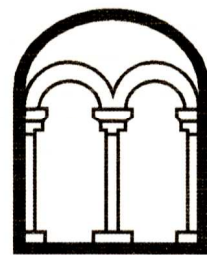


**CHAUL END VEHICLE STORAGE CENTRE
CADDINGTON
BEDFORDSHIRE**

**REPORT ON ARCHAEOLOGICAL MONITORING
AND
QUARternary GEOARCHAEOLOGY**

Albion
archaeology



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7. APPENDIX 1: WRITTEN SCHEME OF INVESTIGATION

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Figure 1: Site location plan

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Preface

Every effort has been made in the preparation of this document to provide as complete a summary as possible within the terms of the method statement. All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

Acknowledgements

The project was commissioned by CgMs Consulting Ltd on behalf of General Motors and monitored on behalf of the Local Planning Authority by Hannah Firth, Central Bedfordshire Council Archaeologist. The archaeological monitoring was undertaken by Mark Phillips (Project Officer). This report has been prepared by Mark Phillips and includes a report on the Quaternary geoarchaeology by Peter Allen, David Bridgland and Mark White. The figures have been produced by Joan Lightning (CAD Technician). All Albion projects are under the overall management of Drew Shotliff (Operations Manager).

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Key Terms

The following terms or abbreviations are used throughout this report:

CBCA	Central Bedfordshire Council Archaeologist
HER	Central Bedfordshire and Luton Historic Environment Record
PDA	Potential development area
WSI	Written Scheme of Investigation



Non-Technical Summary

The owners of a site centred on National Grid TL 0578 2121 to the east of Chaul End Road, Chaul End, near Caddington, Bedfordshire are undertaking geotechnical survey work in advance of a possible future application for planning permission to redevelop the site for residential use. The heritage aspects of the proposed application are being dealt with by CgMs Consulting Ltd. Discussions with the Central Bedfordshire Council Archaeologist (CBCA) identified the need for archaeological monitoring of the geotechnical survey work. Albion Archaeology was commissioned to undertake the archaeological monitoring. Previous investigations in the area around Caddington have produced evidence dating from the Palaeolithic period and so specialists in geoarchaeology (Peter Allen) and Palaeolithic archaeology (David Bridgland and Mark White) attended the site to assess the potential for Palaeolithic deposits.

Seven geotechnical test pits were examined and the three with the greatest potential for survival of Palaeolithic deposits were examined by the specialists in Quaternary geoarchaeology.

The investigation of the site found no evidence of activity pre-dating the modern use of the site. No archaeological features were identified in the trenches and no artefacts were recovered from the trenches or the excavated spoil.

It is clear that the surface of the site has been remodelled in the modern period. It is likely that the ground surface in the higher part of the site, mostly the northern half, has been truncated. All of the trenches examined contained layers of compacted clay to form a sub-base for the current car park surface. In the trenches in the northern half of the site the compacted clay lay directly on the underlying geological deposit. The car park was constructed in the 1990s and plans from before this period show a vehicle testing ground covered by test tracks. No evidence for the test tracks was found, suggesting that the ground surface has been truncated.

In the southern half of the site some of the ground has been built-up during the construction of the current car park. In Trenches 7 and 8 levelling layers of redeposited clay seal topsoil containing 20th-century brick rubble.

Investigation of the geological deposits showed a layer of Clay-with-flints overlying the Chalk in the northern part of the site in Trenches 17, 18, 22 and 23. A Brickearth deposit was identified in Trench 22, within a small circular depression in the Clay-with-flints. No worked flint was found in the Brickearth and none was identified during the excavation of the other trenches.

The Palaeolithic artefacts that have been recovered from previous investigations in the Caddington area were recovered from the Brickearth, mostly during quarrying operations in the later 19th and early 20th century. The Brickearth that was identified during this investigation was limited to a very small area in Trench 22. The investigated trenches were targeted on those areas of the site considered most likely to contain archaeological deposits. Therefore, the potential for archaeological deposits across the remainder of the site, particularly in view of the observed level of truncation, is considered to be low.



1. INTRODUCTION

1.1 *Project Background*

General Motors, the owners of a site to the east of Chaul End Road, Chaul End, near Caddington, Bedfordshire, have commissioned survey work in advance of a possible future application for planning permission to redevelop the site for residential use. The heritage aspects of the proposed application are being dealt with by CgMs Consulting Ltd. As part of this work they have undertaken an archaeological desk-based assessment of the site (CgMs 2013).

Discussions between CgMs Consulting Ltd and the Central Bedfordshire Council Archaeologist (CBCA) identified the need for archaeological monitoring of the geotechnical survey work. Albion Archaeology was commissioned to produce a Written Scheme of Investigation (WSI) (Albion 2014) and to undertake the archaeological monitoring. The WSI details the methodology for the monitoring as agreed with the CBCA. Previous investigations in the area around Caddington have produced evidence dating from the Palaeolithic period (see section 1.3.1). Specialists in geoarchaeology (Peter Allen) and Palaeolithic archaeology (David Bridgland and Mark White) examined selected trenches to assess the potential for Palaeolithic deposits.

1.2 *Site Location and Description*

The site covers an area of approximately 24.5 hectares and is situated on land to the east of Chaul End Road, Chaul End. It is bordered to the west by Chaul End Road, and to the north, east and south by agricultural land and woodland. It is centred on National Grid TL 0578 2121 (Fig. 1).

The site varies in height between 176m and 180m OD and is surrounded by an earth bank with a crest at approximately 190m OD.

The bedrock consists of Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated) across the entire site. The recorded superficial deposits consist of Clay-with-flints across much of the site. This has been cut by a dry valley which crosses the southern part of the site. The base of the valley contains head deposits of silt, clay, sand and gravel.¹

Historically the land was farmland but in the mid-20th century it was developed as a vehicle test circuit. In the 1990s the test tracks were removed and replaced by a large expanse of hardstanding which was used as a vehicle storage area.

1.3 *Archaeological Background*

The archaeological background to the site has been set out in the desk-based assessment (DBA) (CgMs 2013). This examined historical map evidence and recorded heritage assets within a 1km radius of the PDA. The DBA forms the basis of the following summary with the addition of information relating to Palaeolithic evidence from a wider area than that covered by the DBA.

¹ Contains British Geological Survey materials ©2014



1.3.1 Palaeolithic

No Palaeolithic finds are known from the PDA but a number of sites are recorded from the surrounding area. Some of these are located a short distance beyond the study area covered by the DBA. Most are due to the work of Worthington Smith who in the late 19th and early 20th century recorded Palaeolithic remains found in the Brickearth quarries around Caddington. The Brickearth occurs as localised deposits within hollows in the top of the chalk. Finds made by Worthington Smith include refitting flakes indicating that some of these finds are from primary deposits. Other material occurs in derived contexts. The evidence has been summarised by Wymer (1999, 164 and 174–75). The evidence for Palaeolithic sites in Bedfordshire is also summarised in Luke (2007). The evidence recorded by Worthington Smith in this area has been reassessed by White (1997).

Wymer lists 26 sites in the area between Luton and Dunstable. The richest area of Worthington Smith's finds occurred around Caddington, a short distance to the south of the PDA (Wymer 1999, vol. 2, sites 1–6 on MAP 52). Later investigators have unsuccessfully attempted to relocate Worthington Smith's primary contexts (Wymer 1980).

1.3.2 Later prehistoric and Roman

A Neolithic axe was found to the south of the PDA (HER13567). Fieldwalking surveys have recovered Neolithic to the Bronze Age lithics in areas to the north, east and south of the DBA study area (HERs 16061, 16062, 16064, 16068, 16070 and 12455). Fieldwalking in advance of the widening of the M1 recovered a small amount of undiagnostic struck flint (EDB40).

A single sherd of Iron Age pottery was recovered to the north-west of the PDA (HER16064). Lynchets to the north of the PDA (HER212) represent the results of prehistoric or later cultivation.

Fieldwalking surveys close to the PDA have recovered Roman pottery and tile (EBD40, HER16061) suggesting the possibility of farmsteads and agricultural activity from this time. The Roman settlement of *Durocobravis* (Dunstable) was located 3.5km to the north-west of the PDA.

1.3.3 Medieval

Evidence of medieval settlement comprises the hamlet of Chaul End (HER16989) to the north-west of the PDA and a building and pottery in Badgerdell Wood (HER16074) to the east of the PDA. Agricultural activity is represented by ridge and furrow (HER14092) and lynchets (HERs 19660 and 212). Medieval pottery, probably spread by manuring, has been found from a number of locations during fieldwalking (HERs 15858, 16062 and EBD40). Other records comprise spot finds from metal-detecting (HER 18319, 19286 and 19287).

1.3.4 Post-medieval

Historical maps from the 18th century onwards show the PDA as agricultural land. In the north-west part of the PDA this included the buildings and closes belonging to Chaul End Farm (HER13802). Chaul End Farmhouse (HER6837) close to the north-west of the PDA is a Grade II listed, timber-framed 17th century building with later brick refacing.



During the 20th century most of the farm buildings were removed and the site developed first as a vehicle test track and then as a vehicle storage area. The modern development of the site appears to have involved levelling of the site, probably associated with the construction of the larger earth bank around the exterior.

1.4 **Project Objectives**

The project comprises archaeological monitoring during the excavation of geotechnical test-pits. The general objectives of the investigation were to determine:

- the date, nature and extent of any activity or occupation within the PDA;
- the relationship of any remains found to the surrounding contemporary landscapes.

The local and regional research contexts are provided by Glazebrook (1997), Brown and Glazebrook (2000), Oake et al (2007) and Medlycott (2011).

Existing archaeological background information shows some limited but untested potential for remains dating from the Palaeolithic, prehistoric, Roman, medieval and post-medieval periods. *In situ* remains dating from the Palaeolithic period, if present, would be of regional and national significance. Oake (2007, 8) notes that almost all of our understanding of this period in Bedfordshire is based on the records made at the turn of the 19th/20th centuries and identifies a fundamental need to improve and develop our understanding of this period. To assess the potential of the site for remains of this period the on-site archaeological team included specialists in Palaeolithic studies and a geoarchaeologist.

1.5 **Methodology**

The detailed methodology for the project is set out in the WSI (Albion 2014). The excavation of geotechnical test pits was monitored from 1st to 3rd April 2014. P Allen, D Bridgland and M White attended the site on 1st and 2nd April to assess the potential for Palaeolithic deposits.

A selection of trenches within a larger group of geotechnical borehole and test pits was observed. Trenches 7, 8, 16, 17, 18, 22 and 23 were recorded for potential archaeological remains. Trenches 16, 17 and 22 were deemed to have the greatest potential for possible survival of Palaeolithic deposits and were monitored and recorded for quaternary deposits.

Unique context numbers were assigned for the separate deposits. The contexts were assigned in blocks by trench, e.g. Trench 7 context block 70–79, Trench 8 context block 80–89, etc. Context numbers referred to in the text appear in brackets, e.g. (84).



