LAND AT LOWFIELD STREET, DARTFORD KENT DA1 1EW

AN ARCHAEOLOGICAL & GEOARCHAEOLOGICAL EVALUATION

LOCAL PLANNING AUTHORITY: DARTFORD BOROUGH COUNCIL

PCA REPORT NO: 12184

MARCH 2017

PRE-CONSTRUCT ARCHAEOLOGY

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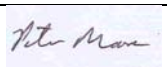
Project Manager Sign-off:	Peter Moore		March 2017

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LAND AT LOWFIELD STREET, DARTFORD, KENT, DA1 1EW:
AN ARCHAEOLOGICAL & GEOARCHAEOLOGICAL EVALUATION

Site Code: KLFS17
Central NGR: TQ 5411 7391

Local Planning Authority: KENT COUNTY COUNCIL

Planning Reference: DA/08/01497/FUL

Commissioning Client: URBAN ENHANCE

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1 ABSTRACT

1.1 This report details the results of an archaeological and geoarchaeological evaluation conducted by Pre-Construct Archaeology Ltd on Land at Lowfield Street, Dartford, Kent, DA1 1EW. The site is located within the borough of Dartford and is centred at TQ 5411 7391.

1.2 Following the Written Scheme of Investigation prepared by Pre-Construct Archaeology Ltd (Moore 2016), an archaeological and geoarchaeological evaluation was carried out between 8th and 10th February 2017 and was completed in accordance with the standards specified by the Chartered Institute of Archaeologists and following the guidelines issued by Historic England.

1.3 Natural deposits of Taplow Gravels were located at between 4.38m OD to the west of the site and 4.13m OD to the east. The gravels were excavated and examined for Palaeolithic remains, and while struck flints were found they were interpreted as being intrusive. The natural gravel was cut by a ditch dated to the Medieval period and two pits dated to the Late Medieval to Early Post-Medieval period The features were sealed by an undated possible gravel surface, which was in turn sealed by Post-Medieval horticultural layers.

2 INTRODUCTION

2.1 An archaeological and geoarchaeological evaluation commissioned by Urban Enhance was undertaken on Land at Lowfield Street, Dartford, Kent, DA1 1EW between 8th and 10th February 2017. It was undertaken in advance of a planning application for a block of apartments.

2.2 The site comprised a rectangular plot of cleared ground measuring *c.* 360sq metres in extant, centred at TQ 5411 7391. The site has access roads to The Priory Shopping Centre to both the east and west, an open, forecourt area to the north and a small plot of land to the south.

2.3 The Written Scheme of Investigation prepared by Pre-Construct Archaeology Ltd (Moore 2016), detailed the methodology by which the evaluation was to be undertaken. The WSI followed the Historic England (Historic England GLAAS 2014) and Chartered Institute for Archaeologists guidelines (CIFA, 2014). The evaluation was supervised by Guy Seddon, the Palaeolithic investigation was undertaken by Barry Bishop, the geoarchaeological investigation by Kate Turner and the project was managed by Peter Moore for Pre-Construct Archaeology Ltd. The project was monitored by Wendy Rogers (Senior Archaeology Officer, Heritage Conservation, Kent County Council) on behalf of Dartford Borough Council.

2.4 The site was given a unique site code KLFS17. The complete archive comprising written, drawn and photographic records will be deposited with the local receiving museum.

3 PLANNING BACKGROUND

3.1 The study aims to satisfy the objectives of Kent County Council and Dartford Borough Council, which fully recognise the importance of the buried heritage for which they are the custodians.

3.2 The evaluation was undertaken in advance of a planning application at the site for a block of apartments. The scope of works, the Written Scheme of Investigation and the site works were agreed with, and monitored by Wendy Rogers, KCC, on behalf of Dartford Borough Council

3.3 The work was undertaken under the auspices of the National Planning Policy Framework (NPPF 2012), and the Dartford Borough Council Local Plan Review Second Deposit Draft, dated September 2002. Since September 2007 a number of saved policies remain valid until the adoption of the Local Development Framework (LDF) Development Management Policies. Saved policies relating to archaeology include:

BE10 SCHEDULED ANCIENT MONUMENTS

BE11 PROTECTION OF SITES OF LOCAL ARCHAEOLOGICAL VALUE

B12 OTHER SITES OF ARCHAEOLOGICAL SIGNIFICANCE

3.14 It was agreed that a programme of archaeological and geoarchaeological evaluation would form the appropriate mitigation to inform the planning application progress. In this instance significant archaeological remains were found to be present and Wendy Rogers has indicated that she will recommend an extended excavation to be undertaken as part of any planning permission granted.

4 GEOLOGY AND TOPOGRAPHY

4.1 Geology

4.1.1 The British Geological Survey (1998 Sheet 271 Superficial) indicates that the solid geology within the vicinity of the site consists of Chalk bedrock overlain by superficial geology consisting of Taplow Gravels (Sand and Gravel).

4.2 Topography

4.2.1 The site was broadly level at 5.20m OD (Ordnance Datum).

4.2.2 The site lay *c.*3.5km from the River Thames and *c.* 290m from the River Darent.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 Prehistoric

5.1.1 A number of Palaeolithic implements have been found in the vicinity including a handaxe from Lowfield Street.

5.2 Roman

5.2.1 During the Roman period the main route of Watling Street (and its earlier predecessor) can be traced along the current Spital Street/High Street/Watling Street route. Roman objects have long been found in Dartford with traces of occupation found in archaeological investigations, including on Lowfield Street. The Roman cremations found at the Priory Centre to the north of the subject site suggest that occupation was concentrated to the north of the site, but that external activities, such as burials, were occurring to the south.

