

Land adjoining Mancroft Road Caddington Bedfordshire

Archaeological Evaluation



for:
Emsrayne Ltd

CA Project: MK0089
CA Report: MK0089_2

Culture Trust Luton Entry Number: LTNMG 1432
Accession Number: 2019/53

November 2020



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Cirencester Building 11 Kemble Enterprise Park Cirencester Gloucestershire GL7 6BQ t. 01285 771 022	Milton Keynes Unit 8, The IO Centre Fingle Drive Stonebridge Milton Keynes Buckinghamshire MK13 0AT t. 01908 564 660	Andover Stanley House Walworth Road Andover Hampshire SP10 5LH t. 01264 347 630	Exeter Unit 1, Clyst Units Cofton Road Marsh Barton Exeter EX2 8QW t. 01392 573 970	Suffolk Unit 5, Plot 11 Maitland Road Lion Barn Industrial Estate Needham Market Suffolk IP6 8NZ t. 01449 900 120
e. enquiries@cotswoldarchaeology.co.uk				

CONTENTS

SUMMARY	3
1. INTRODUCTION.....	4
2. ARCHAEOLOGICAL BACKGROUND	5
3. AIMS AND OBJECTIVES	9
4. METHODOLOGY	10
5. RESULTS (FIGS. 2 - 5).....	12
6. DISCUSSION.....	13
7. CA PROJECT TEAM	13
8. REFERENCES.....	13
APPENDIX A: CONTEXT DESCRIPTIONS	15
APPENDIX B: LAND ADJOINING MANCROFT ROAD, CADDINGTON, CENTRAL BEDFORDSHIRE: GEOARCHAEOLOGICAL TRIAL PITS (WATSON 2019).....	16
APPENDIX C: OASIS REPORT FORM.....	

LIST OF ILLUSTRATIONS

Fig. 1 Site location plan (1:25,000)

Fig. 2 Trench and test-pit location plan showing archaeological features (1:2000)

Fig. 3 Trench 1: photograph

Fig. 4 Trench 4: photograph

Fig. 4 Trench 3: section and photograph (1:20)

SUMMARY

Project name:	Land adjoining Mancroft Road, Caddington
Location:	Caddington, Bedfordshire
NGR:	506102 218827
Type:	Evaluation
Date:	25-27 June 2019
Planning reference:	CB/19/00469/OUT
Location of Archive:	Culture Trust, Luton and the Archaeology Data Service
Site Code:	LAMR 19

In June 2019, Cotswold Archaeology carried out a trial trench and geoarchaeological test-pit evaluation at the site known as Land adjoining Mancroft Road, Caddington, Bedfordshire, in connection with proposals for the residential development of the site, which is located in an area of archaeological potential for heritage assets of Palaeolithic and geoarchaeological interest, as well as later periods.

Due to ecological constraints only three of the proposed seven evaluation trenches and three of the six geoarchaeological test-pits could be excavated. No brickearth deposits or doline features were identified in any of the geoarchaeological test-pits, the topsoil immediately overlaying the Clay-with-flints natural substrate. Given the absence of brickearth in the excavated test-pits the potential for the remainder of the site to contain any such deposits is judged to be low.

A single ditch, likely associated with a now-removed field boundary, was identified in trench 3. Although undated the ditch shared a commonality of alignment with other extant boundaries in the area and a post-medieval date for the feature is therefore conjectured.

1. INTRODUCTION

- 1.1. In June 2019, Cotswold Archaeology (CA) carried out an archaeological evaluation at the site known as Land adjoining Mancroft Road, Caddington, Bedfordshire (centred at NGR: 506102 218827; Fig. 1), on behalf of Emsrayne Ltd, in connection with proposals for the residential development of the site.
- 1.2. A planning application was submitted to Central Bedfordshire Council (CBC) in February 2019 comprising an Outline planning application with all matters reserved except access for a rural exception housing scheme comprising the erection of up to 19 dwellings at Land at Mancroft Road Caddington Beds LU1 4EL (planning ref: CB/19/00469/OUT). Advice provided to CBC by the Central Bedfordshire Council Archaeological Officer (CBCAO; Skawek Utrata), in their capacity as archaeological advisor, indicated that due to the location of the site in an area of archaeological potential for heritage assets of Palaeolithic and geoarchaeological interest, as well as later periods, a field evaluation would be required to inform determination of the application.
- 1.3. The scope of the evaluation was defined in discussion with the CBCAO as comprising trial trenching and geoarchaeological test-pitting and was subsequently carried out in accordance with a Written Scheme of Investigation (WSI) prepared by CA (2019) and approved by the CBCAO. The evaluation was also undertaken in line with the *Standard and guidance for archaeological field evaluation* (CIfA 2014), *Standards for Field Archaeology in the East of England* (Gurney 2003), *Management of Research Projects in the Historic Environment* (MoRPHE), *PPN 3: Archaeological Excavation* (Historic England 2015), and *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide* (Historic England 2015).
- 1.4. Due to ecological constraints only three of seven proposed trenches and three of six geoarchaeological test-pits could be excavated. Planning permission was subsequently granted in November 2019 subject to conditions, one which (Condition 4) requires a programme of archaeological works that is expected to comprise excavation of the remaining trial trenches and geoarchaeological test-pits in the first instance.