2. RESULTS OF ARCHAEOLOGICAL MONITORING

M. Phillips

2.1 Introduction

The deposits observed within the trial holes are described below in chronological order. No archaeological features were identified and so all of the recorded deposits were geological layers or modern construction/levelling layers. The locations of the recorded trenches are indicated in Figure 1 and sections through the deposits are shown in Figure 2. Detailed information on the deposits can be found in Appendix 1.

No artefacts were collected. The only artefactual material observed consisted of fragments of brick in the modern deposits.

2.2 Modern Deposits

These consist of all horizons above undisturbed geological layers.

2.2.1 Tarmac and make-up layers

The whole site is surfaced with tarmac apart from a perimeter strip under trees and grass. The tarmac surface was *c.*100mm thick and had been laid directly over a sub-base of compacted clay (indicated as make-up layers in Appendix 1). The latter was generally light yellow or yellow brown in colour with varying concentrations of stones. In some trenches the make-up deposit contained fragments of brick. The overall depth of the tarmac and make-up layers varied from 300–480mm.

2.2.2 Levelling layers

Layers of clay seen in Trench 7 (72, 73 and 74) and Trench 8 (82) are interpreted as a levelling deposit used to infill a hollow, probably as part of the construction of the present car park. The layers consist mainly of grey or yellow brown clay, some of them mixed. Layer (74) was mid red brown clay with small to medium stones, probably re-deposited Clay-with-flints derived from another part of the site.

2.2.3 Buried soil layer

In Trenches 7 and 8 a dark grey clay-silt layer (75 and 83) up to 0.5m thick was found beneath the levelling layers. It contained organic material and roots. The layer is a buried topsoil deposit located within a former hollow. It contained some brick rubble made up of Fletton-type brick fragments, some of which were still cemented together. The rubble could be derived from site clearance work prior to the construction of the present car park. This type of brick did not come into general use until the early 20th century indicating a recent date for this deposit.

2.3 Geological Deposits

The geological deposits observed in Trenches 16, 17 and 22 are described in detail in Section 3 of this report (Allen, Bridgland & White). The following section provides details of the geological deposits recorded during archaeological



monitoring.

2.3.1 Brickearth

A small deposit of Brickearth (222) was found in Trench 22 filling a circular depression within the Clay-with-flints (see Section 3, Appendix 3, Unit 22.03). No flints were found in the Brickearth.

2.3.2 Plateau Drift

In Trench 16 a layer of yellow-brown clay (163) containing flint and lenses of silt is interpreted as Plateau Drift (see Section 3, Appendix 1, Unit 16.04).

2.3.3 Clay-with-flints

Clay-with-flints was found overlying the Chalk in Trenches 17, 18, 22 and 23. In Trench 22 it extended to a depth of 3.8m below the ground surface. Elsewhere the layer was thinner. Trench 17 was located on the boundary of the Clay-with-flints where it is truncated by a dry valley that traverses the southern half of the PDA.

At the south of the PDA no Clay-with-flints occurred in Trenches 7 and 8 indicating that the boundary of the deposit to this side of the dry valley lies further to the south.

2.3.4 Chalk

Chalk was located in all of the trenches. Its depth varied from 0.48–4m below the ground surface. It lay closest to the surface in Trenches 16 and 17 and deepest in Trenches 7 and 8 where a former dry valley has been infilled in the modern period to level the site.

2.3.5 Hill wash

In Trenches 7 and 8 the chalk bedrock was covered by a layer up to 2.45m thick of light yellowish brown silty clay (76 and 84) containing frequent small angular flint. The deposit lies within the base of a former dry valley which crosses the southern part of the PDA on a WNW-ESE alignment. The deposit is likely to be hillwash or head deposit that has accumulated in the former valley. The upper part of the valley was infilled to level the site prior to the construction of the existing car park.



2.4 Trench Summary Tables

2.4.1 Trench 7

Max Dimensions: Length: 3.00 m. Width: 1.00 m. Depth to Archaeology Min: 1.85 m. Max: m.

Co-ordinates: OS Grid Ref.: TL (Easting: 5895; Northing: 20973)

Reason: Geotechnical test pit near southern boundary of chalk

Context:	Type:	Description:	Excavated:	Finds Present:
70	Tarmac	Car park surface	<input checked="" type="checkbox"/>	<input type="checkbox"/>
71	Make up layer	Light yellow clay frequent small stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
72	Levelling layer	Mixed, layered deposit, mosly yellow-brown clay	<input checked="" type="checkbox"/>	<input type="checkbox"/>
73	Levelling layer	Mid grey clay occasional small stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
74	Levelling layer	Mid red brown clay moderate small-medium stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
75	Buried topsoil	Dark grey clay silt occasional medium-large CBM Including Fletton type brick, Waterlogged peaty deposit	<input checked="" type="checkbox"/>	<input type="checkbox"/>
76	Natural	Light yellow brown silty clay frequent small stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
77	Natural	Chalk	<input type="checkbox"/>	<input type="checkbox"/>

2.4.2 Trench 8

Max Dimensions: Length: 3.00 m. Width: 1.00 m. Depth to Archaeology Min: 1.25 m. Max: m.

Co-ordinates: OS Grid Ref.: TL (Easting: 5897; Northing: 20954)

Reason: Geotechnical test pit near southern boundary of chalk

Context:	Type:	Description:	Excavated:	Finds Present:
80	Tarmac	Car park surface	<input checked="" type="checkbox"/>	<input type="checkbox"/>
81	Make up layer	Light yellow clay frequent small stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
82	Levelling layer	Light yellow brown clay	<input checked="" type="checkbox"/>	<input type="checkbox"/>
83	Buried topsoil	Dark grey clay silt Waterlogged peaty deposit	<input checked="" type="checkbox"/>	<input type="checkbox"/>
84	Natural	Light yellow brown silty clay frequent small stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
85	Natural	Chalk	<input type="checkbox"/>	<input type="checkbox"/>



2.4.3 Trench 16

Max Dimensions: Length: 5.00 m. Width: 2.50 m. Depth to Archaeology Min: 0.45 m. Max: m.

Co-ordinates: OS Grid Ref.: TL (Easting: 5773; Northing: 21259)

Reason: Geotechnical and archaeological test pit

Context:	Type:	Description:	Excavated:	Finds Present:
160	Tarmac	Car park surface	<input checked="" type="checkbox"/>	<input type="checkbox"/>
161	Make up layer	Mid yellow brown clay occasional small CBM, moderate small stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
162	Make up layer	Mid grey brown clay occasional small CBM, occasional medium stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
163	Natural	Mid yellow brown clay occasional medium-large stones With patches of sand towards base of deposit	<input checked="" type="checkbox"/>	<input type="checkbox"/>
164	Natural	Chalk	<input type="checkbox"/>	<input type="checkbox"/>

2.4.4 Trench 17

Max Dimensions: Length: 8.00 m. Width: 1.00 m. Depth to Archaeology Min: 0.48 m. Max: m.

Co-ordinates: OS Grid Ref.: TL (Easting: 5897; Northing: 21228)

Reason: Geotechnical test pit located on northern boundary of the chalk

Context:	Type:	Description:	Excavated:	Finds Present:
170	Tarmac	Car park surface	<input checked="" type="checkbox"/>	<input type="checkbox"/>
171	Layer	Light yellow brown clay frequent flecks chalk	<input checked="" type="checkbox"/>	<input type="checkbox"/>
172	Natural	Mid red brown clay moderate medium stones (Clay with Flints)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
173	Natural	Chalk	<input type="checkbox"/>	<input type="checkbox"/>

2.4.5 Trench 18

Max Dimensions: Length: 3.00 m. Width: 1.00 m. Depth to Archaeology Min: 0.35 m. Max: m.

Co-ordinates: OS Grid Ref.: TL (Easting: 5653; Northing: 21237)

Reason: Geotechnical test pit for soakaway test

Context:	Type:	Description:	Excavated:	Finds Present:
180	Tarmac	Car park surface	<input checked="" type="checkbox"/>	<input type="checkbox"/>
181	Layer	Light yellow brown silty clay	<input checked="" type="checkbox"/>	<input type="checkbox"/>
182	Natural	Mid red brown clay (Clay with Flints)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
183	Natural	Chalk	<input type="checkbox"/>	<input type="checkbox"/>



2.4.6 Trench 22

Max Dimensions: Length: 5.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.38 m. Max: m.

Co-ordinates: OS Grid Ref.: TL (Easting: 5641: Northing: 21345)

Reason: Geotechnical and archaeological test pit

Context:	Type:	Description:	Excavated:	Finds Present:
220	Tarmac	Car park surface	<input checked="" type="checkbox"/>	<input type="checkbox"/>
221	Make up layer	Mid yellow brown clay occasional small CBM, moderate small stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
222	Natural	Mid brown silty clay (Brickearth)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
223	Natural	Mid red brown chalk moderate medium stones (Clay with Flints)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
224		Chalk	<input type="checkbox"/>	<input type="checkbox"/>

2.4.7 Trench 23

Max Dimensions: Length: 3.00 m. Width: 1.00 m. Depth to Archaeology Min: 0.3 m. Max: m.

Co-ordinates: OS Grid Ref.: TL (Easting: 5735: Northing: 21367)

Reason: Geotechnical test pit for soakaway test

Context:	Type:	Description:	Excavated:	Finds Present:
230	Tarmac	Car park surface	<input checked="" type="checkbox"/>	<input type="checkbox"/>
231	Make up layer	Mid grey brown clay occasional small stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
232	Make up layer	Light yellow brown silty clay frequent small stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
233	Natural	Mid red brown clay moderate medium stones (Clay with Flints)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
234	Natural	Chalk	<input type="checkbox"/>	<input type="checkbox"/>



3. REPORT ON QUATERNARY GEOARCHAEOLOGY

P. Allen, D. Bridgland and M. White

3.1 Introduction

The site lies approximately 3.5 km west of the centre of Luton and 1.5 km north Caddington, a village noted for its Palaeolithic finds from local brickpits. The local geology is shown on British Geological 1:50,000 Sheet 220 (Leighton Buzzard) and on Figure 1.

3.2 Geology, Geomorphology and Archaeology

The site lies high on the Chiltern dip-slope, with Clay-with-flints overlying Middle Chalk. A northwest-southeast shallow valley crosses the site, cutting through to the Chalk. This is a simplification, as there are also Plateau Drift and Brickearth deposits in the area. Around the village of Caddington, seven brickpits yielded a very large number of flint artefacts, including some 500 refits, in primary context, from horizons within Brickearth. These sites were described by Worthington Smith in a number of publications between 1879 and 1918, notably in 1894, *Man the Primeval Savage*, published by Stanford (London). Caddington was Smith's flagship area. The most recent investigations have been by White (1997).

