



**WRITTEN SCHEME OF
INVESTIGATION
for ARCHAEOLOGICAL
EXCAVATION, MONITORING
& RECORDING, &
EARTHWORK SURVEY**

**Land at South Caldecotte,
Bow Brickhill,
MILTON KEYNES**

**Planning Appeal:
APP/Y0435/W/20/ 3251121**

Accession Code: TBA
MK HER Event No: TBA

4th September 2020

**Local Planning Authority:
Milton Keynes Council**

Site centred at: SP 89100 34170

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1.0 INTRODUCTION

1.1 Site Location and Description

- 1.1.1 This Written Scheme of Investigation has been prepared by Michael Dawson formerly part of CgMs Heritage (part of the RPS Group) on behalf of Hampton Brook.
- 1.1.2 The subject of this assessment is the proposed investigation of archaeological remains at South Caldecotte located in land parcels BM288801 (Woburn) and BM403693 (Norman). Throughout this report for brevity and clarity these land parcels will be referred to by their ownership Woburn or Norman unless greater precision is required (Fig 1). The remains lie within a wider site area SD14 allocated in the Milton Keynes Council Plan:MK adopted 2019 and intended for commercial and employment use.
- 1.1.3 The development site comprises the allocated site at South Caldecotte "*Land South of Milton Keynes: Strategic Employment Allocation*" in the MK:Plan adopted May 2019. The allocated site comprises some 57ha and the archaeological deposits are located in three discrete areas (centred on SP 89100 34170).
- 1.1.4 The solid geology of the survey area comprises Jurassic mudstone formations, predominantly of Oxford Clay which is overlain by West Walton formation in the southeast. This solid geology is covered in part by discrete drift deposits of river terrace gravels in the west, towards the River Ouzel, and heads of sands or gravels across the west and centre (BGS 2018). The north east of site has no recorded superficial geology.

1.2 Project Background

- 1.2.1 Planning permission is sought for the development of a mix of Class B2/B8 and ancillary B1 employment floorspace.
- 1.2.2 This WSI has been written in accordance with Policy SD 14. It marks the culmination of a process which began with the preparation of a desktop Archaeological Assessment, to understand the likely presence of archaeological remains within the site, followed by geophysical survey and trial trench evaluation to refine that understanding.
- 1.2.3 This WSI has been written to define a programme of archaeological excavation and earthwork recording in light of the results of assessment and evaluation (MOLA 2015 (DBA); 2018 (Geophysical Survey) and 2018 (Trial Trenching)).

1.3 **Archaeological Background and Assessment of Significance**

1.3.1 The significance of a heritage asset is defined in published guidance (NPPF 2019, English Heritage 2008) as the sum of all its heritage values, including any contribution made by its setting. Heritage values are considered under four categories, not all of which will necessarily apply to any given site:

- **Evidential value:** the potential of the Roman deposits to yield evidence about past human activity through physical remains and archaeological deposits;
- **Historical value:** the ways in which past people, events and aspects of life can be connected through the development site to the present, either illustratively (by aiding interpretation of the past) or associatively (through direct links with famous people or events);
- **Aesthetic value:** the ways in which people draw sensory and intellectual stimulation from the remains; and
- **Communal value:** the meanings of the Roman remains for the people who relate to it, or for whom it figures in their collective experience or memory.

1.3.2 The archaeological potential of the development site has been addressed in a geophysical survey (MOLA report 18/51) which informed a scheme of archaeological trial trenching (MOLA 2018 Report 18/169). These investigations revealed three areas of below ground archaeological deposits comprising Roman and Iron Age deposits and an area of ridge and furrow. Roman deposits lie close to the carriageway of the diverted A5 where earlier investigation had recorded a small cremation cemetery (MMK 5975) the line of a Roman road running north from Magiovinium (MMK 5974) as well as Roman period stone buildings (MMK 686) and Roman period ceramics (MMK 5509). The deposits on the line of the diverted A5 were subject to excavation by D S Neal in the 1980s. The deposits found beneath the carriageway were beyond the scope of the geophysical survey in 2018, however the anomalies provided a clear indication that the character and morphology of deposits immediately to the east of the A5 road and within the western section of the development continued the trends noted in the earlier excavations. Trial trench evaluation in 2018, which followed the geophysical survey, confirmed the character of the archaeology as the remains of activities on the periphery of the Roman small town of Magiovinium.

1.3.3 Below ground evidence dating to the Roman period is sealed beneath pasture fields in which ridge and furrow of medieval, and possibly later date, remain as earthworks. In the area of Unwin's ownership parcels BM239493, BM 239231 will remain unexcavated.

Iron Age enclosures, immediately to the east of the Roman street and the isolated Iron Age enclosure on Norman's land, are heavily plough eroded.