The site

- 1.5. The site comprises a c.0.7ha plot of land on the south-west side of the village of Caddington, to the west side of Mancroft Road. It is bounded by houses to the north-west, horse paddocks to the north-east and south-east and an area of grassland and trees to the south-west. The site itself comprised a mix of heavily overgrown grassland and areas of self-set scrub and saplings.
- 1.6. The geology within the site comprises chalk of the Lewes Nodular Chalk Formation and Seaford Chalk Formation, overlain by a drift geology of Clay-with-flints formation (Clay, silt, sand and gravel) (BGS 2020). Thin deposit of brickearth have been identified elsewhere in the vicinity of the site with these deposits shown to 'actually represent the separate infillings of individual funnel-or basin shaped doline: hollows, usually formed through dissolution and collapse of the Chalk, that are often associated with shallow holes' (White 1997, 914), These doline features have the potential to contain archaeological and paleoenvironmental material of Palaeolithic date. The soils within the site are slightly acid loamy and clayey soils with impeded drainage (Cranfield Soilsclapes 2018). During the evaluation, the natural geology of the site was observed to be a mid-brown orange silty clay with frequent flint inclusions (Clay-with-flints).

2. ARCHAEOLOGICAL BACKGROUND

- 2.1. A Desk Based Heritage Statement (Albion Archaeology 2018) had previously been prepared for the site and further details regarding the landscape, historical and archaeological background to the wider area in which it is situated can be found therein. Additional information for the site area has been derived from a Heritage Statement prepared for the adjacent Cotswold Business Park Development (CA 2018)

Lower Palaeolithic (c. 500,000 – 70,000 years ago)

- 2.2. Between 1887 and 1916, significant assemblages of worked flint implements were found buried in thin horizons of brick-earth recorded within seven extraction pits at Caddington, c400m, c420m and over 500m to the north-east of the site (Albion Archaeology 2018). Pit C, the closest to the site, appears to have been the most prolific, yielding ovate handaxes, borers, disc scrapers, fabricators, trimmed flakes and cores. Artefacts such as flakes and cores were also recovered from the other pits. Identified, recovered and studied by the noted antiquary Worthington G Smith,

these lithic deposits were considered to represent lakeside occupation sites dispersed across a continuous land surface – the so-called ‘Palaeolithic floor’. However, reinvestigation and reanalysis from the 1970s onwards have shown Smith’s understandings of the local geology (and thus his interpretations of Palaeolithic activity) to be flawed.

2.3. Rather than forming a single, widespread stratum over the entire Chiltern Hills area, modern research demonstrates that the brick-earth deposits ‘actually represent the separate infillings of individual funnel- or basin- shaped dolines: hollows, usually formed through dissolution and collapse of the Chalk, that are often associated with swallow-holes’ (White 1997, 914). This challenges Smith’s assumption of the Caddington sites being contemporary with one another. It is more probable that the artefact-rich brick-earth horizons represent distinct episodes of hominid activity focussed along the margins of semi-permanent lakes that had formed within discrete dolines. Subsequent sedimentation (at varying rates and times) caused abandoned flint tools to be ‘sealed’ within the wind-blown brick-earth.

2.4. It is generally accepted that the finds recovered from the dolines are secondary deposits: moved, accumulated and buried by geological processes. These flints are not ‘in situ’ in the sense of remaining in the same locales in which they were used and abandoned by Palaeolithic communities.

2.5. Palaeoenvironmental evidence was collated from the Caddington sites during a research excavation undertaken by Southern Methodist University (Dallas, Texas) in 1971. Palynological analysis indicated that the flint horizons represent various brief but intensive periods of occupation within an open, interglacial landscape. The stratigraphic sequence drawn by Worthington Smith for Pit C suggests that the worked flints occurred at depths of 1.2m–4m below the ground surface: contained within the upper layers of the brick-earth (up to 15m thick) overlying the Clay-withflints and Upper Chalk (cf. White 1997, 919).

Middle/Upper Palaeolithic (c. 70,000 years ago to 4000 BC)

2.6. Only a few Mesolithic finds have been recovered within the study area used for the Desk Based Assessment. A flint core was recovered during the watching brief undertaken by the Manshead Archaeological Society in 1997, whilst further worked flint was recovered during fieldwalking and archaeological work elsewhere within the Study Area. It is not certain with any of these items if they were recovered from

their primary location, however, their discovery highlights human presence in the area during the Mesolithic period.

Neolithic and Bronze Age (c. 4000 BC – 700BC)

2.7. Neolithic and Bronze Age settlement is scarce in Bedfordshire, occupation typically represented by small clusters of pits. No such sites are known within the study area but the presence of a Bronze Age barrow to the north of the site demonstrates activity within the area.

2.8. Despite the relative lack of recorded archaeological features, a large variety of Neolithic and Bronze Age artefacts have been recovered from the Study Area and surrounding region. Worked flints (including cores, retouched flakes, scrapers, blades and piercers) were recovered during the Caddington field walking survey undertaken in the late 1980s as discussed above, with a particularly dense concentrations occurring around Cradle Spinney c. 600m to the north of the site. The wide distribution of finds around Caddington indicates a landscape that had largely been cleared of woodland; the heavy clay soils used for pasture rather than cultivation (Hudspith 1992, 58). This density of flint artefacts suggests that the plateau was extensively exploited during the later Neolithic and early Bronze Age.

Iron Age (c. 700 BC – AD43)

2.9. Located on the higher ground c. 300m to the east of the site is a possible Iron Age hillfort. Interpreted originally as a Roman camp, the only evidence which remains to indicate the potential presence of the site are three roads called Dark Lane Camps, Upper Lane Camps and Lower Camps. The site itself has been ploughed and no visible earthworks remain. To the north of the potential hillfort, at an area of Roman occupation, Iron Age flints were also recovered, whilst during the field walking survey undertaken to the north at Turnpike Farm a number of Late Iron Age potsherds were retrieved.