5.3 Medieval and Post-Medieval

5.3.1 The subject site lies within the priority area for Medieval and Post-Medieval Dartford though outside the main area settlement. However the site of the former Manor Hall, one of Dartford's most important Medieval houses, lies to the south of the subject site. Lowfield Street was the route out of Dartford heading for Wilmington and has been taken to be an area probably wet and marshy. An evaluation on the western side of Lowfield Street in 2006 found no archaeological features but did find evidence of marshy ground.

6 ARCHAEOLOGICAL METHODOLOGY AND OBJECTIVES

6.1 The purpose of the archaeological investigation was to determine the presence or absence of surviving features at the site and, if present, to assist in formulating an appropriate archaeological mitigation strategy. All works were undertaken in accordance with the guidelines set out by Historic England and the Institute of Field Archaeology.

6.2 As outlined in the Written Scheme of Investigation (Moore 2016), the evaluation aimed to address the following issues:

- The Evaluation will aim to locate, evaluate, date and record all any archaeological remains, from the Palaeolithic to Post-Medieval periods so as to be able to inform an archaeological mitigation strategy.
- The Evaluation will aim to locate and define any truncation which may have wholly or partially removed any archaeological or geological deposits.
- The Evaluation will aim to define whether the natural gravel survive intact or whether they have been disturbed. If undisturbed do they contain any evidence for Palaeolithic activity?

6.3 The site was subject to two evaluation trenches initially to measure 5m by 1.8m, however Trench 2 was extended to 6m in length in order to fully evaluate archaeological features revealed in the base.

6.4 All excavation of the low-grade overlying deposits was undertaken using a wheeled mechanical excavator using a toothless ditching bucket, under the constant supervision of a qualified archaeologist.

6.5 Machine excavation continued in spits of 100mm at a time until the natural ground was exposed.

6.6 Following machine excavation, relevant faces of the trench that required examination or recording were cleaned using appropriate hand tools. The majority of the investigation of archaeological levels was by hand, with cleaning, examination and recording both in plan and in section.

6.7 All archaeological features (stratigraphical layers, cuts, fills, structures) were evaluated by hand tools and recorded in plan at 1:20 or in section at 1:10 using standard single context recording methods. Features were evaluated so as to characterise their form, function and date.

6.8 Both the trenches were open for over 48 hours to allow any features to weather out.

6.9 Once the archaeological potential had been established, and any features investigated and recorded, then one end of each trench was selected and machine excavated in spits by a Palaeolithic specialist and geoarchaeologist so as to identify and record the stratigraphic sequence, examine and record the deposits and identify any palaeoarchaeological artefacts or ecofacts.

6.10 The recording systems adopted during the investigations were fully compatible with those developed out of the Department of Urban Archaeology Site Manual, now published by the Museum of London Archaeological Service (MoLAS 1994) and with PCA Site Manual (Taylor and Brown, 2009). The site archive was organised to be compatible with the archaeological archives produced in the Local Authority area.

6.11 A full photographic record was made during the archaeological investigation consisting of a digital photographic archive that was maintained during the course of the archaeological investigation.

6.12 The complete archive produced during the evaluation and watching brief, comprising written, drawn and photographic records, will be deposited with the local receiving museum with site code KLFS17.

6.13 Levels were located using a temporary benchmark with a value of 5.20m OD, which was placed on the site using a GPS.

7 THE ARCHAEOLOGICAL SEQUENCE

7.1 The earliest deposit observed during the archaeological investigation consisted of natural gravels of the Taplow Formation, recorded as [12] in Trench 1 and [17] in Trench 2.

7.2 The gravels fell from a height of 4.38m OD to the west of the site, in Trench 1 to 4.13m OD to the east of the site, in Trench 2.

7.3 Cut into the natural gravels were a ditch, [3] and two pits, [5] and [7], all dated to the Medieval period.

7.4 Ditch [3] was located in Trench 1 at a height of 4.43mOD and ran across the trench on an east-west alignment. It had a length of over 1.80m, (the width of the trench), a width of 1.25m and was 0.35m deep. It contained two fills, [1] and [2].

7.5 The primary fill of the ditch, [2] comprised a clean, firmly compacted, mid yellow/brown silty sand. The secondary fill, [1], was loose-firmly compacted, mid greyish brown sandy silty clay and contained pottery dating to AD 1125-1250. A fragment of residual Roman tegula and a detached decortication flint flake of possible Bronze Age date, (B. Bishop, pers comm), were also recovered from this fill.

7.6 Pits [5] and [7] were located in Trench 2. Pit [5], measured over 1.8m north-south by 1.24m east-west, continuing beyond the trenches limits of excavation, (LOE), and had a depth of 0.25m. It contained a single fill, [4] comprising firmly compacted mid brown, sandy, silty clay, which had a greenish tinge, suggestive of cess. Pottery dating to AD 1450-1600, was recovered from this fill. A residual platform preparation flint flake, of an uncertain pre-historic date, (B. Bishop pers comm) was also retrieved from this fill.

7.7 Pit [7] measured 2.9m east-west by more than 1.34m north-south, continuing beyond the trenches southern LOE, and had a depth of 0.29m. The fill of the pit, [6] was firmly compacted gravels in a dark, greyish brown sandy matrix that contained sherds of pottery dating to AD 1450-1600.

7.8 Sealing the cut features in both trenches was a layer of loose-firmly bonded ‘dirty’ gravel. Recorded in Trench 1 as [11] and Trench 2 as [16], the layer fell from a maximum height of 4.64mOD in Trench 1 to 4.25mOD in Trench 2 and was between 0.10m and 0.20m thick. Due to the limits of the evaluation, the nature of this layer is uncertain. It may be an interface between the soils that seal it and the cleaner gravel below, however it may be a rough metalled surface.

