Channel Tunnel Rail Link

London and Continental Railways

Oxford Wessex Archaeology Joint Venture

The late Iron Age and Roman settlement at Leda Cottages, Westwell, Kent

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ABSTRACT

As part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL), Oxford Archaeology (formerly Oxford Archaeological Unit) was commissioned to undertake a watching brief between Westwell Leacon and Tutt Hill in Kent. In the course of the watching brief, a concentration of archaeological features was exposed, west of Leda Cottages, Westwell, and subjected to detailed excavation. The excavation was carried out between July and September 2001, under the project management of Rail Link Engineering on behalf of Union Railways (South) Limited (a subsidiary of London and Continental Railways).

The features recorded were principally of Roman date. However, a small assemblage of redeposited worked flint, ranging in date from the Mesolithic to the Bronze Age, was also recovered, suggesting some prehistoric activity in the area.

Late pre-Roman Iron Age occupation was identified in the form of a rectilinear enclosure, with two apparent entrances. Two four-post structures, yielding evidence of crop processing, and a few pits were identified within the enclosure. Evidence for iron smelting activity was also tentatively attributed to this period, based on very limited evidence. One furnace was located within the main enclosure but the main cluster of features associated with this activity was situated 100 m to the north, in close proximity to the present-day stream. It was composed of four furnaces and three pits. Dating evidence associated with ironworking was very tenuous but quantities of slag found in fills of features of all phases indicate that this activity carried on throughout the three phases of occupation.

A second rectangular enclosure was dug, possibly in the second half of the 1st century AD, respecting the alignment of the earlier one, which was therefore probably still in use. There were also a few pits and postholes, a waterhole and a flint lined structure. A series of re-cuts, dated to the 2nd century AD obliterated most of the original ditches of this second enclosure. The last phase of occupation, from the second half of the 2nd century to AD 270, produced the largest assemblages of pottery. It was mostly represented by a series of discrete features including a rectangular clay structure, several possible rubbish pits and postholes and two waterholes. The site appears to have been abandoned around AD 250-270.

RÉSUMÉ

L'Oxford Archaeology fut chargé d'entreprendre une surveillance archéologique entre Westwell Leacon et Tutt Hill, dans le Kent, dans le cadre d'un programme de recherches archéologiques préventives de grande envergure, exécuté en avance sur la construction de la ligne ferroviaire du Tunnel sous la Manche (Channel Tunnel Rail Link -CTRL-).

Au cours de la surveillance archéologique, une concentration de structures archéologiques fut exposée, à l'ouest de Leda Cottages, Westwell (coordonnées géographiques OS NGR 596500 147450), et fit l'objet de fouilles approfondies. Les fouilles furent menées entre juillet et septembre 2001, sous la direction du maître d'oeuvre, Rail Link Engineering, pour le compte de Union Railways (South) Limited (une filiale de London and Continental Railways).

Les structures enregistrées étaient essentiellement d'époque romaine. Cependant, un petit assemblage de silex taillés hors contexte, datant du Mésolithique à l'âge du Bronze, fut découvert, suggérant une occupation préhistorique dans le secteur.

L'occupation de l'âge du Fer fut identifiée sous la forme d'une enceinte rectiligne, avec deux entrées apparentes. Deux structures sur quatre poteaux, qui ont livré des indices d'exploitation agricole, ainsi que quelques fosses furent mises au jour à l'intérieur de l'enceinte. Des signes d'activités métallurgiques de fonte du fer furent également attribués à cette période, bien que les indices de datation soient très restreints. Un seul fourneau se situait à l'intérieur de l'enceinte, tandis que le groupe principal associé à cette activité se trouvait à 100 m vers le nord, à proximité réduite du ruisseau actuel. Il comprenait quatre fourneaux et trois fosses. Les indices de datation associés avec le travail du fer étaient extrêmement minces, mais les quantités de scories, retrouvées dans le remplissage des structures de toutes périodes, montrent que cette activité fut poursuivit à travers les trois phases d'occupation du site.

Une seconde enceinte rectangulaire fut établis , peut-être dans la seconde moitié du 1er siècle ap. JC, son alignement respectant la première enceinte, qui, par conséquent, était probablement encore en utilisation. Quelques fosses et trous de poteaux ainsi qu'un point d'eau et une structure bordée de silex furent également mis en évidence. Une nouvelle série de fossés, datée du 2ème siècle de notre ère, fut creusée à travers cette seconde enceinte, oblitérant ainsi la majorité des fossés originaux de cette dernière. La dernière phase d'occupation, datant de la seconde moitié du 2ème siècle jusqu'à 270 ap. JC, produisit de larges lots de poterie. Elle était essentiellement représentée par un ensemble de faits archéologiques isolés, y compris une structure d'argile rectangulaire, plusieurs fosses à déchets, des trous de poteaux et deux points d'eau. Le site semble avoir été abandonné aux alentours de 250-270 de notre ère.

ZUSAMMENFASSUNG

Im Rahmen umfangreicher archäologischer Untersuchungen im Vorfeld des Baus der Bahnstrecke durch den Kanaltunnel (Channel Tunnel Rail Link, CTRL) wurde Oxford Archaeology (vormals Oxford Archaeological Unit) mit der Baustellenbeobachtung im Bereich zwischen Westwell Leacon und Tutt Hill in Kent beauftragt. Im Verlauf dieser Beobachtung wurde westlich der Leda Cottages in Westwell eine Häufung archäologischer

Strukturen freigelegt, die einer detaillierten Grabung unterzogen wurden, Die Grabung fand zwischen Juli und September 2001 im Auftrag von Union Railways (South) Limited (einer Tochtergesellschaft von London and Continental Railways) unter der Projektleitung von Rail Link Engineering statt.

Die Funde stammten vornehmlich aus der Römerzeit. Es wurde jedoch auch eine kleine Sammlung umgelagerter bearbeiteter Feuersteine gefunden, die vom Mesolithikum bis in die Bronzezeit reichten und auf prähistorische Aktivitäten in dem Gebiet hindeuteten.

Aus der späten vorrömischen Eisenzeit traten Siedlungsreste in Form einer geradlinigen Einhegung mit zwei erkennbaren Eingängen auf. Innerhalb dieser Einhegung wurden einige Gruben und zwei Vierpfostenbauten identifiziert, die Spuren von Getreideverarbeitung aufwiesen. Darüber hinaus wurden einige wenige Hinweise auf Eisenschmelzaktivitäten entdeckt, die vorsichtig in dieselbe Periode datiert wurden. Ein Schmelzofen stand in der zentralen Einhegung, während die größte Gruppe der Strukturen, die mit dieser Aktivität in Verbindung standen – vier Schmelzöfen und drei Gruben – 100 m weiter nördlich in der Nähe des heutigen Flusses zutage traten. Die auf eine Eisenverarbeitung hindeutenden Datierungsmerkmale waren sehr dürftig, allerdings ließen die in den Verfüllungen von Strukturen aus allen Phasen gefundenen Schlacken darauf schließen, dass in allen drei Besiedlungsphasen Eisen verarbeitet wurde.