1.4 **The Iron Age & Roman Period Evidence (Normans and Woburn)**

1.4.1 The principal focus of the archaeology which is the subject of this proposal lies within the area indicated on Fig 4 (Norman's and Woburn). In this location the evidence survives primarily as archaeological sites of buried archaeological deposits from the Iron Age and Roman periods whilst the earthwork remains comprise the upstanding remnants of agriculture from the Medieval Period. The full extent of archaeology within the South Caldecotte Strategic Employment Allocation includes enclosures of Iron Age date on high ground to the east; a street running out from the core area of the Roman town, an area of enclosures further to the east beyond a small brook which flows westwards to the River Ouzel and an enclosure (Woburn) close to the southern roundabout on the A5 and the earthwork remains of medieval farming (ridge and furrow). This section and those following relate to Woburn's, an enclosure of Roman date to the south, and Iron Age/Roman enclosures east of the brook and within Norman's land.

1.4.2 **Evidential value**

1.4.3 The spatial disposition of the below ground archaeology at South Caldecotte indicates that it represents the periphery of the Roman small town of Magiovinium. Evaluation indicates a short stretch of metalled Roman period street and adjacent enclosures / occupation leads north eastwards away from the urban core of the Roman small town towards a stream and open countryside. Here several enclosures east of the stream, today identified as Normans' land (BM403693), may have been occupied in the late Iron Age and Roman period. To the north-east of the stream Trenches 14 and 25 were positioned to examine two of the rectilinear enclosures revealing the enclosure ditches and a further possible curvilinear ditch beyond the northernmost enclosure. Several internal features were also identified. The enclosures contained both Iron Age and Roman period ceramics and although plough eroded have the potential to reveal further evidence of early occupation.

1.4.4 To the south lies an area within Woburn Estates' ownership (BM345388, BM288801) identified as an enclosure of Roman date which extends the area of enclosures identified by Neal (1987, Site 17) in 1978-80.

1.4.5 In areas of Unwin's ownership (BM 239493, BM249231) and Woburn Estates (BM345388, BM288801), ridge and furrow, the remains of medieval and possibly later ploughing, survives as earthworks.

1.4.6 **Historical Value**

1.4.7 The Woburn and Normans areas of Iron Age and Roman archaeology are of historical value for a number of reasons, both illustrative and associative:

1.4.8 ***Illustrative***

1.4.9 The area is a common survival of archaeology peripheral to a small Roman town. It comprises the type of activities which might be expected of such areas within the hinterland of the town. The enclosures east of the brook, which flows through Unwin's land are an interesting example of settlement transition from urban periphery to rural landscape.

1.4.10 The small town of Magiovinium has long been considered to have its origins in a small fort, adjacent to the roundabout on the A5, which attracted settlement further north and close to Dropshort Farm. The enclosures to the east of the Brook and on Normans land are of landscape interest interdigitating the area of peripheral activity into the countryside.

1.4.11 ***Associative***

1.4.12 The Roman remains have limited associative value in three ways. Firstly, the enclosure within the Woburn estates ownership is a small area of surviving, Roman activity on the periphery of a small town. This probably dates from a period when the town was expanding. Its greatest extent was characterised in Neal's terms by ribbon development along a street leading to the core of the small town (the SAM).¹ Secondly, it may be associated with a recognised period of decline in the 3rd and 4th centuries which appears to have affected some small towns in the south and Midlands. This occurred at the same time that some of the major urban sites were developing significant defences and experiencing a change in focus and function. Some towns during this period saw the enlargement and improvement of public buildings whilst others experienced growth led by economic factors such as the establishment of markets.

1.4.13 There is also some significance in that the evidence represents the periphery of a small town in an area which might be considered to be especially sensitive to a variety of factors such as economic growth, proximity to Watling Street, existing facilities and proximity to other centres of population and resources. The Iron Age dating of the

¹ Official encouragement of settlements like Magiovinium and Towcester was described as a new model by Burnham and Wachter in 1990 to distinguish it from the military, economically driven or developmental models, characterised by settlements (vici) outside Roman forts (Burnham and Wachter 1990, 9)

peripheral enclosures hints at an earlier settlement pattern, possibly subsumed within the Roman period landscape.

1.4.14 **Aesthetic value**

1.4.15 The Iron Age and Roman archaeology and the earthworks of the medieval ridge and furrow within Woburn and Normans at the South Caldecotte site have little aesthetic value in their current form, as it is private agricultural land adjacent to the A5. It is effectively hidden from public view and has not been the focus of research until the present round of evaluation.

1.4.16 **Communal value**

1.4.17 The archaeology of Magiovinium as a whole has some communal significance. This is a focus of interest for the public. It is cited by the Council in the Core Strategy (2013) when characterising the historic environment (para 15.3) and similarly in the MK Proposed Submission Plan 2017 para 19.9. In the community the Buckinghamshire Archaeological Society has been the principal source of articles on excavations at the Roman small town and the small town is cited in the UK & European Metal detecting Forum and a focus for the Milton Keynes Metal Detecting Club.