3.3 Site Investigations

Three trial pits were monitored: TP 16, TP 19 and TP 22. The locations of the pits are shown on Figure 1.

Descriptions of the trial pits are given in Appendices 1–3 (Tables 1–3, log sections 1–3 and in Photographs 1–4).

3.4 Description

The entire site was covered by tarmac below which was a sub-course. The material of the sub-course was clayey and flinty and could be identified positively when it included bricks or other material of human origin, as in TP 16; but in TP 17 and TP 22, the matter was less clear.

Beneath the sub-course, Plateau Drift was identified in TP 16, Clay-with-flints in TP 17 and Brickearth overlying Clay-with-flints in TP 22. The maximum thickness of the Brickearth was c.1.0 m and it appeared to be confined to a circular area (Photograph 4), possibly infilling a solution hollow in the Chalk below. No flint horizons were observed within the Brickearth.

An irregular surface of fragmented Chalk was reached in TP 16 and TP 17.



3.5 Appendix 1: Trial Pit 16

3.5.1 Table 1

TP 16, ground surface – not known; excavated to a depth of 1.2 m.

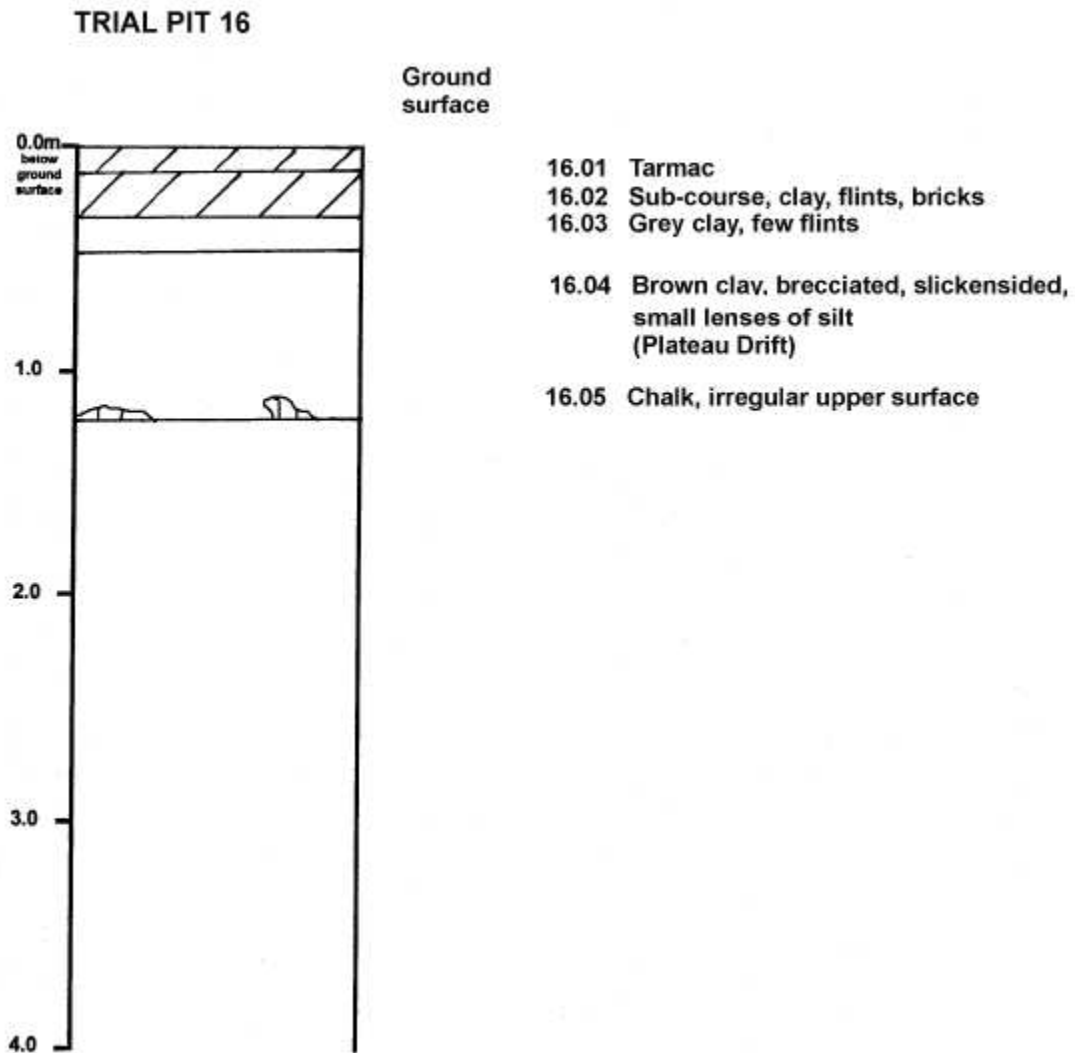
Unit	m bgs	mOD	Description
16.01	0.0.- 0.1		Tarmac
16.02	0.1 - 0.3		Sub-course Brown clay with some angular flint and brick material
16.03	0.3 – 0.45		Grey clay (2.5Y4/2, dark greyish brown) with scattered sub-angular flint.
16.04	0.45 – c.1.2		Flint-rich brown clay (10YR5/8, yellowish brown). Clay, brecciated and slickensided, with much manganese staining. Flints often angular, patinated, mostly 3-5 cm, occasional rounded red quartzites up to 12 cm. Some decomposed Chalk blocks, also small lenses of silty clay (7.5YR5/8, strong brown). Irregular lower junction with Chalk Interpreted as Plateau Drift
16.05	c. 1.2 +		Fragmented, blocky Chalk

bgs – metres below ground surface

OD – Ordnance Datum

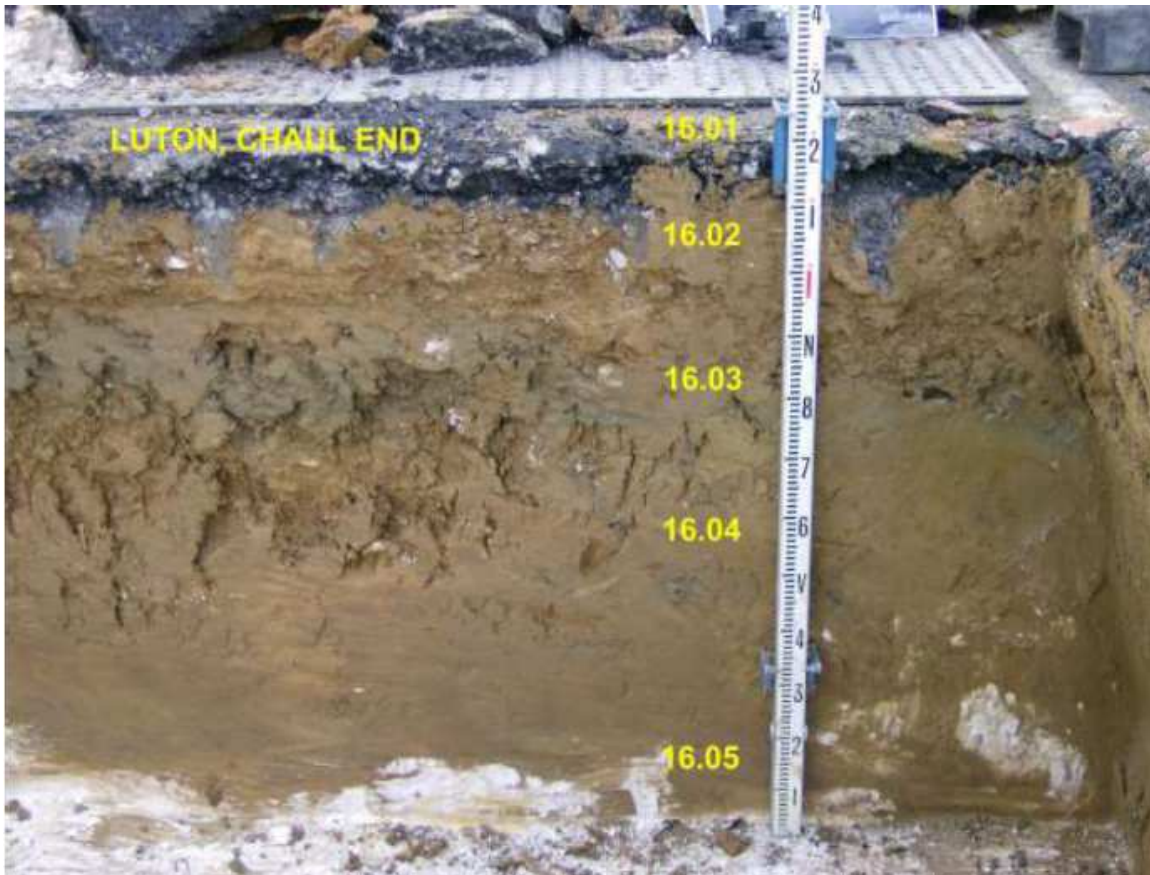


3.5.2 Log Section 1, TP16





3.5.3 Photograph 1, TP16





3.6 Appendix 2, Trial Pit 17

3.6.1 Table 2

TP 17, ground surface – not known; excavated to a depth of 1.25 m.