Eine zweite rechteckige Einhegung stammte womöglich aus der zweiten Hälfte des 1. Jh. n. Chr. Da sie die Ausrichtung der früheren Anlage respektierte, ist anzunehmen, dass diese weiterhin genutzt wurde. Es gab einige Gruben und Pfostenlöcher, ein Wasserloch und eine mit Feuerstein ausgelegte Struktur. Mehrere Grabenerneuerungen, die ins 2. Jh. n. Chr. datiert wurden, zerstörten den Großteil der ursprünglichen Gräben der zweiten Einhegung. Die letzte Siedlungsphase, die von der zweiten Hälfte des 2. Jh. bis etwa 270 n. Chr. anhielt, förderte die umfangreichsten Keramikfunde zutage. Diese letzte Phase war überwiegend durch eine Reihe von Einzelmerkmalen gekennzeichnet, unter ihnen ein rechteckiger Lehmbau, mehrere mögliche Abfallgruben und Pfostenlöcher sowie zwei Wasserlöcher. Wie es scheint, wurde die Stätte um 250–270 n. Chr. aufgegeben.

ABSTRACTO

Como parte de un largo programa de investigación arqueológica previo a la construcción del Channel Tunnel Rail Link (CTRL), Oxford Archaeology (conocido antes como Oxford Archaeologial Unit) fue el encargado de realizar el seguimiento de obra entre Westwell Leacon y Tutt Hill en Kent. En el curso de dicho seguimiento, se identificó una concentración de estructuras arqueológicas al oeste de Leda Cottages, Westwell, al que siguió una excavación en detalle. La excavación se desarrolló durante los meses de Julio y Septiembre de

2001, bajo la dirección de Rail Link Engineering para Union Railways (South) Limited (parte de London and Continental Railways Limited).

Las estructuras documentadas resultaron principalmente de época romana. Sin embargo, una concentración reducida de sílex trabajado fue recuperada, con datación del Mesolítico a la Edad de Bronce, sugiriendo por tanto cierta actividad prehistórica en la zona.

Ocupación pre-romana del Final de al Edad del Hierro fue identificada en forma de un recinto rectilíneo con dos posibles entradas. Dos estructuras de cuatro postes, evidenciando el procesamiento de la cosecha y algunos hoyos, fueron identificados en el interior del cercado. Basada en muy limitada evidencia, la presencia de fundición de hierro se atribuye a este periodo. Un horno estaba localizado dentro del cerco principal pero la mayoría de las estructuras asociadas con esta actividad se hallaban 100 metros al norte, próximas al arroyo actual. Éstas estaban compuestas de cuatro hornos y tres fosas. Dataciones asociadas con la fundición del hierro son muy tenues pero la abundancia de escoria encontrada en el relleno de estructuras de todos los periodos indica que esta actividad se desarrolló durante las tres fases de ocupación.

Un segundo recinto rectangular fue excavado, posiblemente en la segunda mitad del siglo I d.C., respetando la alineación del anterior que posiblemente seguía en uso. Se localizaron también algunas fosas, huellas de poste, un pozo y una estructura con un alineamiento de sílex. Una serie de recortes, con datación del siglo II d.C. destruyó casi todas las zanjas originales de este segundo cercado. La última fase de ocupación, a partir de la segunda mitad del siglo II d.C. hasta el 270 d.C., creó la mayor colección de cerámica. Ésta estaba mayoritariamente representada por una serie de estructuras entre las que se incluye una rectangular de arcilla, varios posibles basureros y huellas de poste y dos pozos. El yacimiento parece haber sido abandonado hacia el 250-270 d.C.

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The investigations at Leda Cottages were undertaken principally by staff from Oxford Archaeology (OA), with support and overall management framework during the post-excavation phase provided by the Oxford Wessex Archaeology Joint Venture (OWA). The work was supervised by an archaeological team from Rail Link Engineering (RLE), on behalf of the employer, London and Continental Railways.

The author would like to thank all those whose efforts contributed to the success of the excavation: The fieldwork was supervised by Brigitte Buss and Mike Sims, and managed by Stuart Foreman. Valerie Diez prepared the post-excavation assessment report. The full field team and specialist contributors to the assessment report are credited in the main project acknowledgements in the digital archive (ADS 2006).

The following specialists contributed to this report: Malcolm Lyne (late Iron Age and Roman pottery), Rebecca Devaney (lithics), Ruth Shaffrey (worked stone), Lynn Keys (iron slag) and Dana Challinor (charcoal). Anne Stewardson and Laura Kirby prepared the illustrations. The abstract was translated by Mercedes Planas (Spanish), Gerlinde Krug (German) and Valerie Diez (French).

The report was edited by Paul Booth (Roman period team leader). Julie Gardiner was the project senior editor.

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1 INTRODUCTION

1.1 Project Background

The site at Leda Cottages, Westwell, Kent (OS NGR 596500 147450) was discovered and excavated as part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL). CTRL was built by London & Continental Railways in association with Railtrack Group plc. The project was authorised by Parliament with the passage of the CTRL Act, 1996. The high-speed line runs for 109 km (68 miles) between St Pancras Station in London and the Channel Tunnel and was built in two sections. Section 1 lies entirely within Kent and runs from Fawkham Junction (Gravesham) to Folkestone. The work was project managed by Rail Link Engineering (RLE).

Oxford Archaeology was commissioned by Union Railways (South) Limited (URS) to monitor all earthworks within CTRL Project Area 430, which extended for 14.5 km from East of Lenham Heath to Ashford. Following the discovery of extensive significant remains *c* 5 km north-west of Ashford, the Leda Cottages site was subject to investigation. The location of the site is shown on Figure 1 and the details of the archaeological works are given in Table 1.

Table 1: Fieldwork Events

Fieldwork Event Name	Type	Fieldwork Event Code	Contractor	Dates of Fieldwork
Leda Cottages	Watching Brief General	ARC 430 01/83+200	OAU	21/07/2001-15/09/2001
Westwell Leacon and Leda Cottages	Watching Brief General	ARC 430/82+000-83+800	OAU	04/03/1999-20/04/1999

The total area investigated in which archaeological features were visible was *c* 2.88 ha. The adjacent sections of the CTRL trace were stripped under variable watching brief conditions, but with a high degree of confidence that significant concentrations of late Iron Age or Roman features would have been identified, if present. Excavation of the main site was undertaken over a period of 3 months, from July to September 2001.

1.2 Geology and Topography

The Leda Cottages site falls within the Wealden Greensand landscape zone (Fig. 1). The site lies on the Folkestone Beds, bordered to the east by Gault Clays. The geological substrate is overlain by sandy silt soils. The site lies approximately mid-way between the North Downs escarpment (1.4km to the north-east), and the River Great Stour (1.6 km to the south-west).

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.

The site was under arable cultivation before the CTRL works started. Although intensive agricultural land-use has resulted in significant loss of field boundaries, some small areas of historic woodland have survived.

1.3 Archaeological and Historical Background

The site is located in a geological zone, the Lower Greensand, which appears from past studies to have been relatively sparsely populated in the Roman period compared to other parts of Kent. However, recent excavations, including the CTRL works, have shown this to reflect rather a lack of research than a genuine absence.