1.4.18 There is currently no public access to the archaeology either within Norman's land or the Woburn Estates holdings. Woburn's lies adjacent to a heavily used modern trunk road (A5 dual carriageway). Understandably there is nothing on site to inform passers-by of the history or function of the site.

1.4.19 **Status**

1.4.20 The Iron Age and Roman archaeology within Normans ownership and the Woburn Estates area has no formal status though it may be considered to be within the setting of the Scheduled Ancient Monument to the west. The scheduled monument cannot be seen from the South Caldecotte site which lies east of the A5 where the road carriageway and hedging block any line of sight. However, the site can be experienced as part of the SAM due to the results of the recent geophysical survey and trial trenching as well as an awareness of Neal's excavations in the late 1980s.

1.4.21 When assessed against the criteria used in scheduling, group value, survival (extent), potential, documentation and condition of the significance of the archaeology is low. It does not survive as above ground earthworks. The archaeology within Normans land is plough eroded and no historic surfaces such as floors or working areas have been recorded.

1.4.22 The extent, character and relationship of the Iron Age and Roman archaeology to Magiovinium suggests that it is not of schedulable quality.

1.4.23 **Summary**

1.4.24 The significance of the archaeological deposits within the ownership of Normans land and Woburn Estates has been assessed above and found to be low. The archaeological evidence of development on the periphery of a Roman small town may be capable of the informing the Research Frameworks² objectives in relation to crafts trade and industries (12.11) and settlement (12.6). In addition research objectives for the east counties are relevant with respect to informing the development of small towns in relation to: changes in their role as centres of supply and demand; the characterisation of late Roman towns in the region, the morphology of small towns.³ To the research objectives of the eastern counties could be added the research objectives of the East Midlands⁴ 5B Dissemination, 5e Diet and Health 5G Secondary Urban Centres and making a minor contribution to 5H Landscape Context. The ridge and furrow is of lesser significance with the potential to contribute in a minor way to Research Objective 7I Development of the Open Field System.

1.5 **Ridge and Furrow (Unwin's and Woburn)**

1.5.1 The ridge and furrow at Unwin's and Woburn was once part of wider area of similar earthworks. They are the remains of medieval and possibly later ploughing in the parish of Bow Brickhill. The ridge and furrow was first recorded by the Desk Based Assessment (MOLA 2015 15/151) and it was illustrated in Fig 21 described as *'feint north-south-aligned earthworks'*.

1.5.2 The ridge and furrow at Unwin's and Woburn represent small surviving areas of medieval earthworks from Bow Brickhill parish. The land use and resources available to a medieval township⁵ comprise four main types, arable, meadow, woodland and waste (often referred to as heath or moor, fen). In the Midlands many townships were characterised by having some 90% arable land. This was divided into open fields and subject to crop rotation, often referred to as the three-field system. Ridge and furrow represents a cultivated ridge of land, a strip field or furlong, flanked by furrows for ease of

² Fulford 2014, 179-184 in Hey and Hind 2014,

³ Medleycott 2011, 47-48

⁴ Knight et al 2012, as updated by <https://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/wiki/>

⁵ The term township or vill was the basic economic unit in the countryside before the industrial revolution. It contained all the essential resources needed by an agricultural community. It contained all the essential resources needed by an agricultural community water supply, arable, pasture (had its own field system), meadow land, access to woodland for timber and fuel and a mill. It was the area occupied by a distinct community and is not to be confused with a manor (area of secular jurisdiction) or parish (area of religious practice served by a parish church supported by tithes), although these sometime occupy the same area.

identification and drainage. Evaluation in 2018 confirmed that some ridge and furrow survived as low earthworks in both Unwin's and Woburn.

1.5.3 Analysis of the ridge and furrow was carried out in 2001 when English Heritage⁶ undertook a survey of ridge and furrow in parts of 9 counties which included Milton Keynes (Hall 2001, Fig 4). The English Heritage survey mapped and assessed the ridge and furrow in the whole of the South Midlands, East of Birmingham based on the extent of survival, and the quality of historic documentation within each township. Each township (of 1577) was scored on a four-point system based on:

- Poor: little or no ridge and furrow
- Fair: some ridge and furrow
- Good: fair quantity of ridge and furrow with *vill* and other associations
- Outstanding: a large area of ridge and furrow, usually with associations

1.5.4 From this assessment 140 townships were identified which had, by area, more than 18% survival of ridge and furrow. This sample was examined county by county with each county archaeologist taking into account fragmentation, village earthworks, and other historic associations. From this sub-sample 43 townships in 40 civil parishes were identified as priority townships. No priority townships were identified in the Milton Keynes area, though Passenham on the Northamptonshire border was included. The priority townships were identified based on scheduling criteria: group value, survival (extent), potential, documentation and condition.