Roman (AD43 - 410)

2.10. The site is located c.2.7km to the east of the alignment of Watling Street, a major Roman routeway. This major Roman road travelled north-west from Londinium (London) towards Verulamium (St Albans) and Viroconium (Wroxeter). Documentary sources from the early 20th century record a large number of Roman pots or urns as having been found in the brickfields to the south of Caddington.

Whilst their exact provenance, dates and current whereabouts are unknown they may indicate Roman potential in the immediate surroundings of the site.

- 2.11. The other fieldwalking surveys of Caddington parish collated little additional evidence for Roman activity within the area. Occasional fragments of Roman pottery and tile to the south of Bush Wood were considered to derive from manuring practices, suggesting that these fields formed part of the agricultural hinterland of a farmstead or villa somewhere in the wider vicinity.

Early medieval (410 - 1066)

- 2.12. The manor of Caddington was an ancient demesne of the crown, granted to the monastery of St Albans by Offa, king of Mercia in the 9th century. There are no recorded heritage assets of early medieval date within the study area, but is probable that the landscape remained occupied during the early centuries AD with a scattered distribution of single farmsteads, their situation informed primarily by the local topography. The fossilisation of this pattern in later rural settlements indicates that valley floors and ridge top sites were favoured.

Medieval (1066 - 1539)

- 2.13. By 1086, Caddington was a sizeable settlement comprising 36 households and with land for 16 ploughlands and woodland for 300 pigs. The Site would have lain outside of the urban extent of the village, as it does today, and was likely to form part of the surrounding arable land. The medieval settlement of Aley Green, a separate settlement to Caddington, is believed to have been focused around a roughly triangular green c.1km to the southeast of the site.
- 2.14. Much of the parish of Caddington was cleared of its woodland throughout the 12th and 13th centuries, to expand the area of common land for strip fields. A growing pressure for arable land within Caddington parish has been identified from the 14th century onwards, causing expansion into more marginal areas. Archaeological signatures of medieval cultivation have been recorded across the study area. On the steep slopes of the plateau, c.2.1km to the west of the site, are the well-preserved earthworks of lynchets: banks of earth formed through repeated, historic ploughing of a hillside.

Post-medieval (1539 - 1800)

- 2.15. Until the enclosure of Caddington parish in c. 1800, the land will have been farmed under the open field system, and areas of ridge and furrow earthworks and lynchets survive within the western half of the site. The pattern of dispersed nucleated rural settlement seen across Bedfordshire appears to have been mirrored within Caddington, and there is little recorded evidence for post-medieval activity within the Study Area utilised for the 2018 desk-based assessment.

Modern (1800 - present)

- 2.16. At the time of the 1798 Caddington Enclosure Map the PDA is depicted as comprises part of an undeveloped, rectilinear field known as 'Long Holt Field', under the ownership of Thomas Birchmore. A track is marked along the northern boundary and matches the location of a current right of way. Subsequent historic and modern mapping shows no change to the PDA, which has remained undeveloped through to the present day.

3. AIMS AND OBJECTIVES

- 3.1. The archaeological works comprised a trial trench evaluation, undertaken by Cotswold Archaeology, and a geoarchaeological test-pit evaluation, undertaken by specialists from ARCA, at the University of Winchester. The objectives of the evaluation were to provide information about the archaeological and geoarchaeological resource within the site including its presence/absence, character, extent, date, integrity, state of preservation, quality and significance. In accordance with the *Standard and Guidance for archaeological field evaluation* (ClfA 2014), the evaluation was designed to be minimally intrusive and minimally destructive to archaeological remains. The information gathered will enable Central Bedfordshire Council, as advised by the CBCAO, to identify and assess the particular significance of any heritage assets that are identified, consider the likely impact of the proposed development upon them, and to avoid or minimise conflict between the conservation of those heritage assets and any aspect of the development proposal. This process is in line policies contained in the *National Planning Policy Framework* (MHCLG 2019).
- 3.2. The specific objectives of the geoarchaeological test-pit evaluation were to:
- Characterise the Quaternary lithostratigraphy of the study area;

-
- Determine the mode of formation of Quaternary strata with the study area;
 - Characterise the Palaeolithic archaeology of the study area;
 - Make a preliminary assessment of preservation potential of biological palaeoenvironment proxies;
 - Assess the Palaeolithic archaeological potential of the Quaternary deposits encountered.

3.3. The following sub-aims were to be addressed dependant on the results of the above:

- Determine whether Quaternary deposits are associated with dolines, if such strata are stratified and whether standstill episodes can be recognised (i.e. as palaeosols);
- Compare the lithological and Palaeolithic archaeological record from the study area with that from the Caddington;
- Provide a preliminary indication of the age of Quaternary deposits

3.4. No significant archaeological or geoarchaeological remains were identified during the evaluation. As such, it is not possible to place the results into a regional context or nationwide research agendas.

4. METHODOLOGY

4.1. The methodology during this evaluation differed to that set out in the WSI. Of the agreed seven trenches and six geoarchaeological test-pits, only three trenches and three geoarchaeological test-pits could be excavated due to ecological constraints. The remaining trenches and test-pits are therefore expected to be completed at a later date. The works were monitored by the Central Bedfordshire Council Archaeologist (CBCA – Hannah Firth), including a site monitoring visit on the 26th June 2019.