7.9 Above the dirty gravels was a sequence of dark brown, humic soils, which were recorded in both of the trenches that may have been horticultural in nature, the details of which can be seen in the table below.

Context Number		Max Thickness	Min Thickness	Max Level	Min Level
Trench 1	Trench 2				
8	13	0.25m	0.21m	5.20mOD	4.95mOD
9	14	0.25m	0.13m	4.91mOD	4.81mOD
10	15	0.35m	0.20m	4.77mOD	4.62mOD

7.10 Layers [9] = [14] and [10] = [15] both contained sherds of peg tile dated to AD 1450-1600 giving them a late Medieval to early Post-Medieval date.

8 ARCHAEOLOGICAL PHASE DISCUSSION

8.1 Phase 1: Natural Terrace Gravel

8.1.1 The terrace gravel was located at the base of both trenches, sloping from a height of 4.38m OD to the west of the site, in Trench 1 to 4.13m OD to the east of the site, in Trench 2.

8.2 Phase 2: Medieval

8.2.1 This phase represents the earliest human occupation recorded during the archaeological evaluation. Context [3], dated to 1125-1250 and can be interpreted as a potential land division boundary during the 12th-13th centuries.

8.2.2 Pits [5] and [7] were both dated to 1450-1600, placing them in the late-Medieval to early Post-Medieval periods. They may represent small scale quarrying for the natural gravels or backyard rubbish pits.

8.3 Phase 3: Post-Medieval

8.3.1 This phase is represented by a series of layers, the earliest of which is [11] = [16], the potential metalled surface. The layer is in turn sealed by the very humic, layers, [10] = [15], [9] = [14] and [8] = [13]. These layers are probably indicative of horticultural activity, in fact cartographic evidence of the 1871 Ordnance Survey map depicts the study site as an orchard.

9 ORIGINAL AND REVISED RESEARCH OBJECTIVES

9.1 Primary Objectives

9.1.1 The Written Scheme of Investigation (Moore, 2016) prepared prior to the commencement of archaeological work at Lowfield Street highlighted a set of specific objectives to be addressed by the investigation.

9.2 To locate, evaluate, date and record all any archaeological remains, from the Palaeolithic to Post-Medieval periods so as to be able to inform an archaeological mitigation strategy.

9.2.1 Struck flints were found in both sondages excavated into the gravels but were undiagnostic and interpreted as being intrusive.

9.2.2 The earliest evidence of human occupation discovered on the evaluation was of Medieval and Post-Medieval date. The features and layers were located, evaluated, dated and recorded. The evidence suggests that the site was probably located on the periphery of the town and was used for horticultural/agricultural activity throughout the period.

9.3 To locate and define any truncation which may have wholly or partially removed any archaeological or geological deposits.

9.3.1 No truncations either wholly or partially of the archaeological or geological deposits were observed on the site.

9.4 To define whether the natural gravel survives intact or whether they have been disturbed. If undisturbed do they contain any evidence for Palaeolithic activity?

9.4.1 The natural gravels on the study site were undisturbed, however there was no evidence for Palaeolithic activity.

10 CONCLUSIONS

10.1 The evaluation showed that the archaeological survival on the study site is very good, with intact Post-Medieval layers preserved directly under the modern day surface.

10.2 The archaeological evaluation found natural gravels at between 4.38m OD and 4.13m OD, in turn sealed by a sequence of archaeological deposits spanning the 12th to the 17th century.

10.3 Preservation of the Medieval and Post-Medieval archaeology of the site is very good and provides an insight to the development of Dartford from the horticultural activity of the Medieval and Post-Medieval periods, through to the early urbanisation of the town centre.

10.4 The full archaeological sequence was present on the site above the natural geology and did not appear to have been horizontally truncated. It can be assumed that archaeological features will continue across the rest of the site.

11 ACKNOWLEDGEMENTS

11.1 Pre-Construct Archaeology Limited would like to thank Urban Enhance for commissioning the archaeological work, especially James Skinner, and for their logistical support.

11.2 Thanks also to Wendy Rogers for monitoring the project on behalf of Dartford District Council.

11.3 The author would also like to thank: Peter Moore for project managing and editing this report; Barry Bishop and Kate Turner for the geoarchaeological investigation; Mark Roughley for the illustrations; Chris Jarrett for the pottery assessment, Amparo Valcarcel for the building material assessment; Karen Deighton for the animal bone assessment; Richard Archer for the survey and Rosie Barnes for her work on site.

12 BIBLIOGRAPHY

Moore, P. 2016 Written Scheme of Investigation for an Archaeological & Geoarchaeological Evaluation of Land to the Rear of Two Brewers Public House, Lowfield Street, Dartford, Kent DA1 1EW, Pre-Construct Archaeology Limited unpublished report.

CIFA 2014 Standard and Guidance for Archaeological Field evaluations, Institute For Archaeologists.

Taylor, J. and Brown, G. 2009 PCA Fieldwork induction manual, (Operations Manual I), London: Pre-Construct Archaeology Ltd.