1.5.5 In addition to this extensive survey, which did not identify the ridge and furrow of Bow Brickhill as significant, the development site has been evaluated by geophysical survey. The surveyors concluded that *"parallel linear anomalies relating to medieval and early post-medieval ridge and furrow cultivation are very widespread across the survey area. The furrows are typically spaced at 5m to 8m intervals, and often follow gentle reversed-S curves rather than running straight. They occur in coherent blocks (furlongs) the ends of which (headlands) are sometimes followed by modern field boundaries. The clearest anomalies occur in the southern pasture fields where the ridge and furrow is best preserved, still surviving as earthworks. Elsewhere the anomalies vary from weak to very weak. This variation will principally reflect broad scale variations in the magnetism of the ploughsoil and subsoil, although the degree of truncation by later ploughing may also be a factor"*.

⁶ English Heritage 2001 *Turning the Plough Midland Open fields: landscape character and proposals for management*, Hall D

1.5.6 There is no available quantification of the extent to which the ridge and furrow survives as earthworks in the parish. Bow Brickhill was excluded from the priority townships of the Turning the Plough project (Hall 2001) as it had less than 18% survival.

1.5.7 The earthwork remains of ridge and furrow are similarly non-designated. They comprise a small surviving proportion of a much larger area of such earthworks and consequently they have only low value in terms of group value; their survival over a small area is high, but their extent is low, their potential to illuminate more than a restricted range of site formation processes is limited. Their significance is therefore moderate to low.

1.6 **Iron Age D-shaped Enclosure (Norman's Land)**

1.6.1 The trial trenching in 2018 of an enclosure identified by geophysical surveyed revealed archaeology of Iron Age date on a slightly prominent rise in the eastern part of the site (MOLA 2018). The D-shaped enclosure evaluated by trenches 33 and 34 revealed two ditches associated with the enclosure ditch which were both heavily truncated by modern ploughing, earlier furrows and land drains. Small fragments of Iron Age/Romano pottery were found within the ditches. The only internal feature noted was the remains of a shallow posthole from which fragments of Iron Age/Romano British pottery were recovered from the upper fill.

1.6.2 While a good correlation was generally observed with the geophysical survey results, the scale of plough erosion was unexpectedly high. The significance of this enclosure is very limited. It has evidential value as part of the pre-Roman and Roman period landscape; it retains evidential value through the survival of ceramics and the slight possibility of further internal features. However, its historic value is limited to archaeological appreciation of its landscape value. Its significance is local though its aesthetic value remains in the potential of the enclosures to illuminate the landscape transition from late Iron Age to Roman period. The potential for identifying coherent occupation or settlement remains within the enclosure is, however, limited and its significance low.

1.7 **Cremation (Trench 52)**

1.7.1 During the trial trench evaluation (MOLA 2018, 5.2.6, Fig 39) a single cremation, presumed to be of Roman date was recorded in Trench 52. A Watching Brief, adhering to the Standard and Guidance for a Watching brief published by the Chartered Institute for Archaeologists⁷ will be carried out in the vicinity of the trench, whilst the location of the cremation will be subject to formal re-excavation and investigation. Investigation of

⁷ *Standard and guidance for an archaeological watching brief*, Published December 2014, Updated June 2020
Chartered Institute for Archaeologists

the cremation and any other archaeology identified will be recorded to the specification in Section 4.4 -4.8 and 5 below.

1.8 **Watching Brief Provision**

- 1.8.1 Adopting the precautionary principle, when development close to the boundary of Site 2 (Roman period archaeology within Unwin's land (BM239493, 249231) is undertaken an archaeological Watching Brief will be maintained. The objective of this will be to record any hitherto undiscovered archaeology and in particular the potential survival of cremation burials, similar to those found by Neal on Site 18. The Watching Brief will be carried out to the Standards of the Chartered Institute for Archaeologists (see FN 11) and any necessary recording to the specification in Section 4.4 -4.8 and 5 below.

2.0 AIMS & OBJECTIVES

2.1 The aims of the earthwork recording and archaeological excavation are as follows:

- To verify and further explore the results of the trial trenching
- To determine the extent, date, character, condition, significance and quality of the archaeological remains within the areas of identified by desk-based assessment, geophysical survey and trial trenching.
- Develop an understanding of the economy of the site, through analysis of recovered artefacts and ecofacts.
- Examine the environmental setting of the site, including the impact of human action on the local environment.
- Contribute to an understanding of the pattern and development of Iron Age and Romano-British settlement/agriculture in the Milton Keynes area, with reference to evidence for contemporary sites in this landscape
- To record the earthwork remains of medieval agriculture
- To produce a site archive for deposition with an appropriate museum and to provide information for accession to the Milton Keynes Historic Environment Record.