4.2. The methodology for the trial trenching is set out in sections 4.3 – 4.5 below and the methodology for the geoarchaeological test-pitting in sections 4.6 - 4.8. The full

report (Watson 2019) for the geoarchaeological test-pitting is presented as Appendix B, below.

Archaeological Trial Trenching

Excavation and recording

- 4.3. The evaluation comprised the excavation of three trenches, each measuring 30m long and 1.8m wide. The trenches were set out on OS National Grid co-ordinates using Leica GPS. Overburden was stripped from the trenches by a mechanical excavator fitter with a toothless grading bucket. All machining was conducted under archaeological supervisor to the top of the natural substrate, which was the level at which archaeological and natural features were first encountered.
- 4.4. Archaeological features were investigated, planned and recorded in accordance with *CA Technical Manual 1: Fieldwork Recording Manual*. Records were maintained in accordance with *CA Technical Manual 1: Fieldwork Recording Manual*.
- 4.5. No deposits that required environmental sampling were identified.

Geoarchaeological test-pitting

Excavation and recording

- 4.6. The geoarchaeological test-pit evaluation comprised the excavation of three test pits, each measuring c. 3m x 2m and located at the end of the trial trenches (see Fig. 2). The test pitting was conducted by ARCA officer, Dr. Nick Watson.
- 4.7. At a depth of 1.2m a section of each trial pit was logged and photographed. As it was apparent that the test-pits had penetrated the mapped geology of Clay-with-flints formation excavation was halted at c. 1.5m below existing ground level (BEGL) rather than the 4m specified in the WSI, since any brickearth deposits/dolines must lie above the Clay-with-flints formation.
- 4.8. The arisings and exposed sections of the test-pits were inspected for Palaeolithic artefacts but none were identified.

Archive deposition

- 4.9. CA has made arrangements with the Culture Trust for the deposition of the project archive, once approved by the CBCAO, under the Entry and Accession numbers LTNMG 1432 and 2019/53 respectively. Until this time, the archive will be held at

CA's offices in Milton Keynes. A digital archive will also be prepared and deposited with the Archaeology Data Service (ADS).

- 4.10. A summary of information from this project, as set out in Appendix C will be entered onto the OASIS online database of archaeological projects in Britain.

5. RESULTS (FIGS. 2 - 5)

- 5.1. This section provides an overview of the trial trenching evaluation results. Detailed summaries of the recorded contexts are given in Appendix A. The results of the geoarchaeological test-pitting evaluation can be found in Appendix B.
- 5.2. Out of the three trenches (1, 3 & 4) that could be excavated during this phase of works, only Trench 3 contained an archaeological feature. Trenches 1 and 4 contained natural features in the form of tree throws/ root boles, which were noted but with the agreement of the CBCA not investigated further (Figs 3 & 4).
- 5.3. The stratigraphy observed on site comprised a dark grey brown silty clay topsoil 0.17m – 0.24m thick, overlying the natural geology comprised of mid brown orange silty clay with frequent flint inclusions (Clay-with-flints). No subsoil or other superficial deposits (e.g. brickearth) were observed.

Trench 3 (Fig. 5)

- 5.4. At the western end of the trench, a north-east/south-west orientated ditch 302 was recorded. The ditch measured over 2.05m long, extending past the limits of the trench, by 0.82m wide and 0.36m deep. The sides of the ditch were recorded as slightly irregular, with a moderate sloped side to the north-west side and a steep sloped side to the south-east side. The base of the ditch was concave, sloping slightly to the north-east, following the natural slope of the surrounding field.
- 5.5. Ditch 302 contained two deposits. Context 303, the primary fill, comprised a 0.14m thick compact, light to mid brown orange silty clay with mottled patches of light yellow brown sand. The secondary fill, 304, comprised a mid orange brown moderately compact clay silt, 0.22m thick. No finds were recovered from either deposit.

6. DISCUSSION

Trial Trench Evaluation

- 6.1. During the evaluation, a single undated ditch was recorded in Trench 3. It was noted that the orientation of the ditch shares a commonality of alignment with existing field boundaries in the area and it is likely that ditch 302 is associated with a now-removed field boundary of likely Post-medieval date. The ditch is likely to extend through Trench 2 (unexcavated) and further work to complete the evaluation may lead to dating evidence being obtained for the feature.

Geoarchaeological Test-pit Evaluation

- 6.2. For a full discussion of the results of the geoarchaeological test-pit evaluation please see Watson 2019, located in Appendix B.
- 6.3. The excavated test-pits revealed that the mapped drift geology of Clay-with-flints was present immediately below the topsoil. No brickearth deposits or dolines were identified, nor any Palaeolithic artefactual material or deposits of palaeoenvironmental potential in any of the test-pits.

7. CA PROJECT TEAM

- 7.1. Fieldwork was undertaken by Matt Nichol, assisted by Harriet Farr and Molly Agnew-Henshaw. This report was written by Molly Day. The report illustrations were prepared by Rosanna Price. The project archive has been compiled and prepared for deposition by Hazel O'Neil. The project was managed for CA by Adrian Scruby.