The site of Leda Cottages was on the edge of the Low Weald, with access to two main roads in the Roman period, the first, to the east of the site, connecting Canterbury to the iron working sites of the Weald, and the second, coming from Maidstone, running NW-SE to the south of the site (Aldridge 1995). This joined the Weald to Canterbury road, some distance to the west of Westhawk Farm, from which site the route continued in a south-easterly direction, to Lympne. The recently discovered roadside settlement of Westhawk Farm itself (Booth *et al*. in prep.) lies roughly 7 km south-east of the present site. This site revealed important evidence for iron production, both smelting and smithing, but also agricultural activities and a small cemetery area. 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. Westhawk Farm is the largest known Roman settlement in the vicinity of Leda Cottages. Canterbury (*Durovernum Cantiacorum*), situated *c* 20 km north-east of the site, was the cantonal capital, an already existing Belgic settlement which developed into a Roman town.

Leda Cottages was located about 15 km north-east of the Weald, focus of the most important iron-making area in Roman Britain. About eighty ironworking sites have been definitely dated to the Roman period so far (Hodgkinson 1999). The sites fall into two main groups, a western group in the High Weald and an eastern group near the coast. The latter seems to have had a direct connection with the *Classis Britannica,* although its precise role is not properly understood (Drewett *et al*. 1988, 237-40).

Excavation in advance of the CTRL in the immediate vicinity of the site has revealed late Iron Age and Roman activity in the form of one major site and some isolated features identified in the course of the watching brief. Excavations at Beechbrook Wood (Brady 2006), *c* 3 km to the south-east of Leda Cottages, have revealed extensive remains of a multi

period nature, suggesting that the site had seen periods of use from the late Mesolithic through to the Roman period. Two foci of activity were identified in the late Iron Age and early Roman periods. The first one included a concentric enclosure with associated causeway, possibly for pastoral or agricultural purpose and various discrete features, including four-post structures. The second area comprised two industrial plots, suggestive of metalworking and trade. The site appears to have ceased to be used around AD 250.

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. Museum of London Archaeological Services (MoLAS) excavated trial trenches at the back of Leda Cottages (ARC LED98) (URS 1998a) which produced a solitary post-medieval pit.

Work west of Leacon Lane (ARC LLA98) *c* 1.5 km to the west of the site, 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. Two badly truncated late Iron Age pits were recorded east of Pluckley Road during the watching brief (ARC 430/99) (URS 2000a).

Substantial evidence of late Iron Age and Roman occupation has been recovered elsewhere along the CTRL route. A rural agricultural settlement was identified at Bower Road, *c* 5 km east of Westhawk Farm, revealing a main sequence of occupation dated between the first half of the 2nd century to the late 3rd century AD (Diez 2006). Major excavations at Thurnham Villa in the Medway valley, *c* 19 km north-west of Leda Cottages, have revealed a continuous sequence of occupation from the late Iron Age to the late 4th or early 5th century AD (Lawrence 2006).

2 AIMS

The aim of this report is to present synthesised data at an interpretative scale that can be easily assimilated into complementary studies. This synthetic report is supported by the fieldwork and research archive which is freely available as a web-based digital archive.

In support of the CTRL Project Monograph (Booth *et al.* 2006), the Leda Cottages report integrates key assemblages and stratigraphic data into a site sequence secured on key dating evidence from artefact groups. The report includes a discursive narrative describing the sequence of activity and reasoning evidence (URS 2003a, 15-16).

The updated research aims specific to Leda Cottages include refining the chronology and the understanding of the site's structures, activity areas and economic base, but also comparing Leda Cottages development with that of other sites in the vicinity, and in particular to the small town of Westhawk Farm (URS 2003b, 19).

3 METHODS

The site was stripped by a 360-degree excavator. Following discovery of the site during the scheme-wide watching brief, the main area was excavated (Fig. 2). A cluster of metalworking activity was also excavated at the base of the slope *c* 100 m north-west of the main site. A further four late Iron Age pits were identified in the course of the general watching brief, 120 m south-east of the main area. All fieldwork, from site stripping to recording and sampling, was conducted by Oxford Archaeology (OA) in accordance with the Written Scheme of Investigation (URS 1998b) prepared by the Project Manager, Rail Link Engineering (RLE).

The assessment report was produced by OA in accordance with the specification produced by RLE (URS 2000). All method statements followed national guidelines and were agreed in consultation with English Heritage and Kent County Council (KCC) on behalf of the Local Planning Authority.

The post-excavation analysis and reporting were carried out by Oxford Wessex Archaeology Joint Venture (OWAJV) following the methodology set out by the Updated Project Design for archaeological analysis and publication (URS 2003b).

4 RESULTS

4.1 Phase Summary

The sequence of phases on the site was defined initially on the basis of the stratigraphic record, and their dating depends almost entirely upon ceramic evidence. In most cases pottery evidence alone was used as the basis for assigning discrete features to specific phases. The fills of all archaeological features were of a similar nature, mainly sandy silt, and in most cases did not help in the site's phasing. For this reason they are discussed in the narrative only when needed for the understanding of the site sequence. The following phases were recorded on site:

- Late pre-Roman Iron Age to early Roman (50 BC-AD 70): A rectangular enclosure was established during this phase, containing two four-post structures, with evidence of crop processing, and a few pits. Metalworking activity was identified in the form of a cluster of furnaces *c* 100 m from the enclosure.

- Early Roman (AD 50-150): A second enclosure mirroring the first one was excavated. Re-cuts through boundary ditches of the first enclosure and partitions within it may also belong to this phase. A number of discrete features were identified, including a few pits, a waterhole and a flint lined structure. A large quantity of slag, found in the fills of various features, suggests that ironworking was still an important element of the site economy.

- Middle Roman (AD 150-270): Re-cuts through the boundary ditches of the second enclosure seem to have mostly obscured the original ditches of the previous phase. Discrete features include various pits and postholes, a clay structure and two waterholes. One furnace has been dated to this phase.

The following table summarises the quantities and percentages of pottery per phase.

Table 2: General quantification of pottery by phase

Phase	Count	Weight (g)	Count %	Weight %
Unphased	61	253	3.3	1.2
Late Pre-Roman Iron Age to early Roman	123	1814	6.5	8.6
Early Roman	293	3865	15.6	18.4
Middle Roman	1405	15094	74.6	71.8
Total	***1882***	***21026***	***100***	***100***

4.2 Hunter-gatherers and Early Agriculturalists- Mesolithic to Late pre-Roman Iron Age (*c* 13,000 uncal bc - *c* 300 BC)

No features of earlier prehistoric date were identified at Leda Cottages, but a small assemblage of redeposited worked flint was retrieved in the course of the excavation. This material, 105 pieces, is mainly dated from the late Neolithic to the Bronze Age (Devaney 2006). The condition of the flint (60% of the pieces exhibit slight to moderate damage) is consistent with the redeposited nature of the material.

No trace of early or middle Iron Age activity was identified.