24/02/17 MR

Figure 1
Site Location
1:2,000,000; 1:250,000; 1:25,000 at A4

0 20m

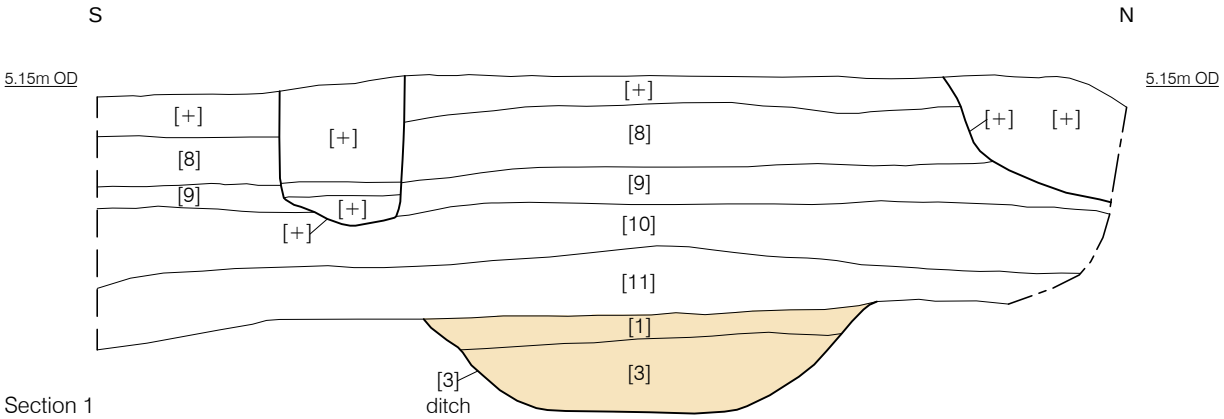
24/02/17 MR

Figure 2
Detailed Site and Trench Location Plan
1:400 at A4

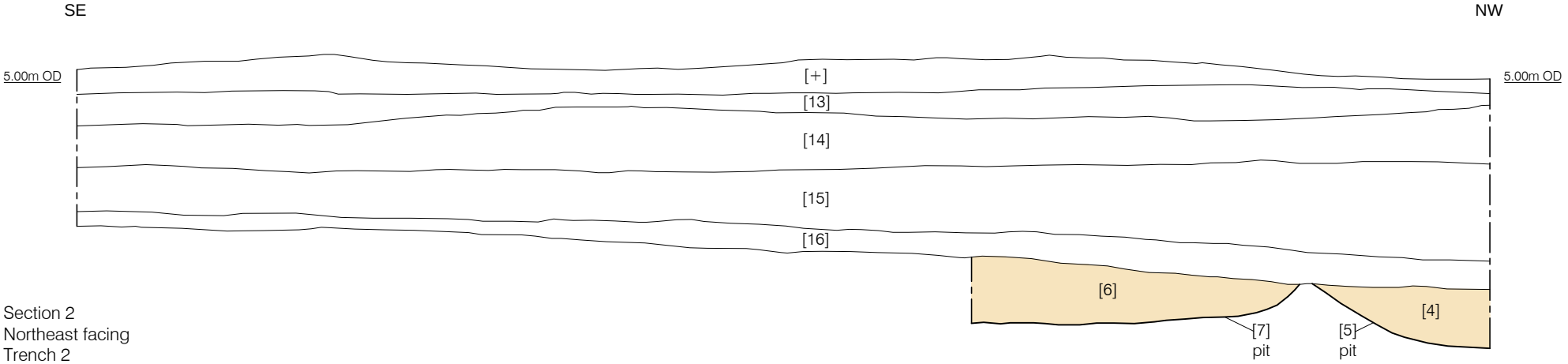
0 5m

24/02/17 MR

Figure 3
Plan of Trenches 1 and 2
1:100 at A4



Section 1
East facing
Trench 1



Section 2
Northeast facing
Trench 2

0 1m

24/02/17 MR

Figure 4
Sections 1 and 2
1:25 at A4

PLATES:

Plate 1: Trench 1, Looking South. Ditch [3] in Foreground

Plate 2: Trench 1 Looking West. Section Through Ditch [3].

Plate 3: Trench 1 Looking East. Geoarchaeological Sondage

Plate 4: Trench 2, Looking East. Pits [5] & [7] in Foreground

Plate 5: Trench 2 Looking South. Section Through Pits [5] & [6]

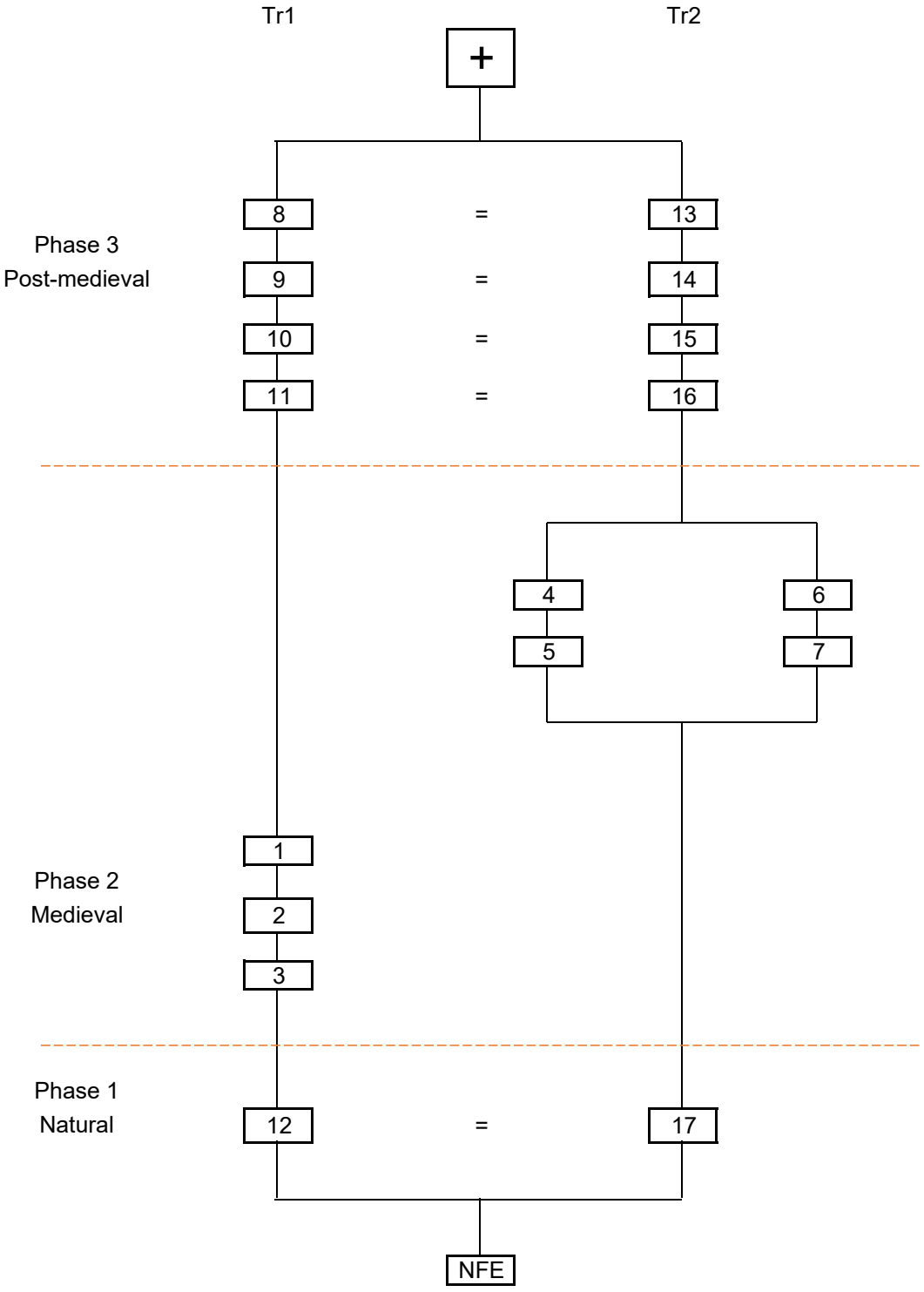
Plate 6: Trench 2 Looking East. Geoarchaeological Sondage

