

Iron Age Remains at Phase 2a Ponds and Swales, Beaulieu Chelmsford



Archaeological Evaluation Report



June 2015

**Client: Countryside Zest
(Beaulieu Park) LLP**

OA East Report No: 1771

OASIS No: oxfordar3-211741

NGR: TL 7230 1014

Iron Age Remains at Phase 2a Ponds and Swales, Beaulieu, Chelmsford

Archaeological Evaluation

By Daria Tsybaeva MA and Helen Stocks-Morgan BSc ACIfA

With contributions by Rachel Fosberry ACIfA and Sarah Percival (BA MA MCIfA)

Editor: Rachel Clarke BA MCIfA

Illustrator: Séverine Bézie BA MA


Report Date: June 2015

Report Number: 1771
Site Name: Phase 2a Ponds and Swales, Beaulieu
HER Event No: SPBP 15
Date of Works: April 2015
Client Name: Countryside Zest (Beaulieu Park) LLP
Client Ref: 15344
Planning Ref: 09/01314/EIA
Grid Ref: TL 7230 1014
Site Code: SP BP 15
Finance Code: XEX BEP 15
Receiving Body: Chelmsford Museum / Stores

Accession No:

Prepared by: Helen Stocks-Morgan and Daria Tsybaeva
Position: Project Officer and Assistant Supervisor
Date: 23/06/15

Checked by: Richard Mortimer
Position: Senior Project Manager
Date: 26/06/15
Signed:



Disclaimer

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Oxford Archaeology being obtained. Oxford Archaeology accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person/party using or relying on the document for such other purposes agrees and will by such use or reliance be taken to confirm their agreement to indemnify Oxford Archaeology for all loss or damage resulting therefrom. Oxford Archaeology accepts no responsibility or liability for this document to any party other than the person/party by whom it was commissioned.

Oxford Archaeology East,
15 Trafalgar Way,
Bar Hill,
Cambridge,
CB23 8SQ

t: 01223 850500
f: 01223 850599
e: oaeast@thehumanjourney.net
w: <http://thehumanjourney.net/oaeast>

Table of Contents

Summary.....	5
1 Introduction.....	7
1.1 Location and scope of work.....	7
1.2 Geology and topography.....	7
1.3 Archaeological and historical background.....	8
1.4 Acknowledgements.....	11
2 Aims and Methodology.....	12
2.1 Aims.....	12
2.2 Methodology.....	12
3 Results.....	13
3.1 Introduction.....	13
3.2 Finds Summary.....	14
3.3 Environmental Summary.....	14
4 Discussion and Conclusions.....	15
4.1 Introduction.....	15
4.2 Middle to Late Iron Age settlement.....	15
4.3 Medieval ridge and furrow.....	15
4.4 Modern.....	15
4.5 Significance.....	15
4.6 Recommendations.....	16
Appendix A. Trench Descriptions and Context Inventory.....	17
Appendix B. Finds Reports.....	20
B.1 Pottery.....	20
Appendix C. Environmental Reports.....	21
C.1 Environmental Samples.....	21
Appendix D. Bibliography.....	23
Appendix E. OASIS Report Form.....	25

List of Figures

- Fig. 1 Site location plan showing Site 9 (outlined red) and trenches (black)
Fig. 2 Trench locations
Fig. 3 Selected sections

List of Plates

- Plate 1 Posthole 2752, from east
Plate 2 Ditch 2756, from south-east

List of Tables

- Table 1: Environmental samples

Summary

An archaeological evaluation was carried out at Phase 2a Ponds and Swales, Beaulieu, Chelmsford. The fieldwork took place between the 9/4/15 and the 14/4/15. A total of eight trenches were excavated across two separate fields, within the proposed development area.

The evaluation revealed two features dating to the Iron Age that were probably associated with nearby Iron Age settlements identified during a previous evaluation located 100m to the east. A small fire pit filled with burnt stones, pottery sherds and fragments of a loomweight was identified, along with a north-west to south-east aligned ditch that also contained pottery sherds and may have been part of a field system.

Several more recent features were also encountered during the evaluation. A medieval furrow was excavated near to the Iron Age ditch and contained couple of residual Iron Age pottery sherds. A large, possible quarry pit was discovered in the eastern field and contained fragments of modern glass and coal. A fragment of modern wire was recovered from the lower fill of a wide ditch in the western field.

1 INTRODUCTION

1.1 Location and scope of work

- 1.1.1 Between the 9th and 14th April 2015 Oxford Archaeology East (OA East) carried out an archaeological evaluation across two fields at Phase 2a Ponds and Swales, Beaulieu, Chelmsford (TL 7230 1014; Fig. 1) as part of a programme of archaeological works undertaken in advance of the construction of a new neighbourhood planned for north-east Chelmsford. Chelmsford City Council has resolved to grant outline planning permission (ref: 09/01314/EIA) for the new neighbourhood, known as Beaulieu, of up to 3,600 new homes and up to 62,300m² of mixed use development including new schools, leisure and community facilities, employment areas, new highways and associated ancillary development, including full details in respect of roundabout access from Essex Regiment Way and a priority junction from White Hart Lane.
- 1.1.2 The archaeological evaluation was conducted on land to the east of Essex Regiment Way and north of White Hart Lane, at Beaulieu, Chelmsford (see Fig. 1 for location). The evaluation was undertaken in advance of Phase 2a Ponds and Swales infrastructure works.
- 1.1.3 This archaeological evaluation was undertaken in accordance with the Archaeological Investigation and Mitigation Strategy (URS 2013) prepared for the Beaulieu scheme in consultation with Richard Havis of the Historic Environment Branch, Essex County Council (ECC; Planning Application 09/01314/EIA), and supplemented by a Method Statement prepared by OA East.
- 1.1.4 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *National Planning Policy Framework* (Department for Communities and Local Government March 2012). The results will enable decisions to be made by CCC, on behalf of the Local Planning Authority, with regard to the treatment of any archaeological remains found.
- 1.1.5 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

1.2 Geology and topography

- 1.2.1 Beaulieu (the Site) is located approximately 4km to the north-east of Chelmsford, Essex (centred on TL 7230 1014; Fig. 1). The Site encompasses an area of high ground surrounded on three sides by river valleys. To the west and south is the River Chelmer, and to the east is Boreham Brook. North of the Site the ground rises towards the village of Terling. From the southern part of the Site there are views south towards the Chelmer Valley and Danbury Hill.
- 1.2.2 The superficial geology consists of boulder clay of the Lowestoft Till formation underlain by London Clays. To the south of the area lay a mixture of head deposits and sand and gravels (British Geological Survey). The site is currently under arable cultivation.