2.2 The programme of archaeological investigation will be conducted within the general research parameters and objectives defined by Solent-Thames Research Framework for the Historic Environment Resource Assessments and (Hey and Hind 2014). Where appropriate because of the geographical location of Milton Keynes reference may be had to the East of England Research Frameworks (Medleycott 2011). Key research aims include:⁸

- The characterisation of Iron Age and Roman rural settlements and the development of the agrarian landscape;
- The investigation of sites with well-preserved deposits of both late Iron Age and Roman date in order to examine continuity of local tradition.
- Investigation of urban expansion and contraction
- Investigate the relationship between town and country from the inception of the Roman town to its demise in the early medieval period.

⁸ See Fulford 2014 pages 180-181 in Hey and Hind 2014

- 2.3 The investigation will also take account of the national research programmes outlined in Historic England/English Heritage's '*Strategic Framework for Environment Activities and Programmes in English Heritage (SHAPE)*' first published in 2008.
- 2.4 This specification conforms to the requirements of the National Planning Policy Framework (NPPF). It has been designed in accordance with current best archaeological practice and the appropriate national standards and guidelines including:
- *Management of Archaeological Projects* (English Heritage, 1991);
 - *Code of Conduct* (Chartered Institute for Archaeologists, 2014);
 - *Standard and Guidance. Archaeological Excavation* (Chartered Institute for Archaeologists, 2014);

3.0 INVESTIGATION STRATEGY

- 3.1 In order to meet the aims and objectives detailed above, a programme of earthwork recording and archaeological area excavation will be carried out.
- 3.2 The programme of earthwork survey will involve either drone or ground based survey of the area of ridge and furrow identified in Fig 7. Archaeological works will entail machine stripping and excavation in advance of development in the 3 areas illustrated in Fig 5. All elements of the investigation will look to verify and build upon the desk-based, geophysical survey and trial trenching results.
- 3.3 The fieldwork progress and results will be reviewed and discussed with the Archaeological Officer for Milton Keynes Council (the Planning Archaeologist).
- 3.4 On completion of all fieldwork, the field data will be assessed. The results of the assessment and detailed proposals for analysis of the field data will be agreed with the Planning Archaeologist.
- 3.5 A written final report will be prepared detailing the findings of the archaeological investigation. A project archive will be created and deposited with the appropriate museum store, subject to the agreement of the landowner, to ensure the long-term preservation of the archaeological information.
- 3.6 Any variations to this strategy will be discussed and agreed with the Planning Archaeologist prior to their implementation, unless necessary for Health and safety concerns or due to impact upon a constraint such as ecology or services.

4.0 METHOD STATEMENT

4.1 Pre-Commencement

- 4.1.1 In order that the investigation supplies information of the required quality, the Codes and Standards and Guidance issued by the Chartered Institute for Archaeologists (CIfA) form a requirement of this specification
- 4.1.2 An accession number will be sought for the earthwork recording and excavation unless otherwise agreed that the accession number for the evaluation can be used during the mitigation works/archaeological excavation. This number is currently AYBCM:2018.106, and should be used on all documentation.
- 4.1.3 The Planning Archaeologist will be given a minimum of 1 weeks' notice prior to the commencement of site works.

4.2 Earthwork Survey⁹

- 4.2.1 Earthwork survey may be undertaken using either Drone survey or differential ground survey using ground based Global Positioning Systems (GPS) and an Electronic Distance Measuring (EDM). The ground survey will be undertaken using a combination of objective and subjective survey techniques. The objective, systematic part of the survey will be carried out using the Real-time Kinematic DGPS systems with 2m transects surveyed across the site perpendicular to the edges of the survey areas. Transects will be controlled and recordings automatically taken every 0.5 metres to a tolerance level of $\pm 10\text{mm}$.
- 4.2.2 Drone photography, alternatively, may be used to create a digital model of the earthworks. The image matching based on pixel patterns will be analysed through photogrammetric multi-view stereo algorithms to form a digital model of three-dimensional space and create a digital surface model of the earthworks.
- 4.2.3 Whichever methodology is used the area plan will be produced in MapInfo and Vertical Mapper software, drawn to English Heritage conventions and survey data combined with Ordnance Survey digital Terrain Models to study the site in its wider landscape context. All data will be processed in MapInfo Geographic Information Systems (GIS) to create a nearest neighbour interpolation model to project the site in 3D.

⁹ Due to advances in software and technology this survey methodology may be refined prior to the start of recording. Any non-material variation of this kind will be agreed with the local authority.

4.2.4 A walkover survey will also be undertaken using a hand-held GPS and computer to give coordinates for the site together with a photographic record and written description. The results will be integrated with the report on the below ground investigations.

4.3 Archaeological Investigation (Below Ground Archaeology)

4.3.1 Figure 5 indicates the anticipated areas that will be stripped in order to meet the project objectives. The precise limits of excavation may be altered slightly on site in response to the extent and nature of archaeological features exposed or on-site constraints.

4.3.2 All plant movement will be via access routes agreed with the Client or their appointed site agent/principal contractor. The excavation area will be scanned with a Cable Avoidance Tool (CAT) prior to excavation by a competent person holding up to date training certificate. Care should also be taken to avoid all overhead wiring with passing zones identified and an exclusion zone fenced off in accordance with HSE guidelines.