4.3 Towns and their Rural Landscapes I - The Later pre-Roman Iron Age and Romano-British Landscapes II (*c* 300 BC to *c* AD 500)

4.3.1 Late Pre Roman Iron Age to early Roman (50 BC to AD 70)

The enclosure

A large sub-rectangular enclosure was established in the late pre-Roman Iron Age, possibly around 50 BC (Fig. 3). Three main ditches (8624, 8626 and 8628) delineated this enclosure, which measured *c* 58 m SE-NW by *c* 56 m SW-NE. The boundary ditches had a V-shaped profile, in some cases with a flat base (8624 and 8626). Their width varied between 0.65 and 1.5 m and their depth was typically between 0.4 and 0.7 m. Two entrances were identified within this enclosure, one to the north-west, in the gap between ditches 8624 and 8626, and one to the WSW, between ditches 8626 and 8628.

The three enclosure ditches produced a total of 111 sherds of pottery (1658 g) mainly in coarse grog-tempered fabrics (Fig. 4) but also including glauconitic fabrics from the Maidstone area and a few fragments in sandy black fabric from the Folkestone area. Five fragments from briquetage salt containers were also recovered (Lyne 2006).

A small number of features within the enclosure produced sufficient dating evidence to be securely associated with this phase. Two four-post structures were identified (8402, 8403) in the north-east corner. The internal dimensions of structure 8402 were *c* 1.90 by 1.50 m, with posthole diameters varying between 0.60 and 0.86 m and a typical depth of 0.35 m. The internal dimensions of structure 8403 were *c* 1.90 by 1.75 m, with posthole diameters between 0.45 and 0.75 m and a typical depth of 0.21 m. The dating evidence from these structures is very tenuous, although stratigraphic relationships with internal ditches belonging to the following phase (ditch 8404 - visible on Fig. 7- cut 8402) indicated that these four-post structures were likely to have been associated with the late Iron Age enclosure. Structure 8402 produced only one sherd (14 g) of pottery, dated to AD 70-175, probably related to the destruction of the four-post structure. Both four-post structures produced the largest assemblages of charred seeds and chaff from the site (over 2000 grains were recovered from 8403). The large deposits of cereal grain and chaff, and the consistency of the presence of spelt wheat, 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 (URS 2003b). In the case of the four-post structures, this supports the traditional interpretation of these features as granaries. In addition, the excavation of structure 8402 produced some small weathered lava quern fragments. Both structures were also associated with fired clay and possible daub fragments.

A few other features situated in the enclosure have been attributed to this phase, including pits 8301, 8310 and 8566 and postholes 8303, 8534 and 8551. None of these features had any distinctive characteristics to allow further interpretation of their function. Most of the dating evidence was fairly tenuous (there were from 2 to 5 sherds per feature) but the features were phased on the basis of the sherds' condition, which was fresh and unabraded.

Four pits (1, 5, 9 and 10) were recorded in the course of the general watching brief, 115 m south-west of the enclosure (Fig. 2). They were sub-circular in plan with a maximum length of 1.60 m and were 0.20-0.30 m deep. The four pits produced a total of 60 sherds of pottery (787 g), dated to the late Iron Age/early Roman period. They may have been associated with the Leda Cottages enclosure.

The southern end of the enclosure was either open or has not survived. No other features were spotted during stripping between the enclosure and the four pits, suggesting they may have been lost to ploughing or to modern disturbance. However the depth of sections (0.50 m in average) excavated at the southern end of ditches 8624 and 8628 does not

suggest that this was the case. It is possible that the enclosure was not bounded to the south by a ditch but by a natural feature such as a wood. The ancient woodland of Leacon Wood, Charing, is situated only *c* 250 m north-east of the site, although, as it is often the case with such landscape features, it is extremely difficult to demonstrate its antiquity. Its identification as a historic woodland is based on its appearance on the first edition 1" OS map, dating from 1819 (URL 1994).

Metalworking activities

Evidence of ironworking activities was recorded on the site, in the shape of one smelting furnace situated within the late Iron Age enclosure and a cluster of seven features, located 100 m north-west of the main site, down the slope. This activity is likely to have started during this phase, but the dating evidence is very slight and the phasing of the relevant features is rather tentative.

Furnace 8300 (Fig. 5), just inside the east side of the enclosure was roughly oval with a moderately sloping side to the north, a steeper southern side and a flat base, measuring 1.1 x 1.4 m, with a depth of 0.27 m. The discoloured surrounding earth showed evidence of being subjected to high temperatures and many fragments of slag and burnt clay were visible on the surface. This iron smelting furnace did not produce any dating evidence but was likely to have been contemporary with the enclosure on the basis of its spatial relationship with ditch 8624.

The main cluster of ironworking features (Fig. 6) was composed of four smelting furnaces (8009, 8648, 8649 and 8650), two pits (8007 and 8019) and a thin spread of charcoal (8030). Circular furnace pit 8009 had concave sides and base, a diameter of 0.35 m and was 0.35 m deep. It contained 2 non-abraded pottery sherds (20 g) dated to 50 BC-AD 70. Furnace 8650 had a similar profile, a diameter of 0.50 m and a depth of 0.13 m. Furnace 8648 had a circular pit with a steep profile on the eastern side, moderate on the western side and a concave base, surrounded on its western edge by an area of burnt earth. Its diameter was 1.3 m and its depth was 0.35 m. Furnace 8649 was similar in profile, steeply sloping to the north-west and moderately sloping to the south-east, with a concave base, a diameter of 2.10 m and a depth of 0.40 m. One phase of re-cut was recorded within furnace 8649 and it was subsequently truncated by the later furnace 8651, which contained 3 small sherds (8 g) of pottery dated to AD 175-270. It is therefore likely that furnace 8649 was in use prior to AD 175.

Pit 8007 was sub-circular with vertical sides and a flat base, measuring 0.80 by 0.72 m and 0.16 m deep. No evidence of *in situ* burning was visible in the ground and its single fill, a dump deposit of smelting debris, suggests that it may have been a rubbish pit. Pit 8019 was an elongated, irregular shaped feature with steep sides and a flat base with *in situ* burning, measuring 4.40 by 2.70 m, with a depth of 0.22 m. Traditional methods for making charcoal

utilise shallow pits with layers of straw/grass or clamps of roundwood to shut out the air (Challinor 2006). Therefore the function of pit 8019 could possibly have been to make charcoal as fuel for the furnaces, which are located in close proximity.

The location of this cluster of ironworking activity, away from the main area of the site, was probably to be close to supplies of water and wood, both essentials in the smelting process. Similar spatial distribution, with the industrial area away from the settlement, has been observed on several of the Wealden sites, such as Beauport Park and Bardown (Cleere and Crossley 1995, 70), although these sites represent much larger establishments than Leda Cottages.

There was a significant absence of iron ore from the site. No mining pits, indicating the ore source, were identified on site. Neither was there any evidence for roasting in preparation for smelting. This suggests that both mining and roasting of iron ore was carried out elsewhere.

