	8281	Pit		RO	10	2	2	1		2	rachis + glumes
845	8336	Layer	8300		18					1	Roots
846	8337	Furnace	8300		15					4	All charcoal - large bits
847	8343	Furnace	8300	LIA; ERO	20					3	
848	8368	Posthole	8402		10					2	
849	8369	Posthole	8402	LIA	10					2	
850	8370	Posthole	8402		8					2	
851	8377	Posthole			9		1			1	
852	8380	Posthole	8402		10	2	1	1		1	
853	8381	Posthole	8402		7	3	1	1		1	
854	8387	Posthole	8403		15	2		1		1	
855	8338	Posthole	8300		10	2				1	
856	8441	Ditch	8630	MD	20	1	2	1		1	Roots
857	8443	Ditch	8630	LIA; ERO	20	1	3	1			Roots
858	8445	Ditch	8627	LIA	20	1	1	1		1	Roots
859	8447	Ditch	8627	LIA; ERO	40	1	2	1		1	
860	8499	Tree throw		RO	20	2	2	1		2	
861	8498	Tree throw		RO	20		1			2	
863	8563	Ditch	8626	LIA; ERO	20					3	
864	8580	Ditch	8628	LIA; ERO	20					3	
865	8579	Ditch	8628	LIA; ERO	40	1				2	
	8145	Ditch				1				1	Roots