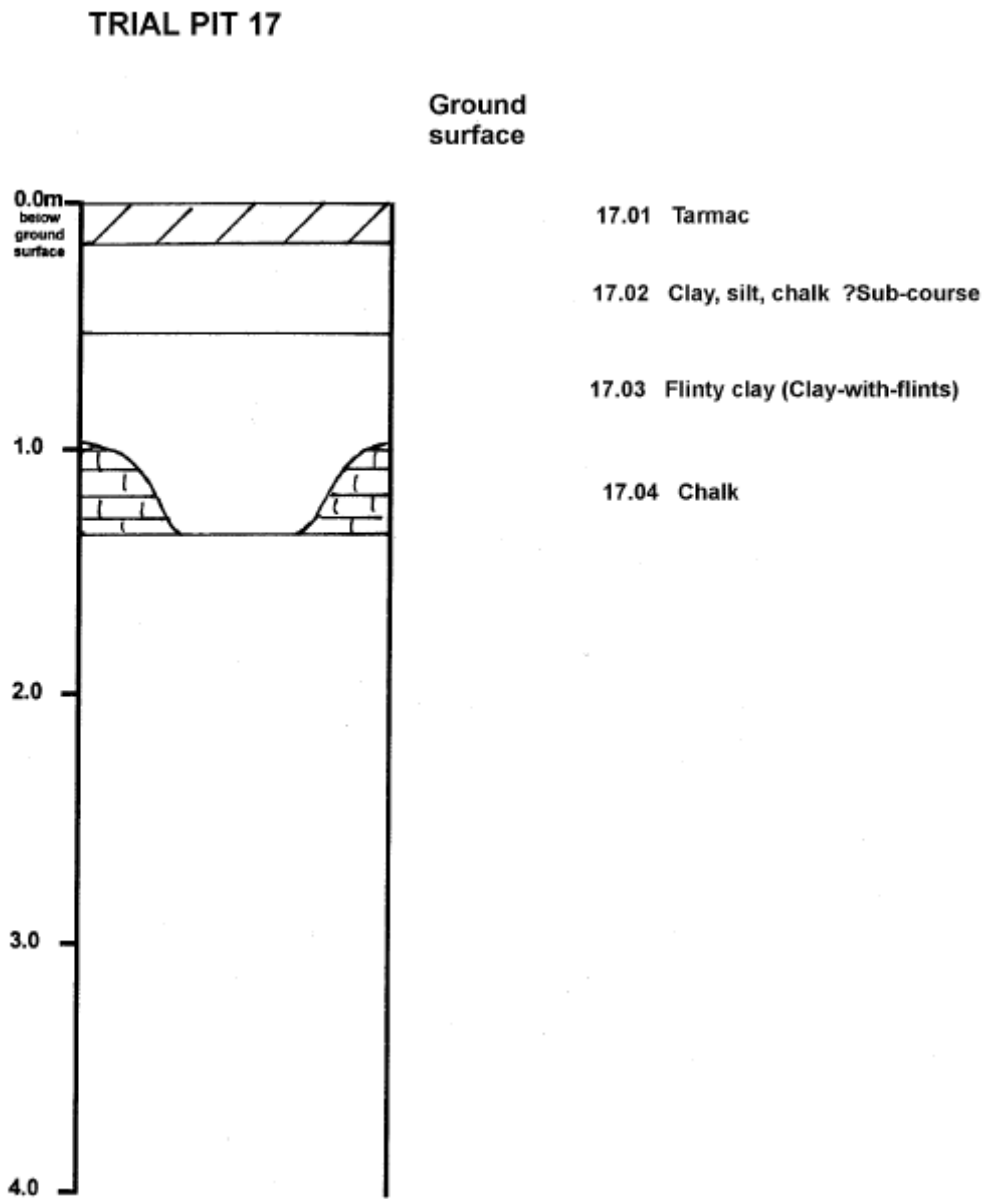
Unit	m bgs	mOD	Description
17.01	0.0.- 0.15		Tarmac
17.02	0.15 - 0.5		?Sub-course Brown (10YR5/8, yellowish brown) silty clay with angular flint and chalk
17.03	0.5 – c.1.2		Orange-red clay (5YR4/8, yellowish red). Relatively little flint. ?Clay-with-flints Irregular lower junction with Chalk
17.04	c. 1.2 +		Fragmented, blocky Chalk

bgs – metres below ground surface

OD – Ordnance Datum



3.6.2 Log Section 2, TP17





3.6.3 Photograph 2





3.7 Appendix 3, Trial Pit 22

3.7.1 Table 3

TP 22, ground surface – not known; excavated to a depth of 1.3 m.

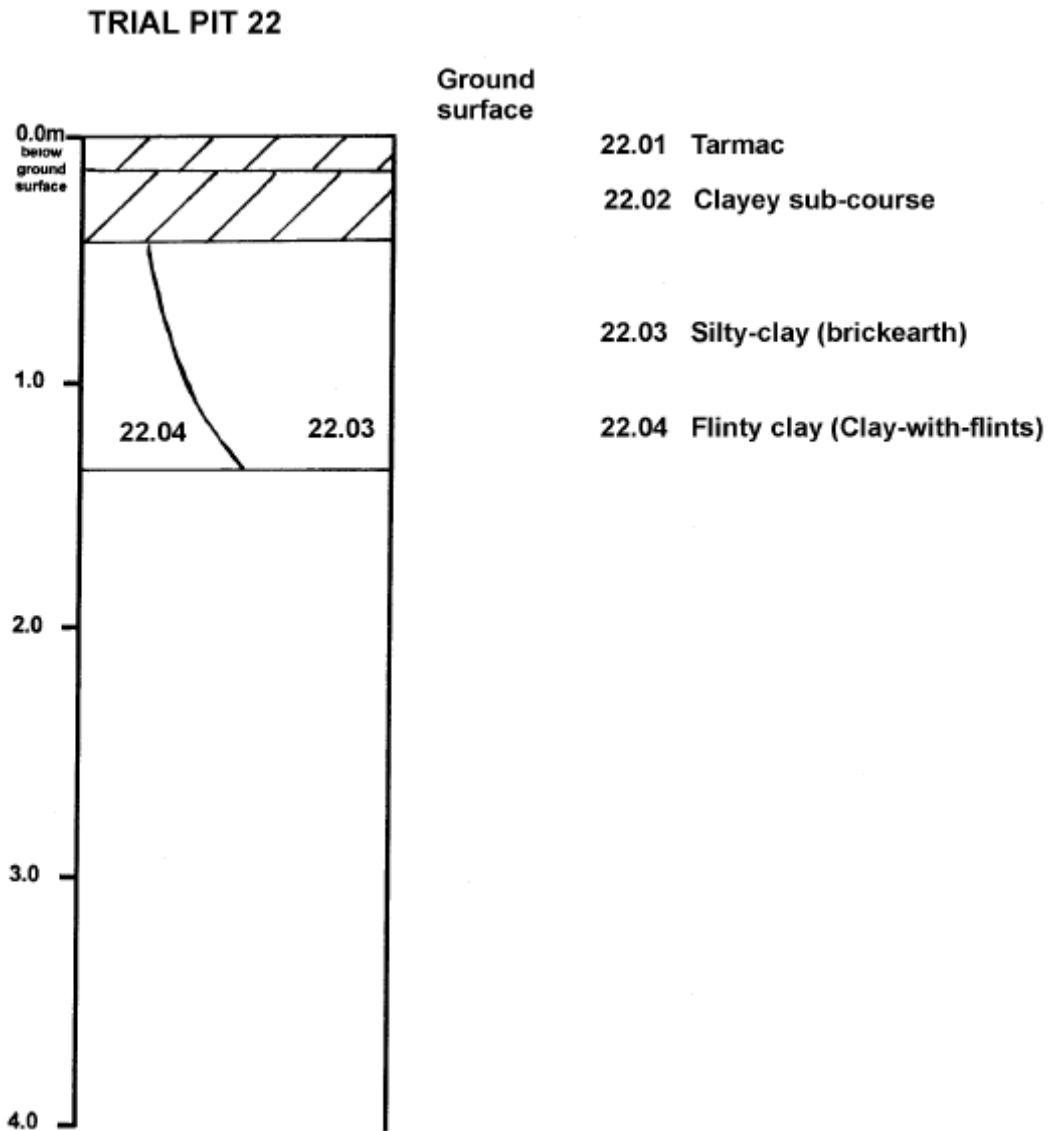
Unit	m bgs	mOD	Description
22.01	0.0.- 0.1		Tarmac
22.02	0.1 - 0.35		?Sub-course Silty clay with angular flint and chalk
22.03	0.35 – 1.3		Brown silty clay (7.5YR5/6, strong brown), no flints, desiccation cracking, with slickensiding. Steeply angled junction with 17.03 and shown to have a curved boundary when seen in plan in the floor of the pit. Considered to be infilling of a circular depression, possibly caused by solution a solution hollow in the Chalk below. Brickearth
22.04	0.35 – 1.3		Orange-red clay (2.5YR4/8, red) with grey mottles and coatings on slip faces (7.5YR7/2, pinkish grey). Brecciated and slickenside, manganese staining. Mix of heavily patinated nodular flint, up to 20 cm, and sub-angular flint up to 6 cm. Steeply angled junction with 17.04, such that both occupy the same height range Clay-with-flints

bgs – metres below ground surface

OD – Ordnance Datum

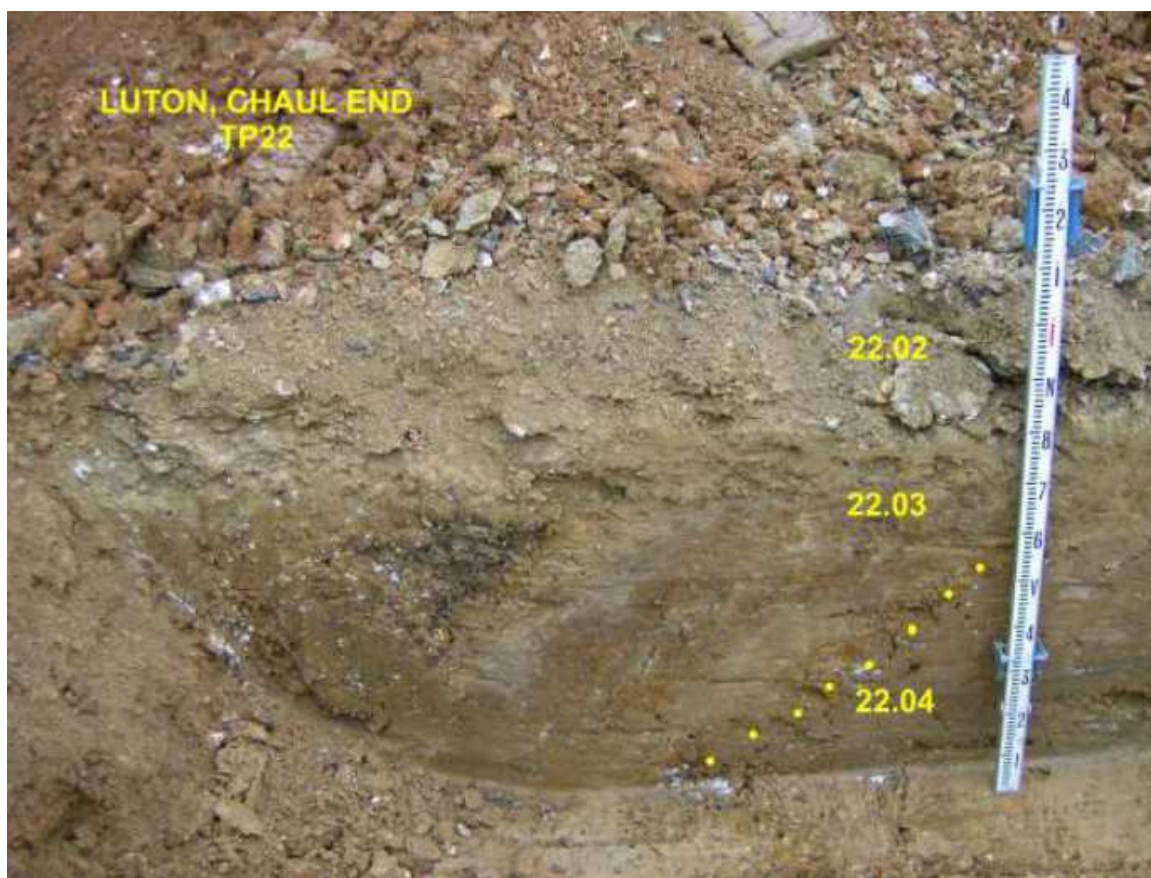


3.7.2 Log Section 3, TP22





3.7.3 Photography 3, TP22 vertical section





4. CONCLUSIONS

The investigation of the site found no evidence of activity pre-dating the modern use of the site. No archaeological features were identified in the trenches and no artefacts were recovered from the trenches or the excavated spoil.