Two types of bloomery furnace appear to be present on the site, identified by their distinctive profiles. Furnace 8650 had a 'bowl' shaped profile, while furnaces 8648, 8649, 8651 and 8300 were larger with one steep side and one moderately sloping side. As is often the case with furnaces, there are no intact structural remains, making the interpretation more difficult. However, from the surviving profile, 8650 appears to correspond to the simplest form, the 'bowl furnace'. This was a simple hollow in the ground, lined with clay and filled with ore and fuel (Cleere 1971, 205). The four other furnaces have a wider diameter and a different profile, probably comparable with the 'shaft furnace' type (or slag tapping furnace) or the non-slag-tapping furnace. The shaft furnace type included a clay shaft (which has not survived) with an aperture at the base or the side to allow the liquid slag to flow out into a shallow depression (Cleere and Crossley 1995). The non-slag-tapping furnace is similar to this, except that the slag collects in a pit below the structure, rather than being tapped out of the furnace. This latter type was once thought to have appeared in the early Anglo-Saxon period but has now been identified on many late Iron age/early Roman sites. The presence of clay structures was indicated only by the quantities of fired clay present within the fills.

The smelting slag types recovered from the site are consistent with the presence of all three types of furnace. Furnace bottoms are generally interpreted as the product of bowl furnaces and tap slags are associated with shaft furnaces, while slag blocks represent waste from non-slag-tapping furnaces (see Table 3 below). Bowl furnaces have been traditionally interpreted as pre-Roman while slag-tapping furnaces were thought to have appeared with the Roman conquest (Keys and Shaffrey 2006). This belief, however, has been progressively challenged (Clough 1985) and it seems that the furnace type may be influenced by the scale of the activity and the requirement of the site rather than representing a chronological variation.

The slag analysis also indicates that secondary smithing was carried out on site. Evidence for iron smithing included bulk slags in the form of smithing hearth bottoms and micro-slags in the form of flake hammerscale. Smithing hearth bottoms are characteristics of both primary and secondary smithing, whereas, flake hammerscales are produced during secondary smithing (hot working by a smith using a hammer). The site seems to lack evidence for primary smithing, usually identified by the presence of spherical hammerscale, produced by the hot working of the bloom to remove excess slag. Primary smithing is often carried out almost immediately after the smelting process to remove residual slag before transportation. The evidence from Leda Cottages suggests that iron blooms were being taken away immediately after removal from the smelting furnaces to be worked on somewhere else. Similar evidence has been observed on several other late Iron Age/early Roman sites in the Kent and north Weald area, such as the neighbouring site at Beechbrook Wood (Keys and Shaffrey 2006).

Smithing hearth bottoms, when removed from the earth, were usually deposited in the nearest ditch or pit while flake hammerscale often remained in the area around the anvil. A concentration of such debris can therefore help to identify the location of the smithy. Unfortunately, the pattern of hammerscale distribution at Leda Cottages did not indicate any concentrations outside the furnace area and the debris appeared to be scattered around the site.

The following table (Table 3) presents quantification by type of ironworking debris recovered from the furnace cluster and from structure 8300. The total amount of metalworking waste from furnaces and associated features represents 88534 g or 39.7% of the 225000 g forming the overall total of ironworking debris from the whole site.

Table 3: Quantities (g) and types of ironworking debris present in smelting furnaces and associated features

Type	**8007**	**8009**	**8019**	**8648**	**8649**	**8650**	**8651**	**8300**
Tap slag				2072	4597	2428	2086	
Smithing hearth bottom	3530				2028	868		
Furnace bottom				4880		6620		
Undiagnostic slag	6940	714	2428	2256	15571	9517	4794	9840
Fired clay/hearth lining or vitrified hearth lining	436	28	604	970	1517	324	733	2902
Cinder	8			6	84			98
Roasted ore			14					
Hammerscale	14			21	18	1		1
TOTAL	*10914*	*742*	*3046*	*9805*	*23815*	*19758*	*7613*	*12841*

4.3.2 Early Roman (AD 50 to AD 150)

The southern enclosure

Evidence of activity in the decades following the Roman Conquest included the establishment of internal partitions (8629, 8404) within the late Iron Age enclosure (Fig. 7). The earliest appeared to be 8629, a small ditch consisting of two NE-SW aligned segments, the first running for 18.5 m and the second 6 m long after a gap of 11 m. Its profile consisted of gradually sloping sides with a concave base, a depth of 0.18 m and an irregular width varying between 0.38 m and 0.70 m. It is possible that this ditch represented the setting for a fence line, which could explain its irregularity, but no evidence of stakeholes or post-pipes was observed. Ditch 8629 was cut at its north-eastern extremity by another partition ditch, 8404, perpendicular to the former, with a similar profile, a width varying between 0.37 and 0.70 m and a depth between 0.05 and 0.28 m. Both ditches are likely to have been dug within a short space of time, and were possibly associated with the final use of the enclosure. The ceramic assemblages from both ditches are rather mixed with 40 late Iron Age sherds (134 g), 4 undiagnostic Roman sherds (20 g) and 4 early Roman sherds (16 g). The dating tends towards a late Iron Age date but as 8404 cut both enclosure ditch 8624 and four-post structure 8402, it was likely to have been dug around the time of the Conquest.

The enclosure boundary ditches (8624, 8626 and 8628) did not yield any secure dating evidence later than AD 70. A substantial quantity of slag (40868 g) was recovered in the fills of the three ditches, suggesting they were used for dumping ironworking waste. The presence of ironworking debris in large quantities within the boundary ditches also supports the interpretation of this activity as being contemporary with the enclosure.

A series of re-cuts (8639, 8666, 8667 and 8668) was recorded through ditches 8626 and 8628, forming the south-western side of the enclosure (section 929, Fig. 3). Ditch re-cut 8639 produced 11 pottery sherds (238 g) and re-cut 8668 contained a further 5 sherds (126 g). The dating of this material points towards a date around the time of the Roman Conquest. Two postholes (8609, 8652) may have been associated with re-cuts 8666 and 8667.

The absence of evidence for re-cuts in the remaining enclosure boundaries and the lack of dating evidence after AD 70 suggest that these ditches were mostly filled by this time. This does not mean, however, that they had fallen into disuse as boundaries.

The northern enclosure

A new enclosure, situated to the north-west of the previous one (Fig. 7), was established probably around the second half of the 1st century AD. Evidence for the original shape and extent of this northern enclosure is very slight, as subsequent re-cuts seem to have mostly obscured its earlier boundaries. Two ditches have been attributed to the early Roman phase,

8627 formed the south-western half of its south-eastern boundary and 8638 was a small surviving L-shaped segment situated at the east corner (section 947, Fig. 7). Ditch 8627 ran for at least 49 m, had a V-shaped profile and a slightly concave base, and was between 0.5 and 1 m wide and 0.1 to 0.45 m deep. Corner ditch 8638 was aligned NW-SE then NE-SW with a visible extent of 5 m, a V-shape profile with a concave bottom and a depth of 0.20 m. Ditch 8627 produced an assemblage of 17 sherds (118 g) of mostly undiagnostic pottery, except for one sherd dated to AD 1-50 and another dated to AD 110-270. Ditch 8638 contained only two very small sherds (3 g) but one of them was in Roman fine grey ware, and is thus of post-Conquest date.