8. REFERENCES

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APPENDIX A: CONTEXT DESCRIPTIONS

Trial Trench context descriptions

Trench	Context No.	Type	Fill of	Interpretation	Description	Length (m)	Width (m)	Depth/thickness (m)	Spot-date
1	100	Layer		topsoil	Dark grey brown, friable, silty clay with occasional small rounded stones	30	1.8	0.17	
1	101	Layer		natural	Mid brown orange, compact, silty clay with frequent flint inclusions	30	1.8	>0.21	
3	300	Layer		topsoil	Dark grey brown, friable, silty clay with occasional small rounded stones	30	1.8	0.24	
3	301	Layer		natural	Mid brown orange, compact, silty clay with frequent flint inclusions	30	1.8	>0.28	
3	302	Cut		Cut of ditch	Cut of ditch with irregular moderately steep to steep sides and a concave base	>2.05	0.82	0.36	
3	303	Fill	302	1 st fill of ditch	Light to mid brown compact orange silty clay with patches of mottled light yellow brown sand	>2.05	0.44	0.14	
3	304	Fill	302	2 nd fill of ditch	Mid orange brown, moderately compact clayey silt.	>2.05	0.82	0.22	
4	400	Layer		topsoil	Dark grey brown, friable, silty clay with occasional small rounded stones	30	1.8	0.19	
4	401	Layer		natural	Mid brown orange, compact, silty clay with frequent flint inclusions	30	1.8	>0.28	

**APPENDIX B: LAND ADJOINING MANCROFT ROAD, CADDINGTON, CENTRAL
BEDFORDSHIRE: GEOARCHAEOLOGICAL TRIAL PITS (WATSON 2019)**

June 2019

Report Number: 1819-16

**LAND ADJOINING
MANCROFT ROAD,
CADDINGTON,
CENTRAL BEDFORDSHIRE:
GEOARCHAEOLOGICAL
TRIAL PITS.**

Prepared for Cotswold
Archaeology Ltd

by
Nick Watson

ARCA

Department of Archaeology and
Anthropology
University of Winchester
Winchester
SO22 4NR

<http://www.arcauk.com>

*Land adjoining Mancroft Road, Caddington, Central Bedfordshire: Geoarchaeological
Trial Pits*

Version	Date	Status*	Prepared by	Author's signature	Approved by	Approver's Signature
001	27/06/19	E	Nick Watson	<i>N.M. Watson</i>	Nick Watson	<i>N.M. Watson</i>

*I – Internal draft; E – External draft; F – Final

CONTENTS

Contents	3
List of Figures	4
Summary	5
1. Introduction	6
2. Methodology	7
2.1 Trial Pit excavation.....	7
2.2 Archive.....	8
3. Results: Trial Pit Stratigraphy.....	8
3.1 Trial Pit 1.1	8
4. Assessment	10
4.1 Lithostratigraphic sequence	10
4.2 Archaeological and palaeoenvironmental potential and	10
5. Conclusions.....	10
6. Acknowledgements	10
7. Bibliography	11

LIST OF FIGURES

Figure 1. TP1.1 north section showing topsoil and Clay-with-flints
Formation..... 9

SUMMARY

In June 2019, ARCA, at the request of Cotswold Archaeology Ltd, recorded three trial pits excavated by machine at land adjoining Mancroft Road, Caddington, Central Bedfordshire. The trial pitting revealed the mapped geology of the Clay-with-flints Formation from c. 0.25m below ground level (bgl) to a depth of c. 1.5m bgl, and the modern soil profile c. 0.25m thick. No units of brickearth or archaeological material were found. There was no evidence to suggest the presence of dolines.

1. INTRODUCTION

- 1.1 This report discusses the results of a geoarchaeological investigation of three trial pits excavated in archaeological trenches on land adjoining Mancroft Road, Caddington, Central Bedfordshire (henceforth 'the site'). The work was carried out by ARCA on behalf of Cotswold Archaeology Ltd on 26th June 2019.
- 1.2 The site is centred on National Grid Reference (NGR) TL 06106 18821 on the south western edge of Caddington village c. 2.5km northwest of junction 10 of the M1. It is located on the east slope of a ridge of Chalk that trends north northwest/ south southeast, bound either side by river valleys. The site lies in a rough grass and young oak tree scrub surrounded on three sides by oak and hazel woodland. The elevation of the site is between 160m and 165m OD and comprises an area of c. 0.7ha.
- 1.3 The British Geological Survey (BGS) map (1:50,000 1990, sheet 238) shows the bedrock geology of the site as the Lewes Nodular Chalk Formation And Seaford Chalk Formation (Undifferentiated) of the Late Cretaceous Epoch (66 – 100.6Ma). Overlying the Chalk is the Clay-with-flints Formation, a residual deposit that dates from the Palaeogene Period (66Ma) to the Pleistocene Epoch (2.6Ma). The lithology of the deposit is reddish brown clay with black flint nodules of coarse pebble to boulder size, and fine to medium-grained sand (British Geological Survey 2019a; 2019b).
- 1.4 The importance of the site is its close proximity to the Caddington brickearth pits (the nearest to the site were located along Dunstable road c. 740m northwest on the County Series 1:10560, 1901, 1st revision map). Here Palaeolithic artefacts were found on a gently sloping horizon within brickearth (White 1997). The brickearth is a fluvial reworking of loess during Pleistocene interglacials that accumulated within sinkholes (dolines) in the Chalk bedrock. Abraded and redeposited artefacts have also been recorded from a contorted drift (solifluction) deposit overlying the brickearth (White 1997, 912–918). Although the brickearth would once have been more extensive, it is now confined to the basin-like depressions within dolines in the Chalk.
- 1.5 The aims of the work at the site were (Cotswold Archaeology 2019, 7 and 8):