1.3 Archaeological and historical background

Neolithic (c.4000 – 2500 BC)

- 1.3.1 Essex has some of the earliest surviving evidence of settlement, mainly concentrated to the north-east along the River Crouch at Lawford and Lemarsh (Hedges 1984). Evidence for possible domestic settlement within the vicinity of Beaulieu was recorded at Court Road, 1km to the north-west, in the form of several pits with Neolithic pottery within their fills (SMR 6142).

Bronze Age (2500 BC – 800 BC)

- 1.3.2 Settlement continued to be concentrated along the river valleys of the Chelmer and Crouch, however during the Bronze Age the landscape was enclosed by field systems for the first time, such as those found at Great Wakering (Kemble 2001). These enclosed field systems would have continued in use through into the Early Iron Age. It has been suggested that these Bronze Age field systems form the basis for the modern landscape in the Chelmer Valley (Drury & Rodwell 1980).
- 1.3.3 Several crop-marks have been recorded by aerial photography to the south of Belstead Hall and interpreted as part of a Bronze Age settlement (SMR 16888), with further domestic dwellings excavated at Springfield Lyons, 2.5km to the south-west. Further occupation sites are attested to by the recovery of artefacts, such as at New Hall School, to the south-east and Pratt's Farm, to the north.

Iron Age (c.800 BC - AD 43)

- 1.3.4 The settlement pattern during the Iron Age would have been of nucleated settlements within a larger farming landscape. Evidence of this, within the vicinity of the development area, was seen to the south of Belstead Hall (SMR 17438). This comprised a large enclosure with associated pits and smaller ditches (Drury 1978).
- 1.3.5 The later Iron Age witnessed an expansion of settlement onto the heavier clay soils and the continued occupation of the estuaries. These estuarine sites are seen to become more complex in nature over time, with higher population density and sustained occupation, such as has been found at Little Waltham (Drury 1980).
- 1.3.6 By the end of the Iron Age sites such as Gosbeck's oppida show that portions of the population were highly structured and of high status. These sites would have relied on farming communities scattered around the environs to supply agricultural commodities. (Crummy 1997).

Roman (AD 43 – AD 410)

- 1.3.7 During the Roman period a small market town grew up around the Mansio, located 5km to the south-west at Moulsham Street. The area surrounding this would have formed an agricultural hinterland to supply produce to the town.
- 1.3.8 This agricultural landscape would have comprised large farms and villa complexes, such as those at Great Holts Farm and Bulls Farm Lodge (Drury and Rodwell 1986). Smaller domestic sites would also have formed part of this hinterland. Evidence for these has been recorded during evaluation work at Greater Beaulieu (Drury and Rodwell 1986), where evidence for pottery making, associated with domestic use, was also recorded.

Anglo-Saxon (c. AD 410 – AD 1066)

- 1.3.9 In the immediate post-Roman period, the Roman town at Chelmsford was abandoned and much of the surrounding landscape reverted to rough pasture or woodland (Hunter

2003). No known remains of Anglo-Saxon date are recorded within the application site although this is more likely to reflect the relatively poor archaeological visibility of Anglo-Saxon settlement sites rather than a lack of activity during the period.

- 1.3.10 Two records relating to the Anglo-Saxon period are held by the Essex Historic Environment Record (EHER); both of which are documentary records for Late Saxon manors - Belestedam (Belstead Hall) is also recorded in the Domesday survey of AD 1086 (Reaney 1935).

Medieval (c. AD 1066 – AD 1500)

- 1.3.11 The medieval town of Chelmsford was founded at the end of the 12th century, by the Bishop of London, to the north of the earlier Roman settlement at Moulsham. Throughout the medieval period the site was located within the rural hinterland of Chelmsford in a landscape populated by scattered farmsteads and manors.
- 1.3.12 To the south-east lay the manor of New Hall on the site of the current New Hall School. It is first mentioned by name (as 'Nova Aula') in documents dating to AD 1301 when the site formed part of the lands owned by the Canons of Waltham Abbey and was used as the summer residence of the Abbott. It was later transferred to the Regular Canons under Henry II (Burgess & Rance 1988).
- 1.3.13 The first deer park surrounding New Hall was created during the medieval period with the manor at its centre (Tuckwell 2006). Under Henry VII, New Hall was granted to Thomas Boteler, Earl of Ormond, who received a licence to crenellate (fortify) it in AD 1481 (E41/420) and who, in all likelihood, rebuilt or remodelled the original medieval hall in the latest architectural style. The new structure came to the attention of Henry VIII who visited New Hall in 1510 and 1515, shortly before Ormond's death. Subsequently, the property passed to Thomas' daughter and thus into the Boleyn family through her husband Sir Thomas Boleyn, from whom Henry VIII acquired the hall in 1516, changing its name to the 'Palace of Beaulieu'. Shortly after 1518 he rebuilt the Ormond's medieval hall on a quadrangular plan with gatehouse in the south range, great hall in the east and chapel in the west ranges. Mary Tudor took residency at New Hall intermittently between 1532 and her ascendancy to the crown in 1553 (Tuckwell, 2006).
- 1.3.14 Evidence for a further moated manor is recorded at Belstead. This manor was occupied throughout the medieval period. By 1325 it was called Belestede, in 1354 it was recorded as Belestede Hall and by 1504 it was known as Belested Hall. The name is thought to derive from 'the site of the bell house' (Reaney 1935).
- 1.3.15 Analysis of aerial photographs and geophysical survey identified a number of features which, when investigated by trial trench evaluation, were found to comprise a possible enclosure ditch or moat. A cobbled surface (possibly representing a house platform or yard surface), pit and several further ditches were recorded within the enclosure. Pottery recovered from the features suggests an occupation date of the 12th -13th century (Pocock 2009). These remains have been interpreted as a medieval farmstead or manor, possibly the precursor to the later manorial site at Belstead Hall c.160m to the north-east of Site 7 (see below).

Post-medieval (c. AD 1500 - 1750)

- 1.3.16 The development of New Hall and its deer park dominated the landscape of the application site and the surrounding area until the park contracted in size and the fields were enclosed for agriculture in the early 18th century. As the deer park was reduced in

size the former medieval manors or lodges developed into farms, creating an essentially agricultural landscape (Tuckwell, 2006).