It is clear that the surface of the site has been remodelled in the modern period. It is likely that the ground surface in the higher part of the site, mostly the northern half, has been truncated. All of the trenches examined contained layers of compacted clay to form a sub-base for the current car park surface. In the trenches in the northern half of the site the compacted clay lay directly on the underlying geological deposit. The car park was constructed in the 1990s and plans from before this period show a vehicle testing ground covered by test tracks. No evidence for the test tracks was found, suggesting that the ground surface has been truncated.

In the southern half of the site some of the ground has been built-up during the construction of the current car park. In Trenches 7 and 8 levelling layers of redeposited clay seal topsoil that contains 20th-century brick rubble.

Investigation of the geological deposits showed a layer of Clay-with-flints overlying the Chalk in the northern part of the site in Trenches 17, 18, 22 and 23. A Brickearth deposit was identified in Trench 22, within a small circular depression in the Clay-with-flints. No worked flint was found in the Brickearth and none was identified during the excavation of the other trenches.

The Palaeolithic artefacts that have been recovered from previous investigations in the Caddington area were recovered from the Brickearth, mostly during quarrying operations in the later 19th and early 20th century. The Brickearth that was identified during this investigation was limited to a very small area in Trench 22. The investigated trenches were targeted on those areas of the site considered most likely to contain archaeological deposits. Therefore, the potential for archaeological deposits across the remainder of the site, particularly in view of the observed level of truncation, is considered to be low.



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6. OASIS SUMMARY FORM - ALBIONAR1-174555

6.1 OASIS ID: *albionar1-174555*

Project details

Project name	Land at Chaul End, Caddington
Short description of the project	The owners of a site centred are undertaking geotechnical survey work in advance of a possible future application for planning permission to redevelop the site for residential use. Discussions with the Central Bedfordshire Council Archaeologist identified the need for archaeological monitoring of the geotechnical survey work. Previous investigations in the area around Caddington have produced evidence dating from the Palaeolithic period and so specialists in geoarchaeology (Peter Allen) and Palaeolithic archaeology (David Bridgland and Mark White) attended the site to assess the potential for Palaeolithic deposits. Seven geotechnical test pits were examined and the three with the greatest potential for survival of Palaeolithic deposits were examined by specialists in Quaternary geoarchaeology. The investigation of the site found no evidence of activity pre-dating the modern use of the site. No archaeological features were identified in the trenches and no artefacts were recovered from the trenches or the excavated spoil. The site has been remodelled in the modern period. The higher ground, mostly in the northern half has been subject to truncation probably during the construction of a vehicle testing ground and its subsequent conversion to a vehicle storage area. In the southern half of the site some of the ground has been built-up during the construction of the current vehicle storage area. Investigation of the geological deposits showed a layer of Clay-with-flints overlying the Chalk in the northern part of the site. A Brickearth deposit was identified in one trench, within a small circular depression in the Clay-with-flints. No worked flint was found in the Brickearth and none was identified during the excavation of the other trenches.
Project dates	Start: 01-04-2014 End: 03-04-2014
Previous/future work	No / Not known
Any associated project reference codes	CE2371 - Contracting Unit No.
Any associated project reference codes	LUTNM: 2014/11 - Museum accession ID
Type of project	Field evaluation
Monument type	None
Significant Finds	None
Methods & techniques	"Test Pits"
Development type	Not recorded
Prompt	Collecting Information in advance of Planning
Position in the planning process	Pre-application

Project location



Country	England
Site location	BEDFORDSHIRE SOUTH BEDFORDSHIRE CADDINGTON AND SLIP END Land at Chaul End, Caddington
Study area	17.00 Hectares
Site coordinates	TL 0578 2121 51.8789635271 -0.463101944637 51 52 44 N 000 27 47 W Point

Project creators

Name of Organisation	Albion Archaeology
Project brief originator	none
Project design originator	Albion Archaeology
Project director/manager	Mike Luke
Project director/manager	Mark Phillips
Project supervisor	No Supervisor

Project archives

Physical Archive Exists?	No
Digital Archive Exists?	No
Paper Archive recipient	Luton Museum
Paper Archive ID	LUTNM: 2014/11
Paper Contents	"other"
Paper Media available	"Context sheet", "Correspondence", "Miscellaneous Material", "Photograph", "Report"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Chaul End Vehicle Storage Centre, Caddington Bedfordshire Archaeological Monitoring and Quaternary Geoarchaeology
Author(s)/Editor(s)	'Phillips, M'
Author(s)/Editor(s)	'Allen, P'
Author(s)/Editor(s)	'Bridgland, D'
Author(s)/Editor(s)	'White, M'
Other bibliographic details	2014/82
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Issuer or publisher	Albion Archaeology



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8 May 2014

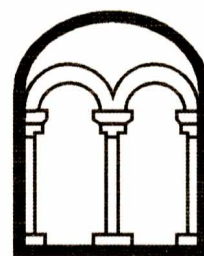


7. APPENDIX 1: WRITTEN SCHEME OF INVESTIGATION

**LAND AT CHAUL END
CADDINGTON
BEDFORDSHIRE**

**WRITTEN SCHEME OF INVESTIGATION
FOR A PROGRAMME OF
ARCHAEOLOGICAL INVESTIGATION, RECORDING,
ANALYSIS AND PUBLICATION**

Albion
archaeology



**LAND AT CHAUL END
CADDINGTON
BEDFORDSHIRE**

**WRITTEN SCHEME OF INVESTIGATION
FOR A PROGRAMME OF
ARCHAEOLOGICAL INVESTIGATION,
RECORDING, ANALYSIS AND PUBLICATION**

Project: CE2371
Accession Number: LUTNM: 2014/11
OASIS ref.: albionar1- 174555
Document: 2014/45
Version 1.0

18th March 2014

Compiled by	Approved by
M. Phillips	D. Shotliff

Produced for:
CgMs Consulting Ltd



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Figures

Figure 1: Site location showing proposed borehole and test pit locations

The figure is bound at the rear of the document.



Preface

All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

This document has been prepared by Mark Phillips (Project Officer).

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Version History

Version	Issue date	Reason for re-issue
1.0	18/03/2014	n/a

Key Terms

Throughout this document the following terms or abbreviations are used:

CBC	Central Bedfordshire Council
CBCA	Central Bedfordshire Council Archaeologist
Client	CgMs Consulting Ltd
HER	Central Bedfordshire Council's Historic Environment Record
IfA	Institute for Archaeologists
WSI	Written Scheme of Investigation



1. INTRODUCTION

1.1 *Planning Background*

The owners of a site to the east of Chaul End Road, Chaul End, near Caddington, Bedfordshire are undertaking geotechnical survey work in advance of a possible future application for planning permission to redevelop the site for residential use. The heritage aspects of the proposed application are being dealt with by CgMs Consulting Ltd, who have prepared an archaeological desk-based assessment (CgMs 2013).

Discussions between CgMs Consulting Ltd and the CBC Archaeologist have identified the need for archaeological monitoring of the geotechnical survey work.

1.2 *Status of WSI*

This written scheme of investigation represents a strategy document for carrying out archaeological investigation and monitoring works during the course of the geotechnical survey works. It describes the circumstances of the project, the scope of the work, and the procedures, methodologies and resources that are to be employed for its successful completion. This information is provided to assist the CBCA in monitoring and assessing the archaeological work on behalf of the Local Planning Authority.

1.3 *Site Location and Description*

The site covers an area of approximately 24.5 hectares and is situated on land to the east of Chaul End Road, Chaul End. It is bordered to the west by Chaul End Road, and to the north, east and south by agricultural land and woodland. It is centred on National Grid TL 0578 2121 (Fig. 1).

The site varies in height between 176m and 180m OD and is surrounded by an earth bank with a crest at approximately 190m OD.

The bedrock consists of Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated) across the entire site. The recorded superficial deposits consist of Clay-with-Flints across much of the site. This has been cut by a dry valley which crosses the southern part of the site. The base of the valley contains head deposits of silt, clay, sand and gravel.¹

Historically the land was farmland but in the mid 20th century it was developed as a vehicle test circuit. In the 1990s the test tracks were removed and replaced by a large expanse of hard standing which was used as a vehicle storage area.

In advance of proposals to redevelop the site for housing, geotechnical investigations are to be undertaken. These comprise the excavation of test pits (soakaway pits) and the drilling of window sample and cable percussion boreholes.

¹ Contains British Geological Survey materials ©2014



The geotechnical investigations will be archaeologically monitored in order to examine the site for archaeological potential, particularly in terms of the Palaeolithic period.

1.4 Archaeological Background

The archaeological background to the site has been set out in the desk-based assessment (DBA) (CgMs 2013). This examined historical map evidence and recorded heritage assets within a 1km radius of the PDA. The DBA forms the basis of the following summary with the addition of information relating to Palaeolithic evidence from a wider area than that covered by the DBA.

1.4.1 Palaeolithic

No Palaeolithic finds are known from the PDA but a number of sites are recorded from the surrounding area. Some of these are located a short distance beyond the study area covered by the DBA. Most are due to the work of Worthington Smith who in the late 19th and early 20th century recorded Palaeolithic remains found in the local quarries dug to extract brickearth. The finds come from localised deposits. It is thought that the collapse of the underlying chalk through solution led to the formation of water-filled hollows, which were subsequently filled with colluvial sediments. People and animals would have been attracted to these hollows. Finds made by Worthington Smith include refitting flakes indicating that some of these finds are from primary deposits. Other material occurs in derived contexts. The evidence has been summarised by Wymer (1999, 164 and 174–75). The evidence for Palaeolithic sites in Bedfordshire is also summarised in Luke (2007). The evidence recorded by Worthington Smith in this area has been reassessed by White (1997).

Wymer lists 26 sites in the area between Luton and Dunstable. The richest area of Worthington Smith's finds occurred around Caddington, a short distance to the south of the PDA (Wymer 1999, vol. 2, sites 1–6 on MAP 52). Later investigators have unsuccessfully attempted to relocate Worthington Smith's primary contexts (Wymer 1980).

1.4.2 Later prehistoric & Roman

A Neolithic axe was found to the south of the PDA (HER13567). Fieldwalking surveys have recovered Neolithic to the Bronze Age lithics in areas to the north, east and south of the DBA study area (HERs 16061, 16062, 16064, 16068, 16070 and 12455). Fieldwalking in advance of the widening of the M1 recovered a small amount of undiagnostic struck flint (EDB40).

A single sherd of Iron Age pottery was recovered to the north-west of the PDA (HER16064). Lynchets to the north of the PDA (HER212) represent the results of prehistoric or later cultivation.