- 1.5.1 Characterise the Quaternary lithostratigraphy of the study area;
 - 1.5.2 Determine the mode of formation of Quaternary strata with the study area;
 - 1.5.3 Characterise the Palaeolithic archaeology of the study area;
 - 1.5.4 Make a preliminary assessment of preservation potential of biological palaeoenvironment proxies;
 - 1.5.5 Assess the Palaeolithic archaeological potential of the Quaternary deposits encountered.
- 1.6 The aims of Section 1.5 have been addressed by meeting the following objectives:
- 1.6.1 Excavating three trial pits (TP1.1 – TP1.3) by machine and recording the sections revealed to a depth of c. 1.5m.
 - 1.6.2 Producing a geoarchaeological assessment report, which:
 - (i) Assesses the impact of the development on deposits of archaeological and palaeoenvironmental interest, and;
 - (ii) Makes recommendations for further geoarchaeological work.
 - 1.6.3 Archiving the lithostratigraphic data for later use and reference.

2. METHODOLOGY

2.1 Trial Pit excavation

- 2.1.1 Locations for trial pits were selected in one of the terminals of each 25m long trench; three in all (Trial Pits (TP) 1.1 – 3.1). Under supervision the trial pits were excavated by machine in spits c. 0.3m thick in an area c. 2 x 3m. At a depth of 1.2m a section of each trial pit was logged and photographed according to standard criteria (Jones *et al.* 1999; Munsell Color 2000; Tucker 2011). Excavation then proceeded according to the protocol in the WSI (Cotswold Archaeology 2019, 12). It was immediately apparent, however, that the trench excavations had penetrated the mapped geology Clay-with-flints Formation.

Since this eventuality had not been foreseen in the WSI excavation was halted at c. 1.5m rather than the 4m specified since any brickearth deposits must lie above the Clay-with-flints.

2.1.2 The spoil and sections (the topsoil and boundary with the Clay-with-flints Formation) of the archaeological trenches was inspected for Palaeolithic artefacts: none were found.

2.2 Archive

2.2.1 There is no material archive and no artefacts were recovered. The digital archive consists of photographs of the sections in JPG format and this report in PDF format. These digital archives are stored both on the University of Winchester server and on an external hard drive stored outside the University of Winchester. Copies of these data can be supplied on request.

3. RESULTS: TRIAL PIT STRATIGRAPHY

3.0.1 The stratigraphy in the three trial pits was very similar, so much so that a single one (TP1.1) has been selected for description here in the manner of a geological type section (Figure 1).

3.1 Trial Pit 1.1

3.1.1 The stratigraphy of TP1.1 is described in Table 1 below.

N section TP1.1		
Depth m	Unit	Description
0-0.25	1	10 YR 3/4 Dark yellowish brown (damp) silt/clay with a fine granular structure. Frequent medium sand- to fine pebble-sized roots (long grass, bramble and oak samplings). Rare to occasional granular- to medium pebble-sized, angular to sub-angular black flint with white cortex and ochre oxidised fractured surfaces. Homogenous. Consistent thickness c. 0.25m Very sharp and irregular boundary to:
0.25- c. 1.5m	2	7.5 YR 5/6 Yellowish brown silt/clay, firm to stiff becoming very stiff towards base (damp). Frequent granular- to cobble- and boulder-sized flint nodules. Occasional sub-angular fine pebble-sized flint. Frequent well rounded granular to coarse pebble-sized flints. Frequent black manganese oxide

		granules distributed throughout and in boulder-sized lenses. Possible patterned ground seen in all TPs (Periglacial cryoturbation feature). (Clay-with-flints Formation).
--	--	---

Table 1. North section TP1.1: lithostratigraphy.



Figure 1. TP1.1 north section showing topsoil and Clay-with-flints Formation.

4. ASSESSMENT

4.0.1 The sub-sections below review the lithostratigraphic and palaeoenvironmental evidence against the relevant aims of Section 1.5.

4.1 Lithostratigraphic sequence

4.1.1 The mapped geology Clay-with-flints Formation lies at c. 0.25m bgl in all the trial pits. This formation is believed to be formed from the dissolution and decalcification of the Chalk and overlying Palaeogene formations (the Lambeth Group). The later formations would contribute sand and well-rounded flint pebbles to the deposits. The processes of formation probably took place during the Palaeocene-Eocene Thermal Maximum when the climate was warm and wet. The unit was later cryoturbated in cold stages of the Pleistocene (Gallois 2006; BGS 2018b)

4.2 Archaeological and palaeoenvironmental potential and recommendations

4.2.1 No deposits of brickearth are present in any of the trial pits. The archaeological potential of the deposits on the site are therefore considered to be low. The deposits have no palaeoenvironmental potential and no further work is recommended.

5. CONCLUSIONS

5.1 The Quaternary sediments at the Mancroft Road site are the modern topsoil profile that overlies/is developed in the top of the earlier Clay-with-flints Formation. No brickearth deposits were found.

6. ACKNOWLEDGEMENTS

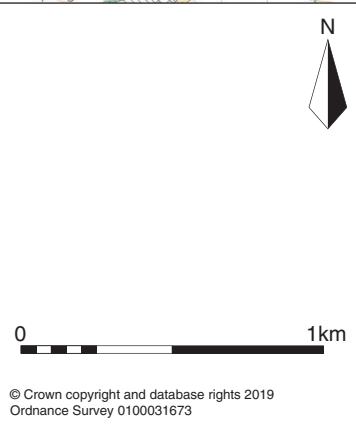
6.1 ARCA would like to thank the following for their help during the present project: Matt Nichol and Adrian Scruby of Cotswold Archaeology Ltd., and Dr Eleanor Standley of the University of Oxford.