- 1.3.17 Since the medieval period, New Hall had been set within the largest deer park in Essex; once totalling some 1,500 acres. The EHER records that the enclosed area actually comprised four separate parks surrounding New Hall and its gardens. The remaining parks were known as the Red Deer Park located to east of New Hall, the Dukes Park (located further east beyond the study area; EHER 47226) and the New or Little Park situated to the south and west of New Hall. The application site is located within this latter area.

Previous Archaeological Investigations

Geophysical Surveys

- 1.3.18 Geophysical magnetic susceptibility and detailed magnetometer surveys were carried out to evaluate the potential for important archaeological remains that may be buried within the Site. The magnetic susceptibility survey provided a rapid assessment of likely areas for previous settlement and industrial activity. The survey identified six areas of high potential, ten areas of medium potential and seven areas of low potential (Scott Wilson 2007). The magnetic susceptibility survey was followed by a detailed magnetometer survey of c.50% of the Beaulieu scheme. This survey provided a greater level of detail and identified individual features such as pits and ditches, field boundaries, buildings and structures, kilns or hearths and buried iron objects. The detailed magnetometer survey identified ten areas of high archaeological potential; six of medium potential and 19 of low potential (Scott Wilson 2007).

Trial trench Evaluation, 2008

- 1.3.19 A limited programme of targeted trial trench evaluation was undertaken between June and August 2008. The purpose of the trial trenching was to confirm the presence/absence and significance of archaeological remains at eight sites identified by an assessment of the combined results of the desk-based studies and non-intrusive surveys (Scott Wilson 2007).
- 1.3.20 The trial trenching confirmed the presence of archaeological remains dating from the late prehistoric to post-medieval periods. This included a Late Iron Age and Early Romano-British settlement (Site 8); an Iron Age ditch (Site 5); medieval rural settlement possibly indicative of a precursor to Belstead Hall (Site 7); a possible medieval/early post-medieval warrener's lodge associated with the former deer park (Site 10); early post-medieval moated enclosure (Site 11); Tudor fishpond and associated earthwork dam (Site 2); a brick making site comprising two scove or clamp kilns of possible Tudor date (Site 3) and evidence for associated quarrying activity (Site 4).

Beaulieu Minerals trial trench evaluation

- 1.3.21 A trial trench evaluation was undertaken in September/October 2011 to inform and support the planning application for the Beaulieu Minerals Extraction scheme. The evaluation identified a concentration of archaeological remains to the north-west of New Hall School. These remains appear to represent a rural settlement and possible metalworking activity dating from the Late Bronze Age through to the end of the Roman period. Metal detecting of the ploughsoil revealed several Early Roman coins and fragments of Early Roman brooches within the main area of activity.

Beaulieu 1st Mitigation evaluation and excavations, 2013

- 1.3.22 Recent archaeological trial trench evaluation of the proposed Essex Regiment Way roundabout, White Hart Lane junction and connecting access road identified four locations of significant archaeological remains (Stocks-Morgan 2013).
- 1.3.23 Site 5, located within the footprint of the proposed Essex Regiments Way roundabout, identified part of a Middle Iron Age settlement comprising a single roundhouse, surviving only as the remains of an eaves-drip gully. Several small pits and postholes were identified outside the roundhouse and were likely to be associated with domestic activity contemporary with the building. This settlement was surrounded by a large oval enclosure.
- 1.3.24 In Area A1 a single east to west aligned field boundary ditch of possible Late Iron Age date attests to a wider agricultural landscape of field systems. A second, probably medieval, ditch was encountered on a north-west to south-east alignment (Stocks-Morgan 2013a).
- 1.3.25 Site 11 and Zone D1 revealed evidence of two High medieval house platforms and their surrounding enclosures, interpreted as medieval settlement remains associated with Belstead Manor estate (Stocks-Morgan 2013b).

Beaulieu Zone B and E, 2014

- 1.3.26 Four areas of significant archaeological remains were identified on Zone B and E.
- 1.3.27 Two small open area excavations were undertaken to the west of the area, which encountered Late Bronze Age / Early Iron Age open settlement, comprising five four-post structures and several pits. A further area to the north of the site revealed a small undated gully.
- 1.3.28 A large open area excavation was undertaken towards the south-eastern corner of the site, which identified occupation spanning a period from the Late Iron Age into the Early Roman period. These settlement remains consisted of an enclosure surrounding a roundhouse and associated occupation features. In the Early Roman period this enclosure was reconfigured and a replacement roundhouse constructed. This phase of settlement also produced an associated midden deposit and an ancillary roundhouse.

Beaulieu Phase 2 Infrastructure, 2014

- 1.3.29 A twelve trench evaluation, 100m to the east of the present evaluation encountered a Middle to Late Iron Age settlement features , alongside a medieval field system.

1.4 Acknowledgements

- 1.4.1 The author would like thank Iain Williamson of URS and Countryside Zest (Beaulieu Park) LLP who respectively commissioned and funded the archaeological work. The project was managed by Richard Mortimer and the illustrator was Severine Bezie. Thanks are also extended to Alexandra Cameron and Mary Andrews who helped with the fieldwork and Dave Brown for carrying out the site survey. The project was monitored by Richard Havis and Alison Bennett of Essex County Council. The machining was undertaken by Oliver Scanlon of Danbury Plant Hire.

2 AIMS AND METHODOLOGY

2.1 Aims

- 2.1.1 The objective of this evaluation was to determine as far as reasonably possible the presence/absence, location, nature, extent, date, quality, condition and significance of any surviving archaeological deposits within the development area.

2.2 Methodology

- 2.2.1 Eight trenches were excavated within the proposed development area and all archaeological remains were excavated where appropriate and possible.
- 2.2.2 The excavation of Trench 20, located in the south-eastern part of the development area, was not possible due to the scrubland being too overgrown.
- 2.2.3 Machine excavation was carried out under constant archaeological supervision with a tracked 15 tonne machine using a toothless ditching bucket.
- 2.2.4 The site survey was carried out using a Leica GPS fitted with *Smartnet* technology.
- 2.2.5 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.
- 2.2.6 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits.
- 2.2.7 A total of two bulk samples were taken, from deposits considered most appropriate for environmental sampling, while also considering feature type and period
- 2.2.8 The site conditions were mostly dry and sunny.

3 RESULTS

3.1 Introduction

3.1.1 The trenches are described below by field and then in numerical order (see Fig. 2 for trench locations). Further details of the trenches and the artefacts and ecofacts recovered can be found in Appendices A – C. All trenches except 203 and 210 contained a layer of topsoil and subsoil overlying a natural of boulder clay. Subsoil was a light yellowish brown sandy clay (2751), about 0.1m to 0.26m thick, which was overlain by a dark greyish brown sandy clay topsoil (2750), 0.2m to 0.38m thick. Layers of topsoil and subsoil were thicker where the trenches were opened up near the field edges and hedge lines. In Trenches 203 and 210 only topsoil (2750) was encountered.