4.3.3 Ploughsoil and subsoil will be removed by mechanical excavator using a toothless ditching bucket (c.1.8m wide), under continuous archaeological supervision. The spoil generated during the excavation will be removed by dumper and mounded away from the edges of the stripped areas.

4.3.4 Mechanical excavation will cease at either undisturbed natural deposits or the top of archaeological deposits. The nature of these deposits will be assessed by hand excavation. Upcast and spoil from mechanical excavation will be scanned by eye and by metal detector to aid the recovery of topsoil artefacts.

4.3.5 Following the initial soil strip, priority will be given to the cleaning of features as required to produce a pre-excavation plan.

4.3.6 The following sampling levels are anticipated to form the standard to be applied to features and deposits identified as contributing to the project objectives and any additional specific objectives identified:

Feature Class	Proportion to be excavated
Pre-modern linear features not associated with structural remains	10% of fill
Domestic ring ditches or roundhouse gullies	50% of fill initially
Pits associated with agricultural & other activities	50% of fill
Layers/ deposits/horizontal stratigraphy relating to domestic/industrial activity [e.g. hearths, floor surfaces, floor make-up deposits...]	100% of deposit
Post-built structures of pre-modern date	100% of each post-hole fill
Linear features (ditches/gullies...) associated with structural remains	20% of fill
Enclosure Ditches (prehistoric)	10% of fill
Human burials, cremations & other deposits relating to funerary activity	100% of fill/deposit
Prehistoric discrete pits	100% of fill/deposit

4.3.7 Excavation will be driven by the research strategy with the provision for refinement during fieldwork. This will involve a characterisation of the archaeology across the excavation site, followed by more closely targeted excavation, focussed on features/locations likely to contribute most to an understanding of the site. Environmental and scientific sampling strategies will also be refined on site in this phase and throughout the project in consultation with specialists, as appropriate.

4.3.8 Should archaeological remains extend to more than 1.2m below ground level, it may be necessary to step or shore the sides of the excavation area locally in order to enable safe working.

4.4 Recording

4.4.1 A site grid will be established relative to Ordnance Survey National Grid. Data capture for site plans will be by GPS/Total Station, electronic distance measurement, measured survey or a combination of techniques. Data-capture for site plans will as standard be capable of reproduction at a scale of 1:100; more complex features or areas of complex archaeological remains will be recorded at greater resolution (for reproduction at 1:10, 1:20, 1:50 as necessary). The sections of excavated archaeological features will be recorded by measured drawing at an appropriate scale (normally 1:10 or 1:20). Spot heights and those of individual features will be recorded relative to Ordnance Datum.

4.4.2 All archaeological features or deposits encountered will be described fully on pro-forma individual context recording sheets, using standard methods of the archaeological contractor appointed. A stratigraphic matrix will be compiled to record the relationships of any archaeological features or deposits encountered and to indicate those features or deposits requiring further stratigraphic clarification by excavation.

4.4.3 A photographic record, utilising black and white negative film, supplemented by high resolution digital data capture, will be maintained during the course of the fieldwork and will include:

- the site prior to commencement of fieldwork;
- the site during work, showing specific stages of fieldwork;
- the layout of archaeological features;
- individual features and, where appropriate, their sections;
- groups of features where their relationship is important.

4.4.4 Photographs will be taken utilising digital cameras of no less than 10 megapixels and in RAW format. All photography will follow the archaeological contractor's guidance which conforms to industry best practice (ADS 2013). Images will be converted to uncompressed baseline v.6 TIFF for archiving. All images will have accompanying metadata specifying; photo ID, capture device, converting software, colour space, bit depth, resolution, date of capture, photographer, caption, and any alterations made to the image.

4.5 Artefact Recovery

4.5.1 The finds retrieved from the site will be treated in accordance with industry best practice and guidance (English Heritage 2005, 2006b and Watkinson and Neal 1998).

4.5.2 All artefacts from excavated contexts will be retained by the archaeological contractor, except for unstratified modern material. Artefacts will be bagged and labelled according to the individual deposit from which they were recovered, ready for later cleaning and analysis.

4.5.3 All finds as a minimum will be cleaned, weighed, counted and identified. Any artefacts requiring immediate stabilisation will be done so in line with First Aid for Finds (Watkinson and Neal 1998). Where warranted, metallic artefacts and residues will be submitted for X-radiography and stabilisation, in accordance with industry best practice (English Heritage, 2006b).

4.5.4 If finds are made of gold, silver or other items of possible treasure these will if possible be archaeologically excavated and removed to a safe place. Such finds will also be reported immediately to the local Coroner (within 14 days, in accordance with the 1997 Treasure Act). Should it not be possible to remove the finds that day suitable security will be arranged.