Fieldwalking surveys close to the PDA have recovered Roman pottery and tile (EBD40, HER16061) suggesting the possibility of farmsteads and agricultural activity from this time. The Roman settlement of *Durocibrivis* (Dunstable) was located 3.5km to the north-west of the PDA.



1.4.3 Medieval

Evidence of medieval settlement comprises the hamlet of Chaul End (HER16989) to the north-west of the PDA and a building and pottery in Badgerdell Wood (HER16074) to the east of the PDA. Agricultural activity is represented by ridge and furrow (HER14092) and lynchets (HERs 19660 and 212). Medieval pottery, probably spread by manuring, has been found from a number of locations during fieldwalking (HERs 15858, 16062 and EBD40). Other records comprise spot finds from metal-detecting (HER 18319, 19286 and 19287).

1.4.4 Post-medieval

Historical maps from the 18th century onwards show the PDA as agricultural land. In the north-west part of the PDA this included the buildings and closes belonging to Chaul End Farm (HER13802). Chaul End Farmhouse (HER6837) close to the north-west of the PDA is a Grade II listed, timber-framed 17th-century building with later brick refacing.

During the 20th century most of the farm buildings were removed and the site developed first as a vehicle test track and then as a vehicle storage area. The modern development of the site appears to have involved levelling of the site, probably associated with the construction of the larger earth bank around the exterior.

1.5 Project Objectives

The project comprises archaeological monitoring during the excavation of engineering and geological test-pits. The general objectives of the investigation are to determine:

- the date, nature and extent of any activity or occupation within the PDA;
- the relationship of any remains found to the surrounding contemporary landscapes.

The local and regional research contexts are provided by Glazebrook (1997), Brown and Glazebrook (2000), Oake et al (2007) and Medlycott (2011).

Examination of the existing archaeological background information shows some limited but untested potential for remains dating from the Palaeolithic, prehistoric, Roman, medieval and post-medieval periods.

Of these periods, remains dating from the Palaeolithic would be the most significant. *In situ* remains dating from this period, if present, would be of regional and national significance. Oake (2007, 8) notes that almost all of our understanding of this period in Bedfordshire is based on the records made at the turn of the 19th/20th centuries and identifies a fundamental need to improve and develop our understanding of this period. To assess the potential of the site for remains of this period the on-site archaeological team will include a specialist in Palaeolithic studies and a geoarchaeologist.



2. METHOD STATEMENT

The methodological approach to the project is summarised below and detailed in the Appendices.

2.1 Standards

Throughout the project the standards and requirements set out in the following documents will be adhered to:

Albion Archaeology	<i>Procedures Manual: Volume 1 Fieldwork</i> (2 nd edn, 2001).
ALGAO	<i>Standards for Field Archaeology in the East of England. EAA Occasional Paper No. 14</i> (2003)
EAA	<i>Standards for Field Archaeology in the East of England</i> (2003)
English Heritage	<i>Management of Research Projects in the Historic Environment (MoRPHE) Project Managers' Guide</i> (2009)
	<i>Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation, 2nd edition</i> (2011)
IfA	<i>By-Laws and Code of Conduct</i>
	<i>Standard and Guidance for Archaeological Watching Briefs and Field Excavations</i> (updated 2008) and <i>finds</i> (updated 2008)
Luton Culture	<i>Procedure For Preparing Archaeological Archives For Deposition With Luton Culture 2010 - with minor updates July 2013</i>

2.2 Observation, Investigation and Recording

The planned works involve a number of geotechnical pits and boreholes. The planned test pits are soakaway pits — pits that are excavated to enable engineers to measure the rate at which water soaks into the ground. The boreholes consist of window sample boreholes and cable percussion boreholes. The former provide a continuous visible, sample through the deposits. The latter are used to build gain information on the depth and type of underlying deposits.

Two of the soakaway test pits will be dug to a size of 2m by 2m under archaeological supervision. The pits will be dug with a toothless bucket down to the top of archaeological deposits or the undisturbed geological deposit. If archaeological remains are present, these will be cleaned, sample excavated, planned and recorded before machine excavation recommences. Machine excavation will resume and excavation will proceed to the depth required for the geotechnical test. The geoarchaeologist and specialist in Palaeolithic archaeology will observe the excavated section and material to determine whether the deposits have the potential to contain remains dating from the Palaeolithic period.



Detailed methodology for the archaeological investigation in the soakaway pits is given in Appendix 1.

The excavation of the remaining soakaway test pits are expected to be of more restricted dimensions. These will be monitored during excavation for possible archaeological deposits and artefacts. A record of the deposits will be made and the potential for Palaeolithic deposits assessed.

Excavation of the window sample boreholes will be monitored to record the deposits and identify the potential for Palaeolithic deposits. Data from the cable percussion boreholes will be used to supplement the other observations and provide data to help predict the potential for Palaeolithic deposits.

2.3 Post-Fieldwork Analysis

During or immediately after fieldwork all records will be checked and cross-referenced to ensure they are internally consistent. Recording, cleaning and conservation of finds will follow the IfA Guidelines for Finds Work. Site drawings will be digitised and geo-referenced.

Data gathered during the fieldwork will be consolidated into an archive. This analysis work will be carried out using Albion's networked Access-based database system and GIS. The report will be sufficiently detailed to allow the results of the project to be interpreted without recourse to the site archive, and place them in their local, regional and national context. It will include appropriate illustrative material including copies of relevant parts of the drawn and photographic record.

2.4 Archiving

The archive of finds and records generated during the project will be kept secure at all stages of the operation. All records and materials produced will be archived to the standards outlined in English Heritage's Management of Research Projects in the Historic Environment and those set out by Bedford Museum.

Permission will be sought from the landowners for transfer of title of all finds to Luton Museum on completion of post-excavation analysis and reporting.

On completion of the project, the archive will be deposited at Bedford Museum (LUTNM: 2014/11).

Albion Archaeology employs a full time Archives Officer to ensure that all archives are completed to the correct standards and deposited according to the relevant guidelines.

Details of the project and its findings will be submitted to the OASIS database (ref. albionar1-174555) in accordance with the guidelines issued by English Heritage and the Archaeology Data Service.

2.5 Liaison with the CBCA

If required, monitoring will be carried out on behalf of the Local Planning



Authority by the CBCA. They will ensure that the WSI is complied with and that professional standards are maintained. CgMs Consulting Ltd will give the CBCA at least one week's notice of the start of the fieldwork and all reasonable access to the site and site documentation will be afforded to them.

Any variation to this WSI will be agreed with by CgMs Consulting Ltd with the CBCA before its implementation.

2.6 Health and Safety

A risk assessment will be carried out before the start of fieldwork in accordance with Albion Archaeology's Health & Safety Policy. As part of the Project Briefing all staff will be made aware of their responsibilities and the specific site hazards (identified under the risk assessment). The risk assessment will be reviewed as the project progresses.

Albion Archaeology will comply fully with all operational and safety requirements of the client.

2.7 Project Timetable

It is anticipated that initial set-up works will be undertaken on 31st March 2014 and that the excavation and monitoring of the geotechnical pits and boreholes will take place on 1st and 2nd April 2014.

The duration of the reporting phase of the project is expected to take up to 4 weeks to complete, depending on the results of the fieldwork.



3. RESOURCES

3.1 **Albion Archaeology Company Profile**

Albion Archaeology, formerly called Bedfordshire County Archaeology Service was established in 1974. In keeping with its commitment to the maintenance of the highest standards of professional practice, it has been a Registered Organisation with the Institute for Archaeologists since August 1997. Albion Archaeology is one of the region's leading archaeological organisations and for more than 30 years has undertaken major fieldwork and evaluation projects throughout Bedfordshire. It also now operates over a wider area, including the neighbouring counties of Northamptonshire, Cambridgeshire, Hertfordshire and Buckinghamshire. It offers a comprehensive service to local and national government, statutory bodies, and the private sector.

3.2 **Relevant Experience**

Albion Archaeology staff can draw on decades of experience of working on a wide range of archaeological sites within the eastern region and beyond. The monitoring and recording works will be undertaken by a team of professional, employed archaeologists. The team leader will be competent at archaeological evaluation and excavation techniques, with a proven track record. The team leader will directly supervise all site works and will be the main author of the report.

3.3 **Albion Archaeology Staff Resources**

Albion Archaeology employs over 40 full-time, professional archaeological staff. Additional staff are recruited as required by the organisation's work load. The following individuals will be deployed on this project (detailed CVs are presented in Appendix 2).

Drew Shotliff MA MIFA, Operations Manager: quality control and overall management;

Rob Wardill MA MIFA, Project Manager: day-to-day operational management, budget management;

Mark Phillips BSc, Project Officer: day-to-day fieldwork management

Joan Lightning, CAD/GIS Technician: archive digitisation and production illustrations;

Jackie Wells MA, Finds Officer: finds processing and reporting

An Archaeological Supervisor and supporting Technicians will be assigned to the project team as necessary. Technical support will be provided by in-house specialist staff in the areas of finds analysis, surveying, illustration and computing.

3.4 **External Sub-contracted Specialists**

All sub-contractors used by Albion Archaeology are established and well respected in their respective fields of expertise. Each has a proven track record of providing quality services within set deadlines. Pro forma contracts are used to



ensure work is correctly specified and delivered to time and budget. Albion Archaeology continually reviews the quality of work received from sub-contractors and continually seeks competitive quotes in order to avoid over-reliance on a single sub-contractor.

The following specialist will monitor the geotechnical works in conjunction with Albion Archaeology staff: Dr Peter Allen, Geoarchaeologist; Prof Mark White, Palaeolithic Archaeologist (see Appendix 2 for further details)

The following additional external specialists will be used, as required, on this project:

Artefact conservation	<i>Museum of Lincoln</i>
Coinage	<i>Dr. Peter Guest</i>
Faunal remains	<i>Dr. Mark Maltby, Bournemouth University</i>
Human remains	<i>University of Leicester Archaeological Service</i>
Plant, insect and molluscan remains	<i>John Giorgi</i>
Soil formation processes and micromorphology	<i>Dr. Richard Macphail, University College London</i>



4. QUALITY ASSURANCE

Albion Archaeology's three principal organisational goals are:

- i. delivery of a first class service to clients;
- ii. development of the highest professional standards;
- iii. rapid dissemination of the results of archaeological projects.

To meet these goals the following elements of Total Quality Management are under continuing development.

- A networked Projects Database and client contact *pro formae* which underpin our service delivery.
- A networked time and cost recording system which underpins project budget management.
- Use of Project Management software for scheduling both individual projects and the work of the organisation as a whole.
- Specific standards reviews at the completion of each project stage.
- Adherence to professional standards set out by the IfA.
- Commitment to utilisation and development of regional and national research frameworks.
- Commitment to staff development to maintain professional expertise.
- Comprehensive Fieldwork Procedures Manual.
- Consistent approach to assessment, analysis and archiving by means of standardised database templates and procedures.
- Continual review of service standards provided by sub-contractors.
- Support for Albion Archaeology staff involved in national archaeological organisations.
- Regular publication of the results of fieldwork projects, in both stand alone format and as part of regional and period-based summaries.
- Safe and secure storage of project archives prior to deposition with relevant museum.
- Provision of an education service for local schools.
- Maintenance of public display area at St Mary's Archaeology Centre.