Trench 202

3.1.2 There was no archaeology present in this trench.

Trench 203

3.1.3 Trench 203 towards the southern part of the site contained a large amorphous pit (2764) that was encountered at the north-eastern end of the trench. The pit, which was c. 7m wide, was not excavated due to modern material being present in its fills. A lower fill, comprising a light brownish grey sandy clay (2766), containing small fragments of coal was partly exposed, which was overlain by a dark grey sandy clay (2765), containing fragments of coal and modern glass.

Trench 204

3.1.4 There was no archaeology present in this trench. Subsoil (2751) contained frequent rounded and angular small stones and flints.

Trench 206

3.1.5 A pit (2752) was encountered in the western end of the trench and it was circular in plan, 0.36m wide and 0.65m long (see Fig. 3 for profile). The pit had steep sides and a concave base, and was 0.2m deep, with evidence for *in-situ* burning. Its fill consisted of dark blueish and reddish brown silty clay (2753), which contained fragments of burnt stone, a loomweight and Late Iron Age pottery sherds (see Plate 1).

Trench 207

3.1.6 Part of a wide ditch (2754) aligned north-north-west to south-south-east was visible in the north-eastern corner of the trench. The ditch was not excavated here as the same ditch had been investigated in Trench 208 (see below). The upper fill, comprising a mid brown sandy clay (2755), was revealed, although no finds were recovered.

Trench 208

3.1.7 A ditch (2760) aligned north-north-west to south-south-east was encountered in the eastern corner of the trench, and this was 4m wide up to the baulk. The western ditch side was a gentle slope. The base of ditch 2760 was not encountered, although it was excavated to a depth of 0.74m. A lower fill, comprising a 0.22m thick dark greyish brown silty clay (2761) containing small coal fragments and a piece of modern wire was present, which was overlain by a redeposited natural of mid reddish brown clay (2762), 0.18m thick. The upper fill (2763) was a 0.1m thick light yellowish brown silty clay (2763), which contained occasional fragments of post-medieval ceramic building material (CBM) (not retained?).

Trench 209

- 3.1.8 There was no archaeology present in this trench.

Trench 210

- 3.1.9 A ditch (**2758**) aligned north to south was encountered in the north-eastern end of the trench and this was 1.7m wide. The ditch sides were gently sloping to a flat base, and it was 0.12m deep. Its fill was a light greyish brown sandy clay (2759), which contained two residual sherds of Late Iron Age pottery.
- 3.1.10 Five metres to the south-west lay a second ditch (**2756**), which was aligned north-west to south-east and was 1m wide (see Fig. 3 for profile). The ditch had steep sides and a V-shaped base, and was 0.28m deep. Its fill consisted of a light grey sandy clay (2757), which contained sherds of Late Iron Age pottery and fired clay fragments (see Plate 2).
- 3.1.11 Six metres to the south-west another ditch was encountered which was on the same north-north-west to south-south-east alignment as ditch **2760** in Trench 208 and ditch **2754** in Trench 207. It was not excavated.

3.2 Finds Summary

- 3.2.1 A total of 94 sherds of pottery, weighing 860g, was recovered during the evaluation. All are later Iron Age dating to the mid to late 1st century BC. One complete triangular loomweight and two more fragments of similar loomweight were present and also date to the Late Iron Age.

3.3 Environmental Summary

- 3.3.1 Two samples were processed during the evaluation. The sample from posthole **2752** included charred grains of barley / emmer wheat and ditch **2756** contained charcoal.

4 DISCUSSION AND CONCLUSIONS

4.1 Introduction

4.1.1 The discussion concentrates on features that are dated and can be grouped. It is presented in an overall chronological format to help set the results within the context of their wider landscape setting (see Fig. 2).

4.2 Middle to Late Iron Age settlement

4.2.1 Pit **2752** encountered in Trench 206 contained frequent fragments of burnt clay and stones and *in-situ* burning was noticed during excavation. It was probably used as a small fire pit with the stones (and loomweight fragments) being deliberately buried after its use. The fire pit was probably associated with and in use at the same time as the Iron Age settlement encountered in the excavation of Site 9 nearby as the sherds of pottery retrieved from the pit are also Late Iron Age in date. North-west to south-east aligned ditch **2756** in Trench 210 is also likely to have been associated with the nearby settlement due to the large quantity of Late Iron Age pottery sherds retrieved from the 1m long slot excavated through the ditch. The ditch was probably part of the field systems associated with the settlement located to the south-west..

4.3 Medieval ridge and furrow

4.3.1 A wide shallow ditch (**2758**), encountered in Trench 210, is likely to have been part of a medieval system of ridge and furrow. Two worn sherds of Late Iron Age pot retrieved from the furrow are residual, presumably brought in by the plough from other Iron Age features nearby.

4.4 Modern

4.4.1 Two modern features were encountered during the evaluation. A pit (**2764**) visible in Trench 203 contained fragments of glass and coal which date the pit to a modern period. A ditch (**2754** & **2760**) visible in Trenches 207, 208 and 210 contained fragments of CBM in its upper fill (2763) and a piece of modern wire in its lower fill (2761).

4.5 Significance

4.5.1 During the archaeological evaluation of Phase 2a ponds ponds and swales (Tr 202 – 210) remains dating from Iron Age, post-medieval and modern periods were encountered.

4.5.2 A small concentration of Iron Age features (notably pit **2752**) in the western part of the field are of some significance as they can be related to the Iron Age settlements located at Sites 8 and 9 on either side of the evaluation area. The plant remains recovered from pit **2752** indicates that there is preservation of charred food remains that are consistent with occupation of the site during the Iron Age period.

4.5.3 A previous evaluation (phase 2 infrastructure, Tr 190 - 201) within the vicinity (see Fig. 2) also encountered Late Iron Age activity, comprising two enclosure ditches and three ditches associated with a possible field system. Two later ditches were also present, one aligned on north to south and dated to the post-medieval period, the second ditch was aligned east to west and assigned a post-medieval date based on its alignment.

4.5.4 This combined evidence will contribute to current understanding of Iron Age landscape and land-use within the local and regional context as well as the development of a settlement from the Early Iron Age through to the Late Iron Age.

4.6 Recommendations

- 4.6.1 Recommendations for any future work based upon this report will be agreed in consultation with the ECC HEM.