The northern enclosure as it appears on Figure 7 is perfectly aligned on the southern enclosure, which implies that the former was dug to mirror the latter. The gap between the two could have been used as a trackway. As discussed above, the dating evidence from ditches 8627 and 8638 is very tenuous and indicates considerable residuality. However most dating evidence recovered from the northern enclosure came from the later ditches which produced a mixed assemblage of middle Roman pottery and residual late Iron Age/early Roman sherds in fresh condition. The residual pottery was recovered from the re-cut (8640) of ditch 8627 and was likely to have originally been part of the fills of 8627. The most likely explanation is that the original extent of the northern enclosure was very similar to the extent of the middle Roman enclosure as visible on Figure 7. Ditch 8638 in particular is likely to have extended as far as its re-cut, but was almost entirely obliterated by this except in the south-east corner.

The slight dating evidence suggests that the northern enclosure ditch was excavated shortly after the Conquest, probably not much after *c* AD 50. The alignment of the two enclosures suggests that they were both in use when the second one was established. However its seems that the southern enclosure boundaries were mostly filled up by AD 70. The southern enclosure probably survived for some time after that, perhaps defined by positive features such as banks or hedgerows lying alongside the silted up ditches.

Internal features

A number of discrete features were dated to the early Roman phase. Only one large pit within the southern enclosure (8321) was dated to this period. It measured 1.70 by 1.50 m, and was 0.38 m deep. It produced 46 sherds of pottery (880 g) ranging from AD 70 to AD 190. Other artefacts included 407 g of slag and a fragment of the upper stone of a rotary quern. It was possibly a rubbish pit.

Two features were identified. just outside the western entrance to the southern enclosure, Sub-circular pit 8573 measured 2.85 m NE-SW and 2.75 m NW-SE, with a depth of 0.78 m. This very large feature was in use for a long period of time and may have been a

waterhole. It produced 49 sherds of pottery (932 g), ranging from AD 70 to AD 250, including a majority of grog-tempered wares, fragments of a poppyhead beaker in fine grey Upchurch ware, a cup in Central Gaulish samian and a jar in Canterbury grey ware. In addition to this material, 8573 also contained 3470 g of slag and the lower stone of a rotary quern, almost complete but very heavily weathered. Next to waterhole 8573 was posthole 8593. It had a visible post-pipe and measured 0.63 by 0.43 m with a depth of 0.36 m. It produced 162 g of slag and 12 sherds (72 g) of pottery, mostly very fine grog-tempered ware from the Ashford area, dated to AD 50-175. No associated features were identified in the vicinity.

Five features in the northern enclosure were assigned to this period. At the north-eastern end of boundary ditch 8627 posthole 8261 lay adjacent to the ditch terminus and is likely to have been associated with it. The posthole had a diameter of 0.85 m and a depth of 0.15 m. To the north and north-east pits 8052 and 8062 produced respectively 36 sherds (422 g) and 4 sherds (42 g) of pottery. The organic content within their fills suggested they were rubbish pits.

A small structure (8286), composed of seven small stakeholes and postholes, lay near the entrance of the enclosure. The internal space defined by the postholes was *c* 4.5 m long by 2.5 m wide but did not form a very coherent plan This could have been the remains of a temporary structure. No dating evidence was recovered from this structure, but it was sealed by layer 8060, which contained 18 sherds (114 g) dated to AD 150-250 thus providing a *terminus ante quem* for 8286. To the north of the latter, structure 8646 was an L-shaped pit with vertical sides and a flat base, measuring 2.32 by 1.98 m, with a depth of 0.45 m. This pit contained a flint structure of roughly rectangular shape (Plate 1), lining the edges of part of the cut. It produced a total of 30 sherds (584 g), all in grog-tempered fabrics. Its function remains obscure although it may have been linked to some industrial activity.

Nature of the occupation: discussion

The nature of the activity during the phase AD 50-150 does not seem to differ much from that of the previous phase. Crop processing still appears to take place, as the consistent presence of spelt wheat from various samples across the site indicates. However the absence of large assemblages from single deposits, such as the samples from 8402 and 8403 in the previous phase, may suggest that the specific grain storage area was no longer in use during this phase. It is not possible to determine the importance of animal husbandry in the site's economy due to the very poor preservation of the animal bones across the site. Only 152 fragments were recovered in total (all phases). These were mainly unidentified fragments, teeth and burnt bones, the remainder having been lost to the acidic nature of the soil.

Metalworking still appears to be one of the main activities of the site, as shown by the large amount of slag and fired clay found in the fills of many features. The percentage of ironworking debris from early Roman features represents 33.9% of the overall total of metalworking waste from the site (against 39.7% from furnaces and associated features and 19.5% from features of the previous phase). The paucity of metal artefacts from the site (5 nails were found in total) indicates that Leda Cottages was an ironworking producer site rather than a consumer. The pottery supplied to the site includes a large majority of local grog-tempered wares and a very low percentage of Continental imports. The vessel types include a significant majority of jars, cooking pots and liquid containers rather than open forms and beakers. These characteristics imply a very low status community.

The evidence presented above points to a small iron-producing site probably under the control of higher authority. It is possible that Leda Cottages depended directly upon the much larger centre of Westhawk Farm, located only 7 km away from the site. It is difficult however to identify if iron production represented the primary economic activity of the site or a complementary one. The amount of metalworking debris from the site and the lack of other artefactual and environmental evidence seem to support this theory. However the paucity of evidence for other activities could merely be a result of the low status of the site and of the low level of preservation (because of the acidic nature of the soil). The domestic element is made hard to assess because of the lack of coherent spatial distribution (of postholes and stakeholes in particular) and difficulty in interpreting some of the features' functions. Despite research for comparisons, no parallels could be found for structures such as 8646 and their role or importance on the site remains obscure.

4.3.3 Middle Roman (AD 150 to AD 270)

The enclosure system

The northern enclosure represented the main focus of occupation during the middle Roman phase (Fig. 7). The enclosure ditch was re-cut (8625 and 8640), obliterating most of the original ditches. Ditch 8625 was aligned NW-SE for 28.5 m, turning NE-SW for 14 m and ending in a rounded terminus. The NE-SW section was prolonged by another 11.5 m long segment. The terminus of this last segment bounded one side of the entrance way to the enclosure. Its profile was a V-shape with flat or slightly concave base, a width of between 0.55 and 0.75 m and a depth of 0.23 m. Ditch 8625 produced a small assemblage of 50 sherds (278 g) of pottery, dating the re-cut to around AD 150.

Ditch 8640 was a re-cut through part of the boundary ditch 8627 (section 910, Fig. 7), with a full extent of *c* 26.5 m, shallow gradually sloping sides and a flat base. Its typical width was 0.80 m and its depth was only 0.10 m. This ditch appears to be the latest in a series of

intercutting ditches. Ditch 8642, 4 m to the north-east of ditch 8640, extended for *c* 11 m, and had a V-shaped profile with a slightly concave base, a typical width of 0.64 m and a depth of 0.38 m. Ditch 8642 was cut along its entire length by ditch 8630 which then curved south-west for 9 m connecting it to ditch 8640. A section through this intersection showed 8640 to cut 8630. The width of ditch 8630 varied from 0.42 to 1.02 m and its depth was between 0.06 and 0.26 m. The dating evidence recovered from ditch 8640 was essentially of a residual nature while 8630 produced very little pottery (5 sherds- 42 g). However ditch 8642 produced 65 sherds (314 g), mostly dated to AD 150-250, which provide a *terminus post quem* for ditch 8630 and subsequently ditch 8640.