4.6 Human Remains

4.6.1 Any human remains encountered will be cleaned with minimal disturbance, recorded and left in situ and only removed if necessary. Any human remains requiring removal will be done so following receipt of a Ministry of Justice licence. Investigation and excavation of human remains will be undertaken by, or under supervision of, suitably experienced specialist staff and in accordance with IFA Guidelines (*"Excavation and Post-excavation Treatment of Cremated and Inhumed Human Remains"* Roberts, C & McKinley, J 1993 – IFA Technical Paper 13; *"Guidelines to the standards for recording human remains"* ed Brickley, M & McKinley, J 2004 – IFA Paper 7). Assessment of excavated human remains will be undertaken in line with current English Heritage Guidelines (*"Human Bones from archaeological sites: Guidelines for the production of assessment documents and analytical reports"* Centre for Archaeology Guidelines 2004). The archaeological contractor will comply with all reasonable requests of interested parties as to the method of removal, re-interment or disposal of the remains or associated items. Every effort will be made, at all times, not to cause offence to any interested parties. The Planning Archaeologist will be informed immediately if human remains are discovered.

4.7 Environmental Samples

4.7.1 The environmental sampling strategy will include the routine sampling of deposits for the retrieval and assessment of the preservation conditions and potential for analysis of all biological remains, including mollusc remains, and will be developed in consultation with an environmental specialist and the Planning Archaeologist. The resulting site-specific environmental sampling strategy will be documented and reviewed as the project progresses.

4.7.2 The environmental specialist will conduct or commission, as appropriate, programmes of scientific investigation in conjunction with the fieldwork, the results of which will be presented in the final publication or report. They will also ensure that, where time allows, the strategy evolves on site by seeking to ensure that bulk samples taken in the initial stages of the project are processed quickly and the results fed back to inform the excavation strategy. All environmental work will be undertaken in accordance with current Historic England guidelines (see *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation*, Centre for Archaeology Guidelines 2011).

4.7.3 Sample sizes will normally be 40-60 litres unless the deposit is smaller in volume. Samples will be directed to a representative range of context type from each phase, and examine:

- Survival of material
- Key archaeological contexts
- Potential

4.7.4 A suitable specialist will, if necessary, make a site visit to advise on deposits suitable for environmental sampling and/or geoarchaeological assessment.

4.7.5 Charred plant samples will be wet sieved with flotation using a 0.5mm mesh. All residues will be checked.

4.7.6 Should waterlogged deposits be encountered they will be left in situ until such time as further mitigation works are required. If this is not possible then further consultation with a suitable specialist will determine methods for recovery.

4.8 Other Samples

4.8.1 Samples will be taken for scientific dating (principally radiocarbon ¹⁴C dating), where dating by artefacts is insecure and where dating is necessary in order to characterise the site or for development of the subsequent mitigation strategy.

4.8.2 Should in situ timbers be found to survive in good condition, samples will be taken for dendrochronological determination following procedures presented in the English Heritage document 'Dendrochronology: guidelines on producing and interpreting dendrochronological dates'.

4.8.3 Where there is evidence for industrial activity, macroscopic technological residues (or a sample of them) should be collected by hand. Separate samples (c.10ml) should be collected for micro-slugs (hammer-scale and spherical droplets). Excavation and sampling of such deposits will be in accordance with the Centre for Archaeology Guideline on Archaeometallurgy.

5.0 REPORTING AND ARCHIVING

5.1 General

5.1.1 Both the Planning Archaeologist and the relevant museum curator will be informed in writing of the completion of the fieldwork. The archaeological fieldwork contractor will also provide an estimate of the size of the archive and programme for deposition. The archive will be prepared in accordance with the museum guidelines and the Planning Archaeologist will be informed in writing of final deposition of the archive.

5.1.2 A brief initial site summary will be made available within 4 weeks of the completion of site works.

5.2 Post Excavation Assessment

5.2.1 Following the completion of the field work a programme of post-excavation assessment and reporting, in line with English Heritage "MoRPHE" procedures, will be undertaken. Initial Post excavation work will comprise the following:

- checking of drawn and written records during and on completion of fieldwork;
- production of a stratigraphic matrix of the archaeological deposits and features present on the site, if appropriate;
- cataloguing of photographic material;
- cleaning, marking, bagging and labelling of finds according to the individual deposits from which they were recovered. Any finds requiring specialist treatment and conservation will be sent for appropriate treatment. Finds will be identified and dated by appropriate specialists;
- Where artefacts are recovered from archaeological features they shall be quantified by date, class and type.
- The processing and analysis of soil samples.

5.2.2 An assessment report will be produced. This will comprise an integrated illustrated site narrative together with specialist assessment of artefact assemblages and palaeo-environmental samples, together with recommendations for further analysis.