APPENDIX A. TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Trench 202						
General description				Orientation		NW-SE
Trench devoid of archaeology. Consists of topsoil and subsoil overlying a natural of boulder clay.				Avg. depth (m)		0.64
				Width (m)		2
				Length (m)		16
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2750	layer	-	0.38	Topsoil	-	-
2751	layer	-	0.26	Subsoil	-	-
Trench 203						
General description				Orientation		NE-SW
Trench contained a large modern pit. Consists of topsoil overlying a natural of boulder clay.				Avg. depth (m)		0.36
				Width (m)		2
				Length (m)		30
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2750	Layer	-	0.36	Topsoil	-	-
2764	Cut	c. 7	-	Pit	-	-
2765	Fill	c. 4	-	Upper fill of pit 2364	Coal	modern
2766	Fill	c. 7	-	Lower fill of pit 2364	Coal	modern
Trench 204						
General description				Orientation		NW-SE
Trench devoid of archaeology. Consists of topsoil and subsoil overlying a natural of orange gravel.				Avg. depth (m)		0.54
				Width (m)		2
				Length (m)		30
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2750	Layer	-	0.3	Topsoil	-	-
2751	Layer	-	0.24	Subsoil	-	-
Trench 205						
General description				Orientation		
Trench was not excavated				Avg. depth (m)		
				Width (m)		2
				Length (m)		30

Trench 206						
General description				Orientation	E-W	
Trench contained a single pit. Consists of topsoil and subsoil overlying a natural of boulder clay.				Avg. depth (m)	0.35	
				Width (m)	2	
				Length (m)	30	
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2750	Layer	-	0.25	Topsoil	-	-
2751	Layer	-	0.10	Subsoil	-	-
2752	Cut	0.36	0.2	Pit	-	-
2753	Fill	0.36	0.2	Fill of pit 2752	Burnt stone, baked clay pottery	Iron Age
Trench 207						
General description				Orientation	NE-SW	
Trench contained a single partly visible ditch. Consists of topsoil and subsoil overlying a natural of boulder clay.				Avg. depth (m)	0.4	
				Width (m)	2	
				Length (m)	31	
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2750	Layer	-	0.21	Topsoil	-	-
2751	Layer	-	0.19	Subsoil	-	-
2754	Cut	-	-	Ditch	-	-
2755	Fill	-	-	Fill of ditch 2754	-	modern
Trench 208						
General description				Orientation	E-W	
Trench a single partly visible ditch. Consists of topsoil and subsoil overlying a natural of boulder clay.				Avg. depth (m)	0.4	
				Width (m)	2	
				Length (m)	30	
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2750	Layer	-	0.24	Topsoil	-	-
2751	Layer	-	0.16	Subsoil	-	-
2760	Cut	4	0.74	Ditch	-	-
2761	Fill	4	0.22	Lower fill of ditch 2760	-	modern
2762	Fill	4	0.18	Middle fill of ditch 2760	-	modern
2763	Fill	4	0.10	Upper fill of ditch 2760	CBM	modern

Trench 209						
General description				Orientation		N-S
Trench devoid of archaeology. Consists of topsoil and subsoil overlying a natural of boulder clay.				Avg. depth (m)		0.37
				Width (m)		2
				Length (m)		30
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2750	Layer	-	0.28	Topsoil	-	-
2751	Layer	-	0.09	Subsoil	-	-
Trench 210						
General description				Orientation		NE-SW
Trench contained three ditches. Consists of topsoil overlying a natural of boulder clay.				Avg. depth (m)		0.34
				Width (m)		2
				Length (m)		30
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2750	Layer	-	0.34	Topsoil	-	-
2756	Cut	1	0.28	Ditch	-	-
2757	Fill	1	0.28	Fill of ditch 2756	Pottery, fired clay	Iron Age
2758	Cut	1.7	0.12	Ditch	-	-
2759	Fill	1.7	0.12	Fill of ditch 2758	Pottery	Iron Age

APPENDIX B. FINDS REPORTS

B.1 Pottery

By Sarah Percival

Assemblage

- B.1.1 A small assemblage of 94 sherds weighing 860g was recovered from three contexts. All are later Iron Age dating to the mid to late 1st century BC.
- B.1.2 The assemblage includes twelve sherds, 144g, from context 2753 (pit **2752**) comprising eight rim and upper body sherds weighing 121g from a wheel-thrown cordoned jar in fine grog-tempered fabric with abundant dark grey grog inclusions plus four sherds, 123g, from a coarse grog tempered storage jar with everted rim.
- B.1.3 Context 2757 (fill of ditch **2756**) produced 79 sherds, 602g from pedestal jar in coarse sandy fabric with moderate angular flint inclusions.
- B.1.4 Three very abraded sherds weighing 14g, in shell-tempered fabric with moderate, medium, rounded quartzite inclusions were found in fill 2759 of ditch **2758**.
- B.1.5 The small domestic assemblage is comparable with other later Iron Age pottery from the region displaying a range of utilitarian cooking and storage jars in sandy, grogged and shell-tempered fabric found at Phase II, Little Waltham and the Later Iron Age occupation at Stansted (Drury 1978; Going 2004).

B.2 Baked Clay

By Sarah Percival

Assemblage

- B.2.1 A semi-complete but fragmentary triangular loomweight, small find 175, was recovered from context 2753, the fill of posthole **2752**. A total of 134 fragments weighing 3,902g were found. All are made of hard-fired, dense, sandy fabric with moderate unburned angular flint inclusions up to 5mm. The weight is pierced three times through each corner and is 93mm thick and 128mm high. The diameter of the piercing is 16mm.
- B.2.2 A further two fragments of loomweight in similar fabric with smoothed surfaces and fragmentary piercings weighing 103g were found in context 2757, the fill of ditch **2756**. Five undiagnostic pieces from the same context, in poorly mixed orange silty clay with flint and chalk inclusions may be from daub but are too small to be confidently identified.
- B.2.3 Triangular loom weights are frequently found in Essex in later Iron Age contexts, the size and fabric of this example being similar to weights recovered at Stansted Airport (Major 2004, 173).

APPENDIX C. ENVIRONMENTAL REPORTS

C.1 Environmental Samples

By Rachel Fosberry

Introduction

- C.1.1 Two bulk samples were taken from features within the evaluated areas of the Phase 2a Ponds and Swales area at Beaulieu, Essex in order to assess the quality of preservation of plant remains and their potential to provide useful data as part of further archaeological investigations. The samples were taken from fill 2753 of posthole **2752** in Trench 206 and fill 2757 of undated ditch **2756** in Trench 210. Both features date to the Iron Age.