APPENDIX 1: CONTEXT INDEX

Site_Code	Context	Trench	Section_no	Plan_no	CTX_Type
KLFS17	1	1	1	Tr1	Fill
KLFS17	2	1	2		Fill
KLFS17	3	1	1	Tr1	Cut
KLFS17	4	2	2	Tr2	Fill
KLFS17	5	2	2	Tr2	Cut
KLFS17	6	2	2	Tr2	Fill
KLFS17	7	2	2	Tr2	Cut
KLFS17	8	1	1		Layer
KLFS17	9	1	1		Layer
KLFS17	10	1	1		Layer
KLFS17	11	1	1		Layer
KLFS17	12	1	1	Tr1	Layer
KLFS17	13	2	2		Layer
KLFS17	14	2	2		Layer
KLFS17	15	2	2		Layer
KLFS17	16	2	2		Layer
KLFS17	17	2	2	Tr2	Layer

CTX_Levels_hig	CTX_Levels_low	Phase	Phase_CCD
4.43	4.38	KLFS17-PH2	
4.34	4.28	KLFS17-PH2	
4.43	4.07	KLFS17-PH2	
4.16		KLFS17-PH2	
4.16	3.81	KLFS17-PH2	
4.23		KLFS17-PH2	
4.23	3.98	KLFS17-PH2	
5.2	4.98	KLFS17-PH3	
4.91	4.81	KLFS17-PH3	
4.77	4.72	KLFS17-PH3	
4.64	4.48	KLFS17-PH3	
4.39	4.28	KLFS17-PH1	
4.97	4.95	KLFS17-PH3	
4.9	4.82	KLFS17-PH3	
4.67	4.62	KLFS17-PH3	
4.46	4.25	KLFS17-PH3	
4.4	4.13	KLFS17-PH1	

APPENDIX 2: PHASED SITE MATRIX


Tr1
Tr2
+
8
=
13
Phase 3
Post-medieval
9
=
14
10
=
15
11
=
16
4
6
5
7
1
Phase 2
Medieval
2
3
Phase 1
Natural
12
=
17
NFE

APPENDIX 3: GEOARCHAEOLOGICAL ASSESSMENT OF THE QUATERNARY DEPOSITS

Barry John Bishop

Introduction

This report describes and comments on the Quaternary geology encountered during an Archaeological Field Evaluation at Land at Lowfield Street, Dartford, Kent..

The site lies on the western margins of the River Darent Floodplain c. 2km upstream from its confluence with the River Cray. Surface geology at the site is marked by the BGS (1998 Sheet 271 superficial) as (Holocene) alluvium but the investigations proved these to be absent, although a deep agricultural soil at the site may include reworked floodplain deposits. Instead, gravel terrace deposits were encountered immediately below the topsoil, which correlate with the deposits the BGS has mapped as the Taplow Gravel Formation c. 50m to the west of the site.

In the Dartford area three terrace deposits are mapped; the highest is the Boyn Hill Gravel followed by the Lynch Hill and then the Taplow Gravels. The Boyn Hill Gravel is part of the Thames terrace sequence, the other two are terraces of the River Darent (Bridgand 1994).

The lithostratigraphic name of the Taplow gravels in the lower Thames is the Mucking Formation which is thought to have been deposited during the Wolstonian Glaial period which is dated to c. 320 – 130 kya and correlates to OIS 8-6 (Bridgland 1994; Gibbard 1994). The Pleistocene sequence in this part of the lower Thames is noted for its internationally important artefactual and palaeo-environmental sequences which have mostly been found in the higher level Boyn Hill / Orsett Heath Gravels both to the east and west of the site.

Methodology

The Geoarchaeological evaluation involved the excavation of two test-pits located within the footprints of the excavated archaeological evaluation trenches. The test pits measured *c.*2m X 2m in plan and were machine excavated to a depth of at least 3m bgl, using a 1.8m wide toothless ditching bucket in spits of no more than 100mm thickness, whilst taking care to avoid crossing stratigraphic boundaries. Representative sections of each test-pit were photographed and drawn from the side of each test-pit, as they were too deep to enter safely.