A small 12.5 m ditch segment (8643) aligned NE-SW was located to the north of the enclosure and parallel to its south-east sides. It could have been associated with 8630 or 8642, together forming a curving boundary, possibly truncated in the middle. Ditch 8643 produced 59 sherds of pottery (1441 g), including some Central Gaulish samian and fine grey wares, dated mainly to AD 120-200. A further two ditches (8644 and 8645) lay parallel to ditch 8643, but unfortunately they did not contain any dating evidence and thus could not be phased.

The discrete features: nature of the occupation?

There was no evidence for continued use of the southern enclosure, except for the presence of one pit (8531), the only feature located inside the enclosure. This pit was circular, measuring 1.80 by 2.30 m with a depth of 0.64 m. A total of 21 sherds (273 g) was retrieved from its fills. No evidence was found to determine its function.

Dating evidence recovered from the top half of waterhole 8573, to the west of the southern enclosure, indicates that this feature was still in use during this phase, possibly for the dumping of rubbish. Another waterhole (8494) was dug immediately west of 8573, measuring 4.26 by 3.47 m with a depth of 0.47 m. This yielded the largest assemblage of pottery (by sherd count) found on the site with 532 sherds (4084 g). The group included grog-tempered fabrics from the Weald and the Ashford area, products of the Thameside industry, black burnished 2 fabric and a few sherds of Central Gaulish and East Gaulish samian. In addition to the pottery, this pit contained 6967 g of slag, 586 g of fired clay, one upper stone of a rotary quern and two further quern stone fragments. A small pit (8622), measuring 0.83 by 0.63 m and 0.30 m deep, and situated in the same area, was also attributed to this phase.

Clusters of features were excavated in the northern enclosure, but few contained dating evidence and the available stratigraphic relationships proved insufficient to phase most of them. Various postholes and stakeholes were recorded, but analysis of their spatial distribution did not produce any coherent patterns. Phased features include one posthole

(8126), five pits (8037, 8092, 8116, 8150, 8153) and two structures of unclear function (8359 and 8647).

Most pits only produced a small number of sherds, except pit 8037 which contained 113 fragments of pottery (2036 g) including the shattered remains of four freshly-broken vessels in burnt white-slipped Hoo and Canterbury fabrics.

Another phase of use was identified within structure 8646 described in the previous phase. The rectangular re-cut through this feature truncated the upper part of the flint structure within it. A few metres from 8646, another structure was identified. Pit 8647 had a rectangular shape measuring 2.7 by 1.8 m, vertical sides with a flat base and a depth of 0.55 m. This pit seems to have been the foundation cut for a hard clay structure with a ragstone core (Fig. 8). Most of the fills contained burnt material (charcoal flecking) but no evidence of burning *in situ* could be seen. This feature produced 38 sherds (1016 g) including a small complete everted-rim pot in grog-tempered fabric, the base of a jar or beaker in fine grey ware and a bowl fragment in black burnished 2 fabric. A rotary quern fragment with burnt grinding surface and a fragment of roughly shaped stone of indeterminate function were also recovered.

A large sub-oval shaped pit (8359) was recorded in the south-east corner of the enclosure, measuring 3.70 by 3 m, with a maximum depth of 0.60 m. At least one phase of re-cut could be identified. A short segment of ditch (8637) ran into it and is likely to have been a drainage ditch associated at least with the earlier phase of use of the pit. This feature produced the second biggest pottery assemblage of the site with a total of 363 sherds (4398 g), including the remains of four partially complete vessels broken *in situ* (Plate 2) in local brittle sandy fabric, fine Upchurch grey ware fabric and oxidised Canterbury fabric. The remaining finds included 852 g of slag and eight small fragments of undiagnostic green-blue glass vessel. The function of this pit and the associated ditch is unclear but the necessity for drainage implies that water was needed. This feature could have been a waterhole used for the soaking of ironstone. The presence of several ironstone fragments in the fills was recorded during excavation.

Metalworking still appears to be a component of the site's activities although it may have been more confined in extent, judging by the percentage of slag found in middle Roman features, a mere 5% of the site total. However one furnace, 8651, situated in the cluster 100 m north-west of the main site, produced 3 tiny sherds (8 g) of middle Roman pottery. Although this evidence is rather tenuous, the fact that 8651 cut another furnace (8649) comprising at least two phases of use, supports its attribution to this phase.

If metalworking does not seem to represent the main activity on the site, the question remains as to which other activities may form major components of the site's economy. As in the previous phase, no recognisable domestic features could be identified and some of the

features, such as 8647, could not be interpreted. The site appears to have been abandoned around AD 250-270 as there is no later dating evidence. The excavations of the small town of Westhawk Farm and of the neighbouring site of Beechbrook Wood showed a period of declining activity and very limited evidence after AD 250. Many Wealden sites also seem to have suffered a similar fate, although the reasons behind this decline are not known (Cleere and Crossley 1995, 84-5). The eastern ironworks of the Weald had all closed down by the mid 3rd century, while a few western sites survived up to the late 4th century. Whatever the reasons, whether major changes in the economy or a move towards a more secure area, the abandonment of Leda Cottages is likely to have been directly linked with the demise of the ironworking industry as a whole in the area.

4.4 Unphased features

In the absence of stratigraphic relationships most features were dated by artefactual evidence. Unfortunately the amount of pottery recovered per feature was limited in most cases and a large number of discrete features could not be phased, because of the complete lack of pottery, or because they only contained one or two small abraded sherds. A total of ninety man-made features was recorded on site (this total excludes all tree bowls and other natural features). Out of these, only 30% could be attributed to a specific phase, leaving 70% of the features unphased, essentially stakeholes, and a few postholes and pits. Most of the unphased features are located within one or the other enclosure and are likely to have been of Roman date.

5 GUIDE TO THE ARCHIVE

The following tables include details of the archive components (Tables 4, 5 and 6).

The site has been analysed and published as part of the Channel Tunnel Rail Link Section 1 Post-excavation Project. This Integrated Site Report is one of 20 publication level site reports available to download from the Archaeology Data Service website: **http://ads.ahds.ac.uk/catalogue/projArch/ctrl/index.cfm**. These present synthesised data from key site sequences at an interpretative level that can be assimilated into complementary studies. The ADS site also includes five schemewide specialist reports, which provide synthetic overviews of the specialist data from CTRL Section 1 in its regional context. Underpinning the site reports and overviews, is a comprehensive archive of individual specialist reports and databases, which are also available to download. The CTRL reports and data can be accessed through the 'Project Archives' section of the ADS website.