Methodology

- C.1.2 Ten of each bulk sample was processed by water flotation (using a modified Siraff three-tank system) for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. Both flot and residues were allowed to air dry. A magnet was dragged through each residue fraction prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and a complete list of the recorded remains are presented in Table 1. Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (1997) for other plants. Carbonised seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

Quantification

- C.1.3 For the purpose of this initial assessment, items such as cereal grains have been scanned and recorded qualitatively according to the following categories

= 1-10, ## = 11-50 specimens

Items that cannot be easily quantified such as charcoal have been scored for abundance

+ = rare, **++** = moderate, **+++** = abundant

Results

- C.1.4 Sample 530, fill 2753 of fire pit **2752** contain plant remains in the form of charcoal and cereal grains that have been preserved by carbonisation (charring). The cereals have been identified as barley (*Hordeum vulgare*) along with hulled wheat; spelt (*Triticum spelta*) or emmer (*T. dicoccum*). Both wheat varieties were cultivated in the Iron Age and the grains have a similar morphology that are difficult to distinguish.
- C.1.5 Sparse charcoal fragments are the only archaeobotanical remains present in Sample 531, fill 2757 of ditch **2756**.

Sample No.	Context No.	Cut No.	Feature Type	Flot Volume (ml)	Preservation	Cereals	Charcoal <2mm	Charcoal > 2mm	Flot comments
530	2753	2752	pit	5	Charred	##	++	++	Emmer/wheat and barley grains
531	2757	2756	ditch	1	Charred	#	+		Sparse charcoal

Table 1: *Environmental samples*

Discussion

- C.1.1 The plant remains recovered from posthole **2752** indicates that there is preservation of charred food remains that are consistent with occupation of the site during the Iron Age period. It is likely that the posthole (or fire pit), which had evidence of *in-situ* burning and the remains of triangular loomweights, was used for cooking. It is likely that the loomweights were used within the hearth to support cooking vessels.
- C.1.2 The samples from the evaluation of the Phase 2 Ponds and Swales have indicated that there is good potential for the recovery of further remains if future excavations take place in this area.

APPENDIX D. BIBLIOGRAPHY

- Brudenell, M., 2012 *Pots, practice and society: an investigation of pattern and variability in the post-Deverel Rimbury ceramic tradition of East Anglia.* Unpublished PhD thesis, York University
- Burgess, & Rance (eds) 1988 *Boreham – History, Tales and Memories of an Essex Village.* (Boreham Histories Project Group)
- Cappers, R.T.J., Bekker, R.M. and Jans, J.E.A. 2006 Digital Seed Atlas of the Netherlands Groningen Archaeological Studies 4, Barkhuis Publishing, Eelde, The Netherlands. www.seedatlas.nl
- Crummy, P., 1997 *City of Victory: the story of Colchester - Britain's first Roman town* (Colchester: Colchester Archaeological Trust)
- Davis, S. J. M. 1992 A rapid method for recording information about mammal bones from archaeological sites. Ancient Monuments Laboratory Report 19/92.
- Dobney, K & Reilly, K. 1988 *A method for recording archaeological animal bones: the use of diagnostic zones.* *Circaea* 5(2): 79-96
- Drury, P. J., 1978 *Excavations at Little Waltham, 1970-71*, CBA Res. Rep. 26, London
- Drury, P. J., 1980 'The early and middle phases of the Iron Age in Essex', in Buckley, B. G., (eds), *The Archaeology of Essex to AD 1500*, CBA Research Report 34
- Drury, P. J. & Rodwell, W., 1986 'Settlement in the Later Iron Age and Roman periods', in Buckley, B. G., (eds), *The Archaeology of Essex to AD 1500*. CBA Research Report 34
- Going, C., 2004 'Pottery' in Havis, R. and Brooks, H. *Excavations at Stansted Airport, 1986-91. Volume 1: Prehistoric and Romano-British.* East Anglian Archaeology 107, 139-166. Heritage Conservation. Essex Archaeology, Chelmsford.
- Hedges, 1984 'The Neolithic in Essex', in Buckley, B. G., (eds), *The Archaeology of Essex to AD 1500*. CBA Research Report 34
- House, J., 2010 *Prehistoric and Roman Remains at Beaulieu Park, Chelmsford.* Oxford Arch. East Report No, 1309 (unpublished)
- Hunter, J., 2003 *Field systems in Essex.* (Essex Society for Archaeology and History, Colchester)
- Jacomet, S. 2006 Identification of cereal remains from archaeological sites. (2nd edition, 2006) IPNA, Universität Basel / Published by the IPAS, Basel University.
- Kemble, J., 2001 *Prehistoric and Roman Essex* (Shroud: Tempus)
- Major, H., 2004 'Triangular Loomweights' in Havis, R. and Brooks, H. *Excavations at Stansted Airport, 1986-91. Volume 1: Prehistoric and Romano-British.* East Anglian Archaeology 107, 173. Heritage Conservation. Essex Archaeology, Chelmsford.
- Mortimer, R., 2013 *Method Statement for Trial Trenching.* Oxford Arch. East Tender Ref No, 13149 (unpublished)
- Pocock, M. 2008 Archaeological Evaluation at Greater Beaulieu Park, Chelmsford,

Essex. Essex County Council Archaeological Field Unit Report No 1905 (unpublished)

- Reaney, P.H., 1933 *Place names of Essex.* (Cambridge)
- Stace, C., 1997 *New Flora of the British Isles.* Second edition. Cambridge University Press
- Scott Wilson 2007 Historic Environment Baseline Assessment Report. Unpublished technical report
- Stocks-Morgan, H. 2013 *Iron Age and Medieval Remains on land at Phase 1, Beaulieu, Chelmsford.* Oxford Arch. East Report No, 1473 (unpublished)
- Stocks-Morgan, H. 2013a *Iron Age Remains at Site 5 and Area A1, Phase 1, Beaulieu, Chelmsford.* Oxford Arch. East Report No, 1541 (unpublished)
- Stocks-Morgan, H. 2013b *Medieval Remains at Beaulieu (zone D) Chelmsford.* Oxford Arch. East Report No, 1544 (unpublished)
- Tuckwell, T., 2006 *New Hall and its School* (Kings Lynn)
- Tyler, S. & Major, H. 2005 The Early Anglo-Saxon Cemetery and Later Saxon Settlement at Springfield Lyons, Essex. Essex. East Anglian Archaeology Report No. 111
- URS 2013 *Beaulieu Park, Chelmsford, Essex: Archaeological Investigation and Mitigation Strategy.* (Unpublished Archaeological Design)
- Zohary, D., Hopf, M 2000 Domestication of Plants in the Old World – The origin and spread of cultivated plants in West Asia, Europe, and the Nile Valley. 3rd edition. Oxford University Press