100 litre samples were taken using the machine bucket at regular intervals and sieved through a 10mm mesh, with all other spoil being thoroughly searched on the side of the pits for any artefacts and environmental indicators.

Geological Sequence

Geoarchaeological Test-pit 1 (South End of Archaeological Evaluation Trench 1)

The current ground level height of Test-pit 1 was 5.26mOD on the surface of an agricultural soil. The soil was c.80m deep and had a sharp contact onto reworked mid 'dirty' brown sandy gravels and pebbles. These merged into undisturbed Pleistocene gravel deposits at a maximum height of 4.30mOD. These deposits were observed to be 2.10m thick with a lowest recorded level of 2.16mOD. The gravel deposits formed a single facies consisting of a moderately poorly sorted and horizontally weakly bedded sequence of loosely compacted dull yellowish brown sub-rounded to sub-angular nodular flint cobbles within a coarse sandy matrix. The cobbles were predominantly 40 – 100 mm in maximum diameter with occasional clasts measuring between 100 – 150mm and rare examples exceeding 200mm. No systematic clast counts were undertaken but all of the fractured pieces observed consisted of a mottled translucent black chalk flint comparable to that from the local chalk. The deposit was broadly homogeneous throughout the sequence with c. 300mm thick bedding plains interspersed with occasional coarse sand lenses and patches infilling shallow hollows. At c. 3.75mOD a band of dark brownish black (Mn ?) staining 250mm thick was observed, overlying a similar band stained orange-brown (Fe?) and further thinner bands of dark brown staining continued below this to the base of the sequence. At the base of the sequence there was an increase in the proportions of larger (>100mm) flint clasts.

Water ingress occurred at 2.90mOD but continued machining established that the gravel sequence overlay grey-green fine sand at 2.16mOD, interpreted as Thanet Sand bedrock.

Four 100 litre samples were sieved: a single small cortical blade measuring 22mm long by 11mm wide and 2mm thick was recovered from Sample 1, taken at a height of 4.20mOD near the interface with the upper disturbed gravels. It is thought likely that this is intrusive into the gravels, having been brought down by processes such as bioturbation.

Geoarchaeological Test-pit 2 (South End of Archaeological Evaluation Trench 1)

The ground level height of Test-pit 2 was recorded at 5.23mOD on the surface of compacted brick rubble 0.25m thick which overlay an agricultural soil c. 0.70m thick. This had a sharp contact onto reworked mid 'dirty' brown sandy gravels and pebble which merged into undisturbed Pleistocene gravel deposits with a maximum surface height of c. 4.33mOD. These deposits were observed to a depth of 2.99mOD where at rapid water ingress caused sections to become unstable and further machining was abandoned. The gravel sequence formed a single facies consisting of a moderately poorly sorted and horizontally weakly bedded sequence of loosely compacted dull yellowish brown sub-rounded to sub-angular nodular flint cobbles within a coarse sandy matrix. The cobbles were predominantly 40 – 100 mm in maximum diameter with occasional clasts measuring between 100 – 150mm and with rare examples exceeding 200mm. No systematic clast counts were undertaken but all of the fractured pieces observed comprised a mottled translucent black chalk flint comparable to

that from the local chalk. The deposit was broadly homogeneous throughout the sequence with c. 300mm thick bedding plains interspaced with occasional coarse sand lenses and patches infilling shallow hollows. The coarse sand component increased from c. 30% to c. 50% below c. 3.50mOD and gravel and pebble clasts (<64mm) became more common below 3.10mOD. At the point of water ingress, there was an increase in the proportion of larger nodules (>100mm) suggesting that, by comparison with Trench 1 the base of the gravels was near.

Four 100 litre samples were sieved: Three small flakes were recovered from Sample 1 which was taken from a height of 4.03mOD just below the interface with the upper disturbed gravels. These are all small; the largest measures just 23mm long, and they are chronologically undiagnostic. However, it is thought likely that these are intrusive into the gravels, have been brought down by processes such as bioturbation.

Summary

Quaternary sands and gravels were present in both test-pits and encountered at maximum heights of 4.30 and 4.33mOD and at a basal height, which was only observed in Test-it 1, of 2.16mOD. The levels at which these were encountered confirm their attribution to the Mucking gravels of the Taplow Gravel Formation.

The Quaternary deposits at the site are very similar in both test-pits and consist of weakly bedded gravels in a loose sandy matrix. Despite intensive sampling, the only artefactual material consisted of a small number of small struck flakes deemed to be intrusive, and no Palaeolithic artefacts or environmental indicators were recovered.

Recommendations

The geoarchaeological investigations have confirmed the presence at the site of Quaternary deposits equating to Taplow Gravel Formation. In the Darent valley these have been subjected to very little research and the investigations here have added further detail to our knowledge of the nature and extent of this terrace. Given the size of the site and that, despite intensive sampling, no artefactual material or environmental indicators were identified, no further work is recommended for the geoarchaeological investigations.

Bibliography

Bridgland, D.R. 1994 *Quaternary of the Thames*. Chapman and Hall. London.

British Geological Survey 1998 *Dartford: England and Wales Sheet 271, Solid and Drift Geology, 1: 50, 0000, 2nd series*. Keyworth. Nottingham.

Gibbard, P.L. 1994 *Pleistocene History of the Lower Thames Valley*, Cambridge University Press. Cambridge.

APPENDIX 4: GEOARCHAEOLOGICAL ASSESSMENT

By Kate Turner

1. INTRODUCTION

This report summarises the findings of the evaluation of two trial trenches from an archaeological evaluation on land at Lowfield Street, Dartford. The aim of this assessment is to describe and provide an interpretation of the sedimentary sequences uncovered during the course of the evaluation.