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- Wymer, J. 1999, *The Lower Palaeolithic Occupation of Britain*



6. APPENDIX 1: DETAILED METHOD STATEMENTS

6.1 *Investigation Methodology for 2m by 2m test pits*

1. Machine excavation of the test pits will be undertaken under constant archaeological supervision.
2. Machine excavation of the upper part of the trench, to the level of any post-Palaeolithic archaeology or the top of geological deposits will be undertaken with a toothless bucket.
3. Spoil will be scanned for artefacts by both eye and metal detector.
4. Any suspected archaeological features will be cleaned by hand.
5. All archaeological features will be recorded in plan and (or) section at a scale of 1:20 or 1:10. Skeletons may be recorded at 1:10 or 1:5.
6. All archaeological features, and in some cases geological deposits, will be issued a unique number, specific to that feature and location.
7. Discrete archaeological features, such as shallow pits, postholes without obvious post-pipe/packing, will be half sectioned.
8. Linear features will be excavated away from their intersections with other features or deposits to obtain unmixed samples of material. Excavation slots will be at least 1m wide.
9. All excavated features and deposits will be fully recorded in accordance with Albion Archaeology's Procedures Manual.
10. A full photographic record in 35mm and digital format as appropriate will be compiled during the process of excavation. This will include working shots, feature record shots and publication shots.
11. If human remains are encountered, Albion Archaeology will liaise with the appropriate authorities with regard to their excavation to ensure that all necessary procedures are adhered to.

6.2 *Monitoring and Recording for Possible Palaeolithic Deposits*

The observation and recording of possible Palaeolithic deposits will be undertaken by a geoarchaeologist and a specialist in Palaeolithic archaeology with recognised expertise in this field.

6.3 *Artefacts*

Artefacts will be collected and treated in accordance with *IfA Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (updated 2008), and the *Albion Archaeology Procedures Manual*.

In summary, artefacts, including those recovered from spoil heaps, will be assigned to a relevant context number. Artefact processing will be undertaken concurrently with the investigation. This will comprise cleaning and marking, documenting and storing as appropriate. Documenting will comprise identification, dating and entry of data onto the Context Assemblage database. All ironwork, and other materials deemed suitable, will be submitted for x-radiography.



Any finds which are identified as Treasure, as defined in the 1996 Treasure Act and the 2003 extension of definition will be reported to the appropriate Portable Antiquities Scheme officer upon their discovery/identification.

6.4 Environmental Sampling

A programme of environmental sampling will be carried out in accordance with English Heritage (2011) *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation*, and the Albion Archaeology *Procedures Manual*.

In summary, samples will be taken from a representative range of context types from each phase of identified archaeological activity. Samples will be taken from contexts that appear rich in environmental material and other key contexts identified within the excavations. The primary purpose of sampling will be to examine:

- survival of material
- key archaeological contexts

Processing will be undertaken at St Mary's Church Archaeology Centre in accordance with the *Procedures Manual*. Specialist advice will be sought as necessary.

6.5 Post-Fieldwork Analysis and Reporting

During or immediately after fieldwork all excavation records will be checked and cross-referenced to ensure they are internally consistent. Recording, cleaning and conservation of finds will follow the IfA Guidelines for Finds Work. All soil samples will be processed and assessed as appropriate.

The data acquired during all stages of fieldwork will be analysed to a level that is appropriate to provide the information required to achieve the project objectives. Site drawings will be digitised and geo-referenced. Contextual, artefactual and ecofactual data will be entered onto a networked Access database. This will be used to assess, analyse and report on the results of the fieldwork.

The report will contain sufficient detail to enable the results of the investigation to be interpreted without recourse to the site archive. This will include the tabulation of contextual and finds information. The report will consider the significance of any archaeological deposits in local, regional and national terms.

The report will be laid out as follows:

- Non-technical summary;
- Introduction (site location and description, planning background, archaeological background);
- Description of investigation, combining the results of all components (method statement, results, limitations), integrated with artefactual, ecofactual and specialist reports;
- Summary of results and significance;



- Figures will include a location plan, appropriate all features plans, sections and photographs.

6.6 Archive

A full project archive will be compiled in accordance with English Heritage (MoRPHE) standards.

Albion Archaeology adheres to strict archiving standards and ensures that all archive is stored appropriately. All storage material is of archival-quality and includes archival-quality photographic storage sleeves. As part of the archiving process all records are micro-fiched. The archive will be deposited with Bedford Museum.

An on-line OASIS form will be completed in accordance with the guidelines provided by English Heritage and the Archaeology Data Service.



7. APPENDIX 2: KEY PROJECT STAFF CVS

Drew Shotliff: Operations Manager

Technical qualifications

MA Archaeological Practice, University of Birmingham, 1985

BA (Hons) Modern History, Mansfield College, Oxford, 1980

Member of the Institute of Field Archaeologists

Core skills

Archaeological project management through design and fieldwork to publication. Post-excavation analysis of large urban and rural sites. Development of fieldwork and post-fieldwork analysis methodologies using database, AutoCAD and GIS applications. Research interests centre on Saxon and medieval rural settlement.

Employment History

1991-2001, Project Manager, Albion Archaeology

1991, Consultant to ODA/British Council, Samanalawewa Project, Sri Lanka

1990-1991, Project Officer, Cambridgeshire County Council

1987-1990, Senior Archaeologist, Museum of London

1982-1987, various archaeological employment including, English Heritage, University of Birmingham (Sutton Hoo), and Ecuador, Cyprus and France

Robert Wardill: Project Manager

Technical qualifications

MA Maritime Archaeology, University of Southampton, 2006

BSc (Hons) Archaeological Science, University of Sheffield, 1996

Member of the Institute for Archaeologists

Core skills

The management of multiple fieldwork projects from inception to publication and archive. Experience of a wide variety of archaeological work, including excavation and post-excavation analysis.

Employment History

Joined Albion Archaeology as a Project Manager in 2006

2003-2005 Project Manager with Wessex Archaeology

1996-2003 Rejoined Essex County Council Field Archaeology Unit in 1996 as a Site Assistant, being eventually promoted to Project Manager in 2000.

1991-1993 Employed as a Site Assistant with Essex County Council Field Archaeology Unit before leaving to study for a degree in archaeology.

1981-1996 Employed and volunteered on various archaeological projects and with various organisations in the UK and abroad.

Mark Phillips: Project Officer

Technical qualifications

HND Practical Archaeology, Dorset Institute of Higher Education, 1986

BA (Hons) Archaeology and Prehistory, University of Sheffield, 1988

Core Skills

Field experience on a wide range of archaeological projects including excavation, recording, surveying, fieldwalking, earthwork survey and building recording. He has co-ordinated archaeological investigation from small scale evaluations to large multi-site projects from site set-up to publication. Publications include "Excavation of an Early Saxon Settlement at Pitstone" (Records of Buckinghamshire 2004) and "Archaeological Investigations along the Route of the A505 Baldock Bypass, Hertfordshire" (East Anglian Archaeology Monograph 128, 2009). He has worked on a variety of sites in Bedfordshire, Buckinghamshire, Cambridgeshire,



Hertfordshire, Lincolnshire and Northamptonshire. He maintains a personal interest in buildings archaeology.

Employment History

Professional field archaeologist since 1989 working with BCAS and Albion Archaeology. He has been a Project Officer with Albion Archaeology since 2001.

Prof Mark White, Palaeolithic Archaeologist

Dept. of Archaeology, University of Durham

Extensive Palaeolithic research and publication, including:

White M 1997, "The earlier Palaeolithic occupation of the Chilterns (southern England): re-assessing the sites of Worthington G. Smith", *Antiquity* **71**, 912-931

Pettitt P and White M 2012, *The British Palaeolithic: human societies at the edge of the Pleistocene world*, Routledge Archaeology of Northern Europe

Dr Peter Allen, Geoarchaeologist

Worked on 44 sites, mostly Palaeolithic, in Essex, Kent, Bedfordshire, Berkshire and Suffolk. Carried out a geo-archaeological study of the gravel terrace on the Bedford Western Bypass (Northern Section) in 2012

Supervisor TBC

Jackie Wells: Finds Officer

Technical qualifications

MA Post-Excavation Studies, University of Leicester, 1990

BA (Hons) Archaeology and History, University of Nottingham, 1988

Core skills

Processing and analysis of ceramic and non-ceramic artefact types. Computer-based artefacts analysis. Report preparation. Establishment and maintenance of County Ceramic Type Series. Particular interest in Saxon and early medieval archaeology. Jackie has contributed to articles in *Bedfordshire Archaeology* and the Bedfordshire Monograph Series.

Employment History

Over 15 years postgraduate experience in processing and analysing artefactual assemblages, gained mainly through work in the Peak District, South Wales and Bedfordshire.

Joan Lightning: CAD Technician

Technical qualifications

BA (Hons) Archaeology and Prehistory

HND (Merit) Practical Archaeology

City and Guilds: AutoCAD 4351-01, and 4351-03.

Core skills

Experienced in using AutoCAD, Gsys versions 2 to 5.0, Aerial 5.12, Surfer 7, IntelliCAD, Access, Word 97, Corel Photopaint, Corel Draw and Corel Trace. Use data collected from field survey to produce landscape survey plans and 3d models/deposit models. Also experienced at aerial photographic interpretation using Aerial. Joan has also undertaken some building recording work.

Employment History

1999-present: CAD / Survey Technician for Albion Archaeology

1996-1999: Archaeological Technician /AutoCAD operator for Bedfordshire County Archaeology Service



1985-1996: Excavator on a variety of archaeological excavations covering many periods and in various parts of the country.