Hard copy publication of the CTRL Section 1 results comprises a single volume synthetic overview of the excavated results in their regional context, which includes a complete site gazetteer and guide to the digital archive (Booth et al 2007).

Table 6 below details all available digital data for the Leda Cottages site. The Post-excavation assessment report is included in the digital archive, but assessment databases have only been included for categories of material which were not subsequently subject to full analysis. All reports and accompanying figures are presented as downloadable, print-ready Adobe Acrobat files (.pdf). ADS also maintain higher resolution archive versions of report image pages (.tiff). The report text and databases are available as text files (.rtf and .csv respectively). The digitised site plan is available as an Arcview shapefile (.shp) and in drawing exchange format (.dxf).

Table 4: Digital archive

Description	Filename root	Principal authors and organisation
Integrated site report		
Integrated site report	LED_ISR	Valerie Diez (OWA JV)
Integrated site report figures	LED_ISR	Valerie Diez (OWA JV)
Site research database		
Site database	LED	Diez V (OWA JV)
CAD/ GIS drawings		
CAD drawing	LED_CAD	Bradley M and Diez V (OWA JV)
ESRI ArcMAP GIS project	LED_GIS	Bradley M and Diez V (OWA JV)
GIS limit of excavation shapefile	LED_GIS	Bradley M and Diez V (OWA JV)
GIS feature plan	LED_GIS	Bradley M and Diez V (OWA JV)
Specialist research reports		
Ceramics (later prehistoric)	CER_LPR_LED_HWD	Jones GP (OWA JV)
Ceramics (late Iron Age and Roman)	CER_ROM_LED	Lyne M (Freelance)
Lithics	FLI_LED	Devaney R (OWA JV)
Small finds	SFS_LED	Keys L (Freelance) and Shaffrey R (OWA JV)
Wood charcoal	ENV_Charcoal_LED	Challinor D (Freelance)
Human remains	HUM_LED	Witkin A (OWA JV)
Radiocarbon dating	DAT_LED_HWD	Allen MJ (OWA JV)
Specialist datasets		
Ceramics (later prehistoric)	CER_LPR_LED_HWD	Jones GP (OWA JV)
Ceramics (late Iron Age and Roman)	CER_ROM_LED	Lyne M (Freelance)
Lithics	FLI_LED	Devaney R (OWA JV)
Small finds (stone)	SFS_LED	Shaffrey R (OWA JV)
Wood charcoal	ENV_Charcoal_LED	Challinor D (Freelance)
Human remains	HUM_LED	Witkin A (OWA JV)
Post-excavation assessment		
Post-excavation Assessment	LED_PXA	OWA JV

Table 5: Artefactual and environmental archive index

Item	Number of fragments	Weight (g) if appropriate	Number of boxes
Flint worked and unworked (total)	470		3 size 3
Pottery (total)	2144	21998	3 size 1 1 size 2 2 x Natural History Museum skull box
Late Iron Age and Roman pottery (hand collected)	1882	21026	
Sieved Roman pottery	262	972	
Ceramic Building material (total)	74		1 size 2
Metalwork Iron (total)	5		1 plastic size 4
Glass Small Finds (total)	8		1 size 4
Fired Clay (total)	1046		2 size 2 1 size 3
Slag (total)	6036	224676	29 size 2 5 x unboxed
Stone (total)	351		1 size 2 1 size 3 1 x Ashmolean 3 x unboxed
Animal bone (total)	318		1 size 4

Cardboard boxes

Size 1 = Bulk box	391mm x 238mm x 210mm	0.020 m3
Size 2 = Half box	391mm x 238mm x 100mm	0.009 m3
Size 3 = Quarter box	386mm x 108 mm x 100mm	0.004 m3
Size 4 = Eighth box	213 mm x 102 mm x 80 mm	0.002 m3

Plastic boxes

Size 4 = Small	213mm x 102mm x 80mm	0.002 m3

Table 6: Fieldwork paper archive

Contents	Comments
ARC 430/01	
Site Diary	
Daily journal	7 sheets
Primary Context records	
Context checklists	22 sheets
Context record sheets	666
Synthesised context records	
Matrices	1 A4 sheet; 1 A1 sheet
Survey Reports	
Survey request sheets and data	8 sheets
Catalogue of drawings	
Plan record sheets	2 sheets
Section record sheets	15 sheets
Primary drawings	
Plans	3 A1 sheets
	37 A4 sheets
Sections	56 A4 sheets
Synthesised drawings	
Annotated synthesised plans	4 A4 sheets 2 A3 sheets
Primary finds data	
Small finds record sheets	2 sheets
Finds context checklist	18 sheets
Worked stone record	1 sheet
Finds Box and bag lists	
Finds compendium	1 sheet
Box size sheet	1 sheet
Box contents sheets	55 sheets
Catalogue of photographs	
Black & white photo record sheets	15 sheets
Colour photo record sheets	15 sheets
Black & White contact prints and negatives	30 sleeves
Colour slides	29 sleeves
Primary environmental records	
Sample Register	10 sheets
Environmental transfer sheet	6 sheets
Charcoal identification sheets	19 sheets
Residue assessment forms	9 sheets
Sample processing record	23 sheets
Final report - ARC 430/81+800-83+800	
Site Diary	
Daily journal	96 sheets
Primary Context records	
Level register	1 sheet
Context checklists	16 sheets
Context record sheets	86
Survey data	
Plan and co-ordinates	2 sheets
Catalogue of drawings	
Plan record sheets	2 sheets
Section record sheets	1 sheet
Primary drawings	
Plans	2 A1 sheets; 9 A4 sheets
Sections	10 A4 sheets
Finds Box and bag lists	
Finds compendium	2 sheets;
Box lists	7 sheets
Primary environmental records	
Sample collecting sheets	2 sheets
Sample processing record	3 sheets

6 CATALOGUE OF ILLUSTRATED FINDS

The catalogue numbers presented below match the numbers given by the pottery specialist in the Leda Cottages pottery report, which is the reason they do not represent a continuous sequence.

Figure 4

1 Necked-bowl, 'Belgic' fine grog-tempered ware, *c 50* BC-AD 50. Ditch 8624.
2 Decorated sherd from jar, 'Belgic' coarse grog-tempered ware, *c* 50 BC-AD 50. Ditch 8624.
3 Necked-jar, 'Belgic' coarse grog-tempered ware (pale grog), *c* AD 0-70. Ditch 8624.
6 Jar, 'Belgic' fine sandy ware, *c* 50 BC-AD 50. Ditch 8624.
7 Jar, 'Belgic' fine sandy ware, *c* AD 0-50. Ditch 8624.
8 Necked jar, Glauconitic Medway Valley ware, *c* 50 BC-AD 50. Ditch 8624.

Figure 8

15 Jar, 'Belgic' coarse grog-tempered, AD 150+. Structure 8647.
16 Necked-jar, Orange-brown pinkbuff ware, *c* AD 200-270. Structure 8647.
17 Jar rim, Local very fine grey sandy ware, *c* AD 200-300. Structure 8647.
18 Jar rim, 'Belgic' coarse grog-tempered ware (pale grog), *c* AD 200-270. Structure 8647.

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