2. METHODOLOGY

Two 2-metre square geoarchaeological test pits were machine excavated within the area of previously excavated archaeological evaluation trenches. Sediment was removed in spits and recorded upon reaching discrete sedimentary boundaries; upon exposure of a representative section of the stratigraphic sequence, digging was halted and the sequence was logged following the standard recording procedure (Jones *et al*., 1999). One-hundred litre sediment samples were taken from each discrete unit and hand sorted for any artefactual or environmental evidence.

3. RESULTS

The following tables provide the depth, stratigraphy and descriptions of the deposits identified.

Figure 1: Trench 1, section 1

Depth (BGL) (m)	Depth OD (m)	Thickness (cm/m)	Stratigraphy	Context	Description
0	5.26	0.80	Topsoil		10 YR 4/2 dark greyish brown. Loose silty topsoil, with some large pebble inclusions towards base. Poorly sorted.
Sharp boundary					
0.80	4.46	0.16	Reworked terrace gravels		10 YR 4/4 brown. Weakly bedded homogenous dirty gravel unit with sandy matrix. Poorly sorted.
Diffuse boundary					
0.96	4.30	0.55			7.5 YR 5/6 strong brown. Weakly bedded homogenous dirty gravel unit with sandy matrix. Medium to large sized rounded to sub-angular clasts. Nodular cobbles to 200mm. 70-80% gravel, 20-30% sand.
Sharp boundary					

1.51	3.75	0.25	Terrace gravels		7.5 YR 5/4 brown. As above with bands of possible manganese staining.
Diffuse boundary					
1.76	3.50	1.34	Terrace gravels		7.5 YR 6/8 reddish yellow. Weakly bedded homogenous gravel unit in sandy matrix. Large to medium rounded to sub-angular clasts. Occasional coarse sand lenses. Possible iron and manganses staining. Water ingress at 2.90m OD. 50-60% gravel, 40-50% sand.
Sharp boundary					
3.10	2.16		Basal sand unit (poss. Thanet sands)		Gley 1 8/10 GY light greenish grey. Grey green sand unit.

Figure 2: Trench 2, section 1

Depth (BGL) (m)	Depth OD (m)	Thickness (cm/m)	Stratigraphy	Context	Description
0	5.23	0.25	Made ground		Demolition rubble
Diffuse boundary					
0.25	4.98	0.50	Topsoil		10 YR 4/2 dark greyish brown. Loose silty topsoil, with some large pebble inclusions towards base. Poorly sorted.
Sharp Boundary					
0.75	4.48	0.15	Reworked terrace gravels		10 YR 4/4 brown. Weakly bedded sandy gravel unit contaminated with agricultural topsoil. Poorly sorted.
Diffuse Boundary					
0.90	4.33	1.34	Terrace gravels		7.5 YR 6/8 reddish yellow. Weakly bedded homogenous gravel unit in sandy matrix. Large to medium rounded to sub-angular clasts. Poorly sorted. Water ingress at 2.99m OD. Percentage of sand increases towards base of deposit, along with average clast size.
Machining abandoned due to instability					

4. DISCUSSION AND RECOMMENDATIONS

Quaternary deposits were generally homogenised across the site; weakly bedded sandy gravels were encountered at maximum depths of 4.3 and 4.33 metres OD, with the complete extent only

being reached in trench 1. Based on British Geological Survey data for the region this would suggest the gravel terrace could be attributed to the Taplow gravel formation. With the exception of a small number of flint artefacts, no cultural or environmental material was identified in these deposits, therefore further sampling is not recommended for either environmental or geoarchaeological purposes.

APPENDIX 5: POTTERY ASSESSMENT

Chris Jarrett

Introduction

The pottery assemblage consists of 10 sherds, representing 9 estimated number of vessels (ENV) and weighing 120g. The pottery dates to the Medieval and late Medieval/early Post-Medieval period. The condition of the pottery is good and only comprises sherd material which contains diagnostic parts, e.g. rims and bases. None of the pottery is abraded and it was most likely to have been deposited fairly rapidly after breakage, although the different pottery types represented indicate that residual material is likely to be present. Pottery was quantified by sherd count, estimated number of vessels (ENV) and weight. The material was recovered from three contexts as small (30 sherds or less) sized groups. The coding of the pottery types is according to the coding system employed by the Canterbury Archaeological Trust (e.g. Cotter 2006). However, there are two fabrics represented by four sherds that have been catalogued as miscellaneous late Medieval/transitional period wares (LM100). These pottery types are high-fired and fit into a tradition found in the Home Counties, but absent from the London area production centres. Although an Essex source should not be ruled out for these LM100 fabrics, they are more likely to be from local production sources and are different to those contemporaneous types produced in the Weald, central (the Medway area) and southern Kent (e.g. Biddenden and Hareplain) and were produced during the period *c*. 1450–1600. The pottery is presented as an index.