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APPENDIX C: OASIS REPORT FORM

PROJECT DETAILS		
Project name	Land adjoining Mancroft Road, Caddington, Bedfordshire	
Short description	<p>In June 2019, Cotswold Archaeology carried out a trial trench and geoarchaeological test-pit evaluation at the site known as Land adjoining Mancroft Road, Caddington, Bedfordshire, in connection with proposals for the residential development of the site, which is located in an area of archaeological potential for heritage assets of Palaeolithic and geoarchaeological interest, as well as later periods.</p> <p>Due to ecological constraints only three of the proposed seven evaluation trenches and three of the six geoarchaeological test-pits could be excavated. No brickearth deposits or doline features were identified in any of the geoarchaeological test-pits, the topsoil immediately overlaying the Clay-with-flints natural substrate. Given the absence of brickearth in the excavated test-pits the potential for the remainder of the site to contain any such deposits is judged to be low.</p> <p>A single ditch, likely associated with a now-removed field boundary, was identified in trench 3. Although undated the ditch shared a commonality of alignment with other extant boundaries in the area and a post-medieval date for the feature is therefore conjectured.</p>	
Project dates	25-27 June 2019	
Project type	Trial Trench Evaluation and Geoarchaeological Trial Pit Evaluation	
Previous work	N/A	
Future work	Yes	
PROJECT LOCATION		
Site location	Land adjoining Mancroft Road, Caddington, Bedfordshire	
Study area (m ² /ha)	0.7ha	
Site co-ordinates	NGR: 506102 218827	
PROJECT CREATORS		
Name of organisation	Cotswold Archaeology	
Project brief originator	Central Bedfordshire Council	
Project design (WSI) originator	Cotswold Archaeology	
Project Manager	Adrian Scruby	
Project Supervisor	Matt Nichol	
MONUMENT TYPE	None	
SIGNIFICANT FINDS	None	
PROJECT ARCHIVES		
	Intended final location of archive (museum/Accession no.)	Content (e.g. pottery, animal bone etc)
Physical	N/A	N/A
Paper	Luton Culture: Luton Culture Entry number and accession; LTNMG 1432 and 2019/53	Context sheets, matrices etc
Digital	Luton Culture: Luton Culture Entry number and accession; LTNMG 1432 and 2019/53	Database, digital photos etc
BIBLIOGRAPHY		
Cotswold Archaeology 2020 <i>Land adjoining Mancroft Road, Caddington, Bedfordshire: Archaeological Evaluation</i> CA typescript report MK0089_2		