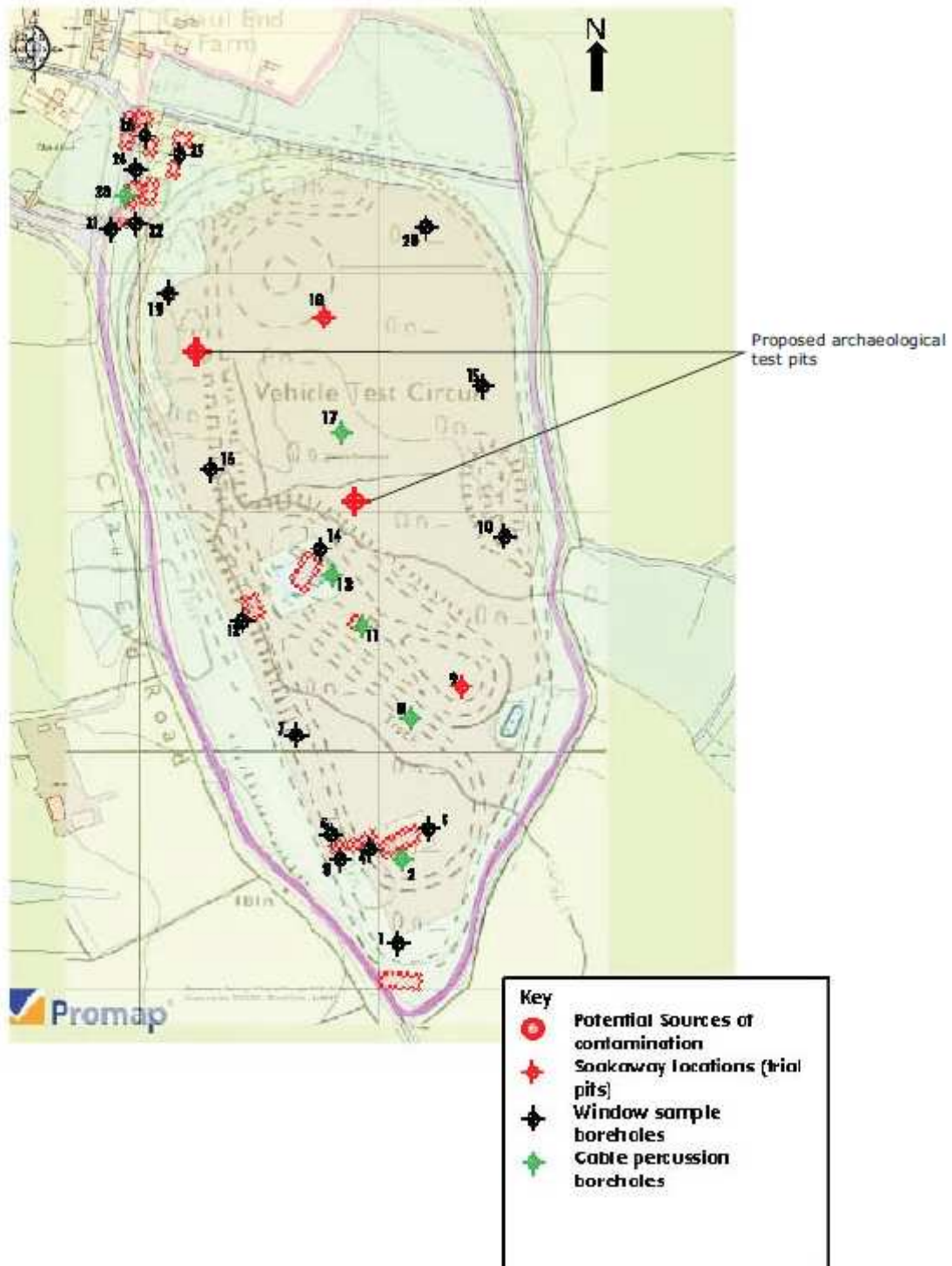


Figure 1: Site location showing proposed borehole and test pit locations

Map supplied by CgMs Ltd

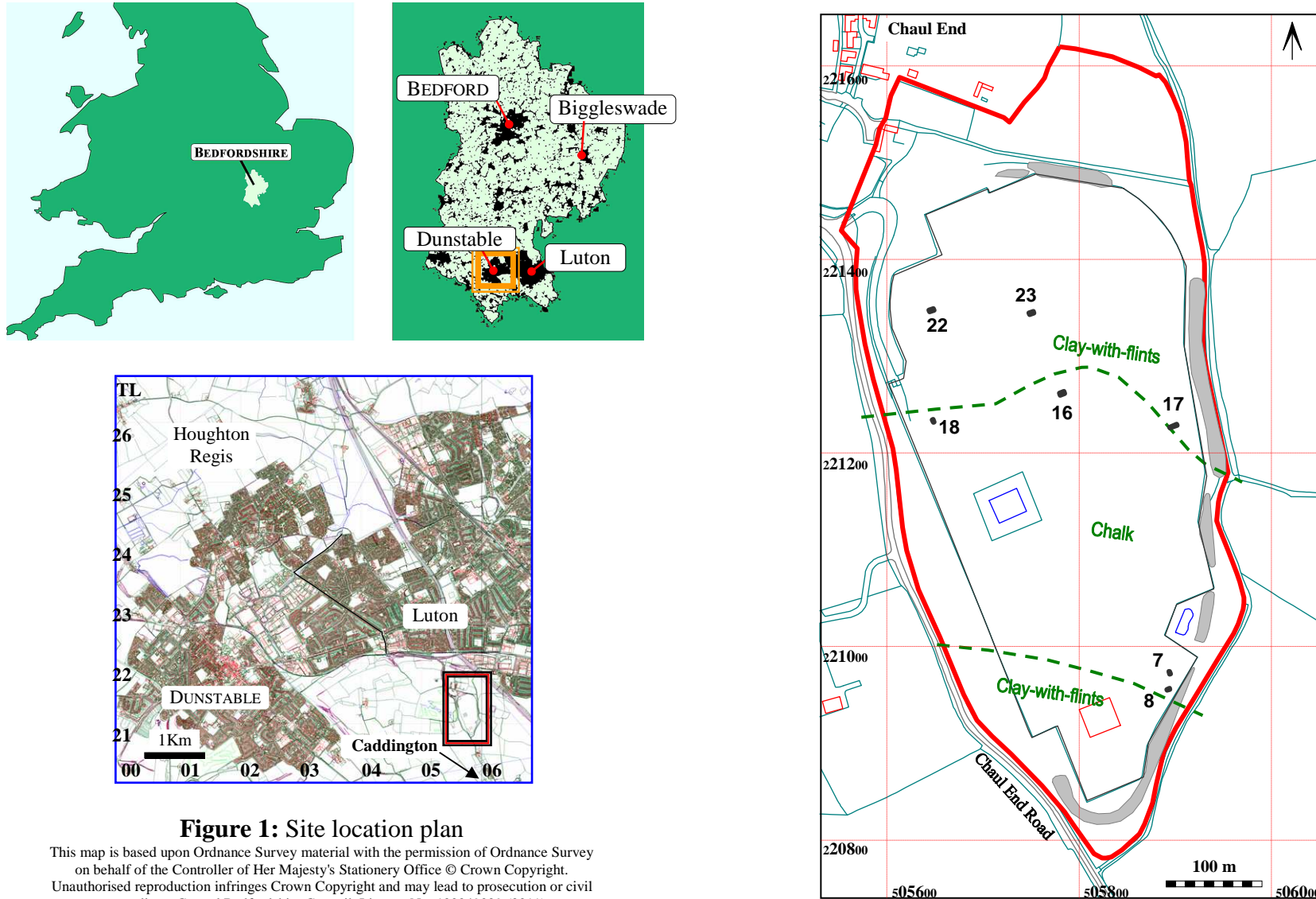


Figure 1: Site location plan

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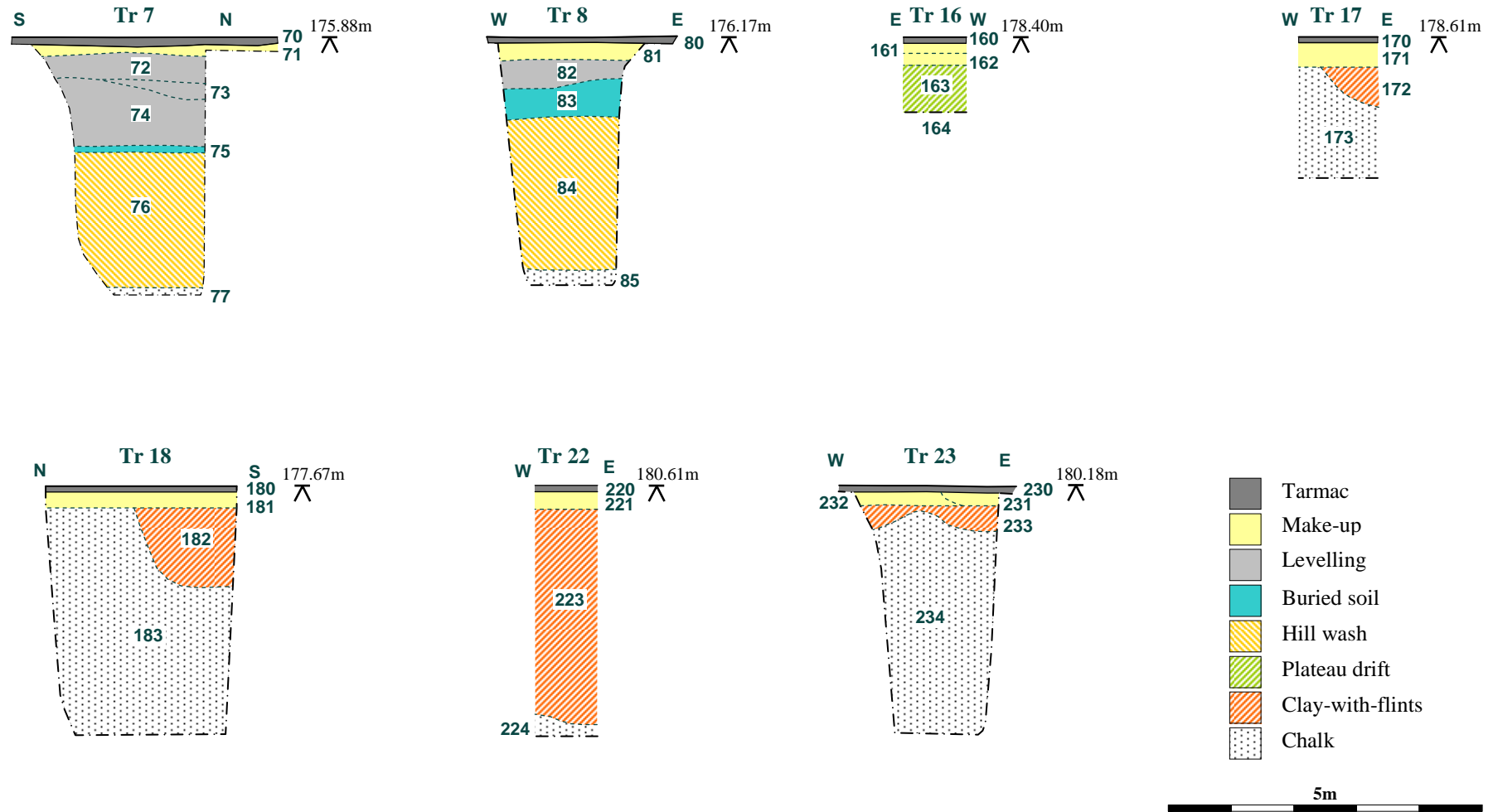


Figure 2: Sections



Albion
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