Maps consulted

British Geological Survey, 1993 Sheet 241, England and Wales 1:50,000

Websites consulted

<http://www.old-maps.co.uk/maps.html>. 1897 1:2500 Essex Viewed 22/06/11

APPENDIX E. OASIS REPORT FORM

Project Details

OASIS Number	oxfordar3-211741		
Project Name	Beaulieu, Chelmsford, Essex, Phase 2b ponds and swales		
Project Dates (fieldwork) Start	01-04-2015	Finish	09-04-2015
Previous Work (by OA East)	Yes	Future Work	Unknown

Project Reference Codes

Site Code	SPBP 15	Planning App. No.	09/01314/EIA
HER No.	sp bp 15	Related HER/OASIS No.	oxfordar3-152484,

Type of Project/Techniques Used

Prompt	Direction from Local Planning Authority - PPG16
Development Type	Housing Estate

Please select all techniques used:

<input type="checkbox"/> Aerial Photography - interpretation	<input type="checkbox"/> Grab-Sampling	<input type="checkbox"/> Remote Operated Vehicle Survey
<input type="checkbox"/> Aerial Photography - new	<input type="checkbox"/> Gravity-Core	<input checked="" type="checkbox"/> Sample Trenches
<input type="checkbox"/> Annotated Sketch	<input type="checkbox"/> Laser Scanning	<input type="checkbox"/> Survey/Recording Of Fabric/Structure
<input type="checkbox"/> Augering	<input type="checkbox"/> Measured Survey	<input checked="" type="checkbox"/> Targeted Trenches
<input type="checkbox"/> Dendrochronological Survey	<input type="checkbox"/> Metal Detectors	<input type="checkbox"/> Test Pits
<input type="checkbox"/> Documentary Search	<input type="checkbox"/> Phosphate Survey	<input type="checkbox"/> Topographic Survey
<input type="checkbox"/> Environmental Sampling	<input type="checkbox"/> Photogrammetric Survey	<input type="checkbox"/> Vibro-core
<input type="checkbox"/> Fieldwalking	<input type="checkbox"/> Photographic Survey	<input type="checkbox"/> Visual Inspection (Initial Site Visit)
<input type="checkbox"/> Geophysical Survey	<input type="checkbox"/> Rectified Photography	

Monument Types/Significant Finds & Their Periods

List feature types using the [NMR Monument Type Thesaurus](#) and significant finds using the [MDA Object type Thesaurus](#) together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
ditch	Iron Age -800 to 43	pottery	Iron Age -800 to 43
posthole	Iron Age -800 to 43	loom weight	Iron Age -800 to 43
ditch	Modern 1901 to Present	pottery	Modern 1901 to Present

Project Location

County	essex	Site Address (including postcode if possible)	
District	Chelmsford	land of White Hart Lane, Chelmsford CM2 6TD	
Parish	Springfield		
HER	SP BP 15		
Study Area	0.25haditch	National Grid Reference	TL 7230 1014

Project Originators

Organisation	OA EAST
Project Brief Originator	Richard Havis (ECC HER)
Project Design Originator	Iain Williamson (URS)
Project Manager	Richard Mortimer (OA East)
Supervisor	Helen Stocks-Morgan (OA East)

Project Archives

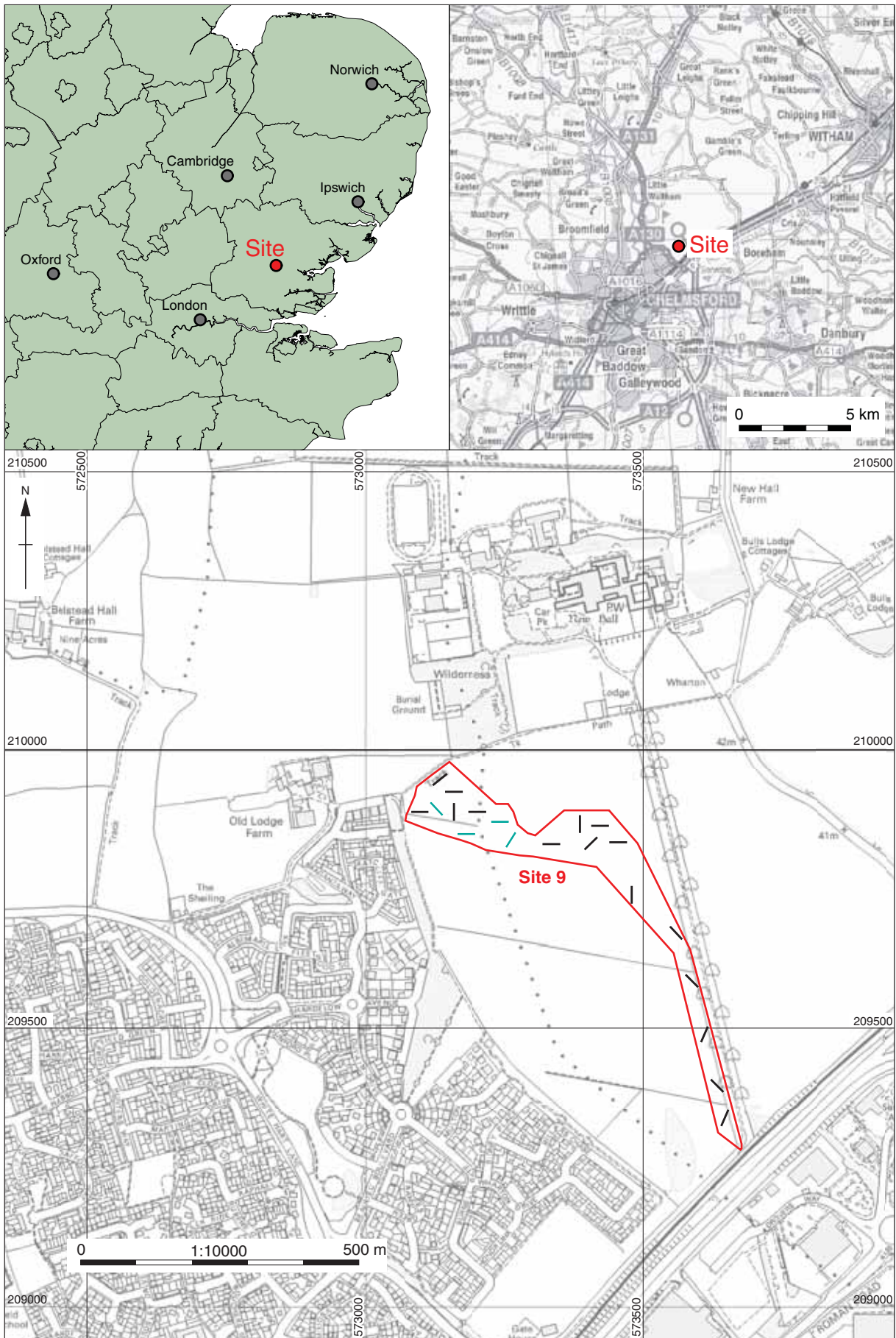
Physical Archive	Digital Archive	Paper Archive
OA East	OA East	OA East
SP BP 15	SPBP 15	SPBP 15

Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceramics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stratigraphic		<input type="checkbox"/>	<input type="checkbox"/>
Survey		<input type="checkbox"/>	<input type="checkbox"/>
Textiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Bone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Stone/Lithic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Digital Media	Paper Media
<input type="checkbox"/> Database	<input type="checkbox"/> Aerial Photos
<input checked="" type="checkbox"/> GIS	<input checked="" type="checkbox"/> Context Sheet
<input type="checkbox"/> Geophysics	<input checked="" type="checkbox"/> Correspondence
<input checked="" type="checkbox"/> Images	<input type="checkbox"/> Diary
<input type="checkbox"/> Illustrations	<input checked="" type="checkbox"/> Drawing
<input type="checkbox"/> Moving Image	<input type="checkbox"/> Manuscript
<input checked="" type="checkbox"/> Spreadsheets	<input checked="" type="checkbox"/> Map
<input checked="" type="checkbox"/> Survey	<input type="checkbox"/> Matrices
<input checked="" type="checkbox"/> Text	<input type="checkbox"/> Microfilm
<input type="checkbox"/> Virtual Reality	<input type="checkbox"/> Misc.
	<input type="checkbox"/> Research/Notes
	<input checked="" type="checkbox"/> Photos
	<input checked="" type="checkbox"/> Plans
	<input checked="" type="checkbox"/> Report
	<input checked="" type="checkbox"/> Sections
	<input checked="" type="checkbox"/> Survey

Notes:



Ordnance Survey. © Crown copyright 2015. All rights reserved. Licence number 10001998

Figure 1: Site location plan showing Site 9 area (outlined red) and trenches (black)

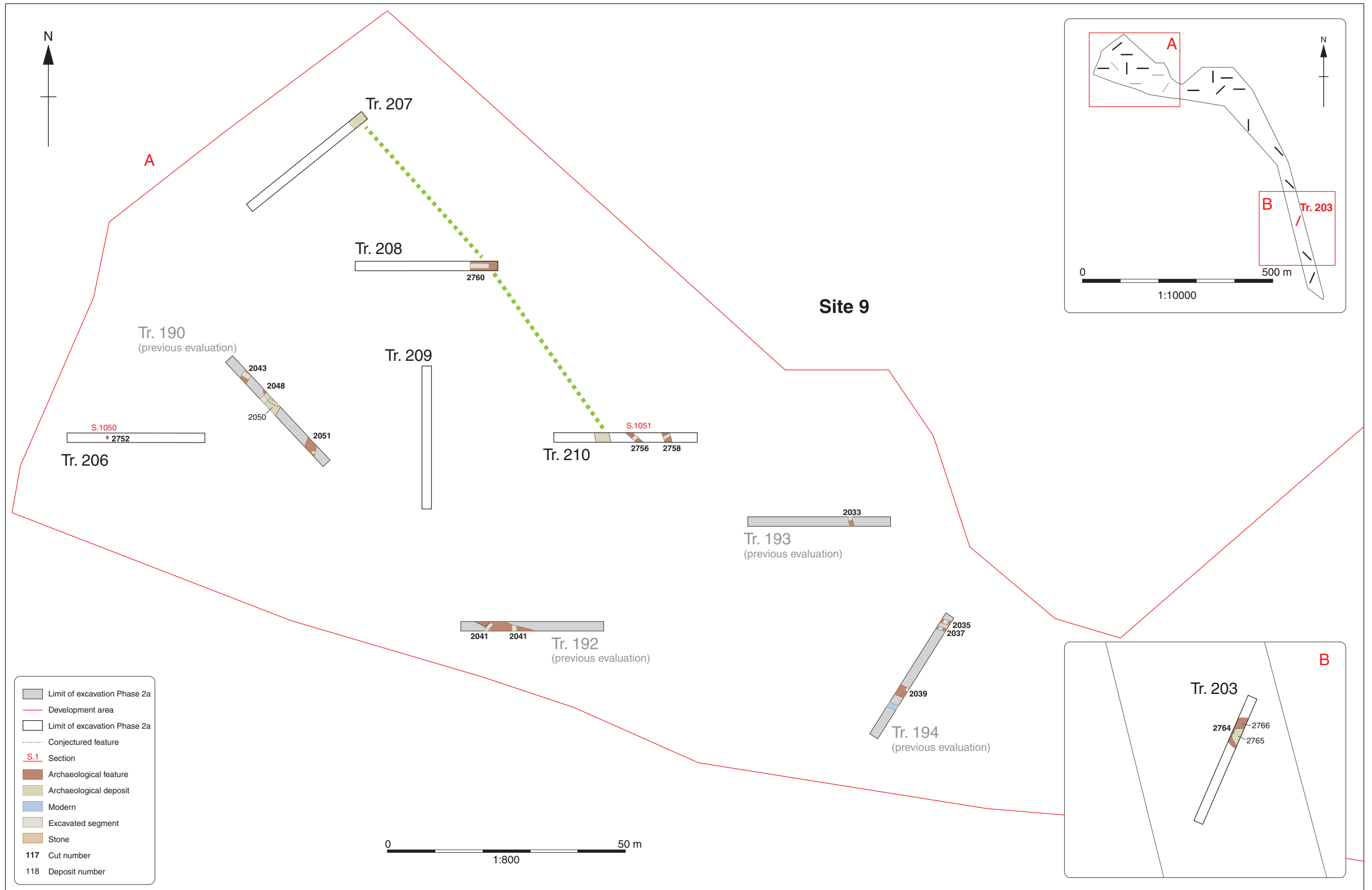


Figure 2: Trench locations