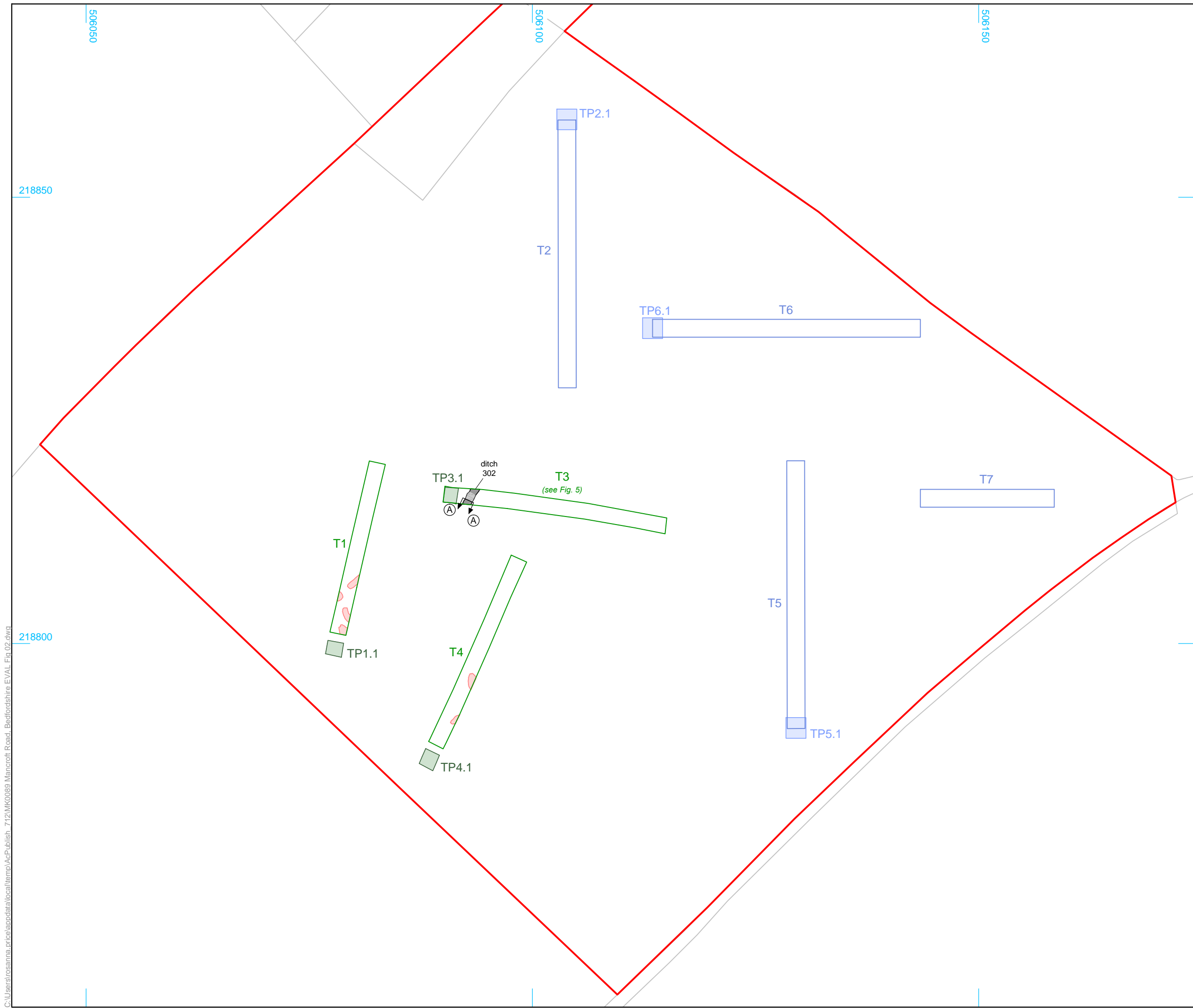



Cotswold Archaeology
 Andover 01264 347630
 Cirencester 01285 771022
 Exeter 01392 573970
 Milton Keynes 01908 564660
 Suffolk 01449 900120
www.cotswoldarchaeology.co.uk
enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
 Land adjoining Mancroft Road,
 Caddington, Bedfordshire

FIGURE TITLE
 Site location plan

DRAWN BY	RP	PROJECT NO.	MK0089	FIGURE NO.
CHECKED BY	DJB	DATE	02.06.20	1
APPROVED BY	AS	SCALE	@A4 1:25,000	



- Site boundary
- Evaluation trench (excavated)
- Test pit (excavated)
- Evaluation trench (unexcavated)
- Test pit (unexcavated)
- Cut feature (un/excavated)
- Tree-throw
- Ⓐ Ⓐ Section location



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Cotswold Archaeology

Andover	01264 347630
Cirencester	01285 771022
Exeter	01392 826185
Milton Keynes	01908 564660
Suffolk	01449 900120

w www.cotswoldarchaeology.co.uk
e enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
Land adjoining Mancroft Road, Caddington, Bedfordshire

FIGURE TITLE
Trench and test pit location plan, showing archaeological features

DRAWN BY	RP	PROJECT NO.	MK0089	FIGURE NO.
CHECKED BY	DJB	DATE	02.06.20	2
APPROVED BY	AS	SCALE@A3	1:400	

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Trench 1, looking north-east (1m Scales)



[Andover 01264 347630](tel:01264347630)
[Cirencester 01285 771022](tel:01285771022)
[Exeter 01392 573970](tel:01392573970)
[Milton Keynes 01908 564660](tel:01908564660)
[Suffolk 01449 900120](tel:01449900120)
www.cotswoldarchaeology.co.uk
enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE

Land adjoining Mancroft Road,
Caddington, Bedfordshire

FIGURE TITLE

Trench 1: photograph

<i>DRAWN BY</i>	RP	<i>PROJECT NO.</i>	MK0089	<i>FIGURE NO.</i>
<i>CHECKED BY</i>	DJB	<i>DATE</i>	02.06.20	
<i>APPROVED BY</i>	AS	<i>SCALE@A4</i>	N/A	3



Trench 4, looking north-east (1m scales)



Andover 01264 347630
 Cirencester 01285 771022
 Exeter 01392 573970
 Milton Keynes 01908 564660
 Suffolk 01449 900120
 www.cotswoldarchaeology.co.uk
 enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE

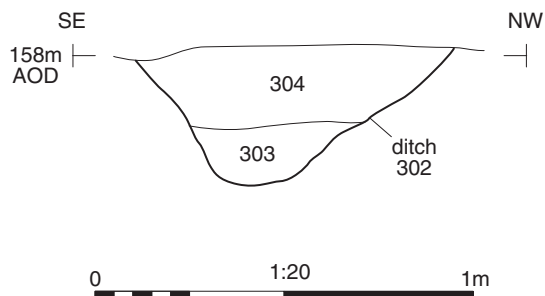
Land adjoining Mancroft Road,
 Caddington, Bedfordshire

FIGURE TITLE

Trench 4: photograph

DRAWN BY	RP	PROJECT NO.	MK0089	FIGURE NO.
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Section AA



Ditch 302, looking north-east (0.4m scale)



Andover 01264 347630
Cirencester 01285 771022
Exeter 01392 573970
Milton Keynes 01908 564660
Suffolk 01449 900120
www.cotswoldarchaeology.co.uk
enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE

Land adjoining Mancroft Road,
Caddington, Bedfordshire

FIGURE TITLE

Trench 3: section and photograph

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Andover Office

Stanley House
Walworth Road
Andover
Hampshire
SP10 5LH

t: 01264 347630

Cirencester Office

Building 11
Kemble Enterprise Park
Cirencester
Gloucestershire
GL7 6BQ

t: 01285 771022

Exeter Office

Unit 1, Clyst Units
Cofton Road
Marsh Barton
Exeter
EX2 8QW

t: 01392 573970

Milton Keynes Office

Unit 8 - The IO Centre
Fingle Drive, Stonebridge
Milton Keynes
Buckinghamshire
MK13 0AT

t: 01908 564660

Suffolk Office

Unit 5, Plot 11, Maitland Road
Lion Barn Industrial Estate
Needham Market
Suffolk
IP6 8NZ

t: 01449 900120

e: enquiries@cotswoldarchaeology.co.uk