Index

Context [1], spot date: *c*. 1125–1250

West Kent fine sandy (EM4), 1125–1250, 1 sherd, 1 ENV, 9g, form: cooking pot or jar. Convex base sherd, thin walled and reduced

Context [4], spot date: *c*. 1450–1600

North or west Kent sandy ware (M38A), 1150-1400, 1 sherd, 1 ENV, 14g, form: cooking pot or jar. Rim sherd, expanded, narrow, flat top, rounded edge and a, short curving neck. Includes shell in the fabric

North or west Kent sandy ware (M38A), 1150-1400, 1 sherd, 1 ENV, 7g, form: cooking pot or jar. Rim sherd, expanded, narrow flat top with a rounded edge and under cut, short curving neck. Includes shell in the fabric

North or west Kent sandy ware (M38A), 1150-1400, 1 sherd, 1 ENV, 12g, form: cooking pot or jar. Rim sherd, expanded, wide and with a squared edge. Includes shell in the fabric

Miscellaneous unidentified English ware (LM100), c. 1450–1600, 3 sherds, 2 ENV, 40g, form: unidentified. Body sherds, one of which has external clear glaze drips. High-fired late Medieval/transitional fine sandy ware in the south-east England/Home Counties tradition

Total: 6 sherds, 5 ENV, 73g

Context [6], spot date: *c*. 1450–1600

North or west Kent sandy ware (M38A), 1150-1400, 2 sherd, 2 ENV, form: cooking pot or jar. Body sherds, reduced. Profuse shell inclusions

Miscellaneous unidentified English ware (LM100), 1 sherd, 1 ENV, 15g, form: unidentified. Body sherd, late Medieval/transitional very high-fired fine ware in the south-east England/Home Counties tradition. External grey-brown wash, internal and external oxidised surfaces, purple-grey core.

Total: 3 sherds, 3 ENV, 38g

Significance, potential and recommendations for further work

The pottery has some significance at a local level for demonstrating Medieval and late Medieval/early Post-Medieval activity on the site. The main potential of the pottery is to date the contexts it was recovered from and inform upon site activities. There are no recommendations for further work on the material at this stage, although its importance should be reviewed in the event of more pottery being recovered from future archaeological work on the site.

Reference

Cotter, J, 2006. The pottery. In K. Parfitt, B. Corke & J. Cotter *Townwall Street, Dover Excavations 1996*. The archaeology of Canterbury New Series Volume III. Canterbury Archaeological Trust. 121-254.

APPENDIX 6: BUILDING MATERIAL ASSESSMENT

Amparo Valcarcel

Context	Fabric	Form	Size	Date range of material		Latest dated material		Spot date	Spot date with mortar
1	Local sandy fabric	Roman sandy tegula	1	50	400	50	400	50-400	No mortar
9	Local sandy fabric	Post Medieval sandy peg tile	1	1450	1600	1450	1600	1450-1600	No mortar
10	Local silty fabric	Silty peg tile	1	1450	1600	1450	1600	1450-1600	No mortar

Review

The small assemblage (3 fragments) consists mainly of small pieces of fragmentary Roman and post Medieval ceramic building material and is limited to a *tegula* and peg tiles. The moulding sand is medium to coarse and they are dated probably from 1450 to 1600.

The building material assemblage reflects the post Medieval development of this site. The *tegula* fragment provides a Roman activity along this area. No further work recommended.

APPENDIX 7: ANIMAL BONE ASSESSMENT

Karen Deighton

Two fragments of animal bone were recovered from Medieval contexts during the course of evaluation. These were as follows:

Context 1 Cattle distal scapula heavily butchered

Context 6 Cattle size rib fragment heavily butchered

APPENDIX 8: OASIS FORM

13 OASIS ID: preconst1-276569

Project details

Project name	Land at Lowfield Street, Dartford, Kent DA1 1EW, An Archaeological and Geoarchaeological Evaluation
Short description of the project	An archaeological and geoarchaeological evaluation conducted by Pre-Construct Archaeology Ltd on Land at Lowfield Street, Dartford, Kent, DA1 1EW. The site is located within the borough of Dartford and is centred at TQ 5411 7391, between 8th and 10th February 2017. Natural Deposits of Taplow Gravels were located at between 4.38m OD to the west of the site and 4.13m OD to the east. The natural gravel was cut by a ditch and two pits dated to the medieval and late medieval to early post-medieval periods. The features were sealed by an undated possible gravel surface, which was in turn sealed by post-medieval horticultural layers.
Project dates	Start: 08-02-2017 End: 10-02-2017
Previous/future work	No / Yes
Any associated project reference codes	KLFS17 - Sitecode
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Current Land use	Other 13 - Waste ground
Monument type	DITCH Medieval
Monument type	PIT Medieval
Monument type	PIT Medieval
Significant Finds	POTTERY Medieval
Methods & techniques	""Environmental Sampling"","Sample Trenches""
Development type	Urban residential (e.g. flats, houses, etc.)
Prompt	Voluntary/self-interest
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	KENT DARTFORD DARTFORD Lowfield Street

Postcode	DA1 1EW
Study area	360 Square metres
Site coordinates	TQ 5411 7391 51.442667374723 0.217754713017 51 26 33 N 000 13 03 E Point
Height OD / Depth	Min: 4.13m Max: 4.38m

Project creators

Name of Organisation	Pre-Construct Archaeology Limited
Project brief originator	Kent County Council Heritage Conservation Group
Project design originator	Peter Moore
Project director/manager	Peter Moore
Project supervisor	Guy Seddon
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Urban Enhance

Project archives

Physical Archive recipient	Local museum
Physical Contents	"Animal Bones","Ceramics"
Digital Archive recipient	Local museum
Digital Contents	"Animal Bones","Ceramics","Stratigraphic","Survey"
Digital Media available	"Images raster / digital photography","Spreadsheets","Text"
Paper Archive recipient	Local Museum
Paper Contents	"Animal Bones","Ceramics","Stratigraphic","Survey"
Paper Media available	"Context sheet","Drawing","Matrices","Photograph","Plan","Report","Section","Survey","Unpublished Text"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological and Geoarchaeological Evaluation of Land at Lowfield Street, Dartford, Kent, DA1 1EW
Author(s)/Editor(s)	Seddon, G
Date	2017
Issuer or publisher	Pre-Construct Archaeology Ltd
Place of issue or publication	Brockley, London
Description	Unpublished client report
Entered by	Peter Moore (pmoore@pre-construct.com)
Entered on	17 March 2017

OASIS:

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