5.2.3 Following completion of this assessment a review of the post-excavation programme will be held in consultation with the Planning Archaeologist. A timetable including the aims of specialist research and intended final report format ('grey literature'/journal article/other medium) will be presented in an Updated Project Design. The timetable will include agreed monitoring points. [This stage may be omitted if the fieldwork results are less complex]

5.3 Post Excavation Analysis and Reporting

- 5.3.1 Following the review a full post-excavation programme will be implemented including specialist reports, to be completed within 1 year, leading to the production of an archive report and draft publication.
- 5.3.2 The report will seek present the results of the archaeological fieldwork including where necessary the results of any specialist and scientific assessment/analysis and place the results within their local, regional and national context.
- 5.3.3 The report will look to identify any potential research priorities where applicable.
- 5.3.4 The final format(s) of reporting will be confirmed as part of the post-excavation assessment process (5.2 above)

5.4 Dissemination

- 5.4.1 Copies of the final report will be sent to the client for approval, and then the Planning Archaeologist and the LPA.
- 5.4.2 The OASIS online report form for the fieldwork will be updated and completed. A digital copy of the report will be uploaded to the OASIS site.

5.5 Archive

- 5.5.1 An integrated project archive (including both artefacts/ecofacts and project documentation) will be prepared upon completion of the project. The integrated archive will be deposited with the Buckinghamshire County Museum.
- 5.5.2 An archive accession number will be obtained from the relevant collecting museum prior to works commencing, and the archaeological contractor will complete the required archive deposition forms.
- 5.5.3 The archive of finds and records generated during the project will be kept secure at all stages of the project. All records and materials produced will be archived in accordance with industry best practice (English Heritage 2006, ClfA 2014g, and SMA 1993).
- 5.5.4 Notes or articles describing the results of the archaeological fieldwork will be submitted for publication to an appropriate local journal and/or national journals, dependant on the nature of the results.
- 5.5.5 OASIS (**O**nline **A**cces**S** to the **I**ndex of archaeological investigation**S**) data capture forms will also be completed and submitted on completion of the project.

6.0 TIMETABLE & PERSONNEL

- 6.1 The works will be undertaken on behalf of the developer by professional archaeological contractor. Details of the contractor and key personnel will be provided to the Planning Archaeologist prior to the start of work. RPS Heritage will oversee implementation of the project on behalf of the developer. RPS Heritage is a Registered Organisation with the Chartered Institute for Archaeologists.
- 6.2 Dr Michael Dawson MCI/A FSA of RPS Heritage will be in overall charge of the archaeological project. Work on site will be led by a Project Officer/Project Supervisor from the appointed archaeological contractor, assisted by a team of assistants drawn from their permanent and temporary staff. Actual staff resources will be managed to ensure successful implementation of the programme of works.
- 6.3 The date of fieldwork has yet to be determined but is anticipated during the year 2019/2020. The fieldwork is likely to be completed within 2-3 months.
- 6.4 An initial summary of results will be prepared
- 6.5 The assessment report will be available within 6 months of completion of fieldwork
- 6.6 The final report on the investigation will be completed within 2 years of the end of fieldwork. and a report produced within 3 months of completion of fieldwork. This reporting programme is subject to review.

7.0 MONITORING

- 7.1 The aims of monitoring are to ensure that the archaeological works are undertaken within the limits set by this specification, and to the satisfaction of Planning Archaeologist (on behalf of the Local Planning Authority).
- 7.2 RPS will monitor implementation of the programme of works on behalf of the developer.
- 7.3 The Planning Archaeologist will be given notice of when work is due to commence and will be free to visit the site by prior arrangement with RPS. The Planning Archaeologist will monitor implementation of the programme of works on behalf of the Local Planning Authority and evaluate the work being undertaken on site against the methodology detailed in this specification.
- 7.4 The Planning Archaeologist will also be responsible for considering any changes to the specification of works; any such alterations should be agreed in writing with the relevant parties prior to commencement of onsite works, or at the earliest available opportunity, unless there is a direct risk to health and safety of the onsite team or impact upon a site constraint such as ecology or services.

8.0 INSURANCE and HEALTH AND SAFETY

- 8.1 The archaeological contractor will produce evidence of Public Liability Insurance to the minimum value of £5m and Professional Indemnity Insurance to the minimum of £5m and Profession.
- 8.2 All works will be in compliance with the Health and Safety at Work Act (1974) and all applicable regulations and Codes of Practice and the Construction Design Management Regulations 2015.
- 8.3 All archaeological staff will undertake their operations in accordance with safe working practices.
- 8.4 A site-specific risk assessment will be undertaken and recorded prior to the commencement of work on site.
- 8.5 A continuous process of dynamic risk assessment will be undertaken and if significant hazards are identified a specific risk assessment will be undertaken and recorded. Control measures will be implemented as required in response to specific hazards.
- 8.6 Safe working will take priority over the desire to record archaeological features or remains, and where it is considered that recording is dangerous, any such features or remains will be recorded by photography, at a safe distance.
-

9.0 **SOURCES CONSULTED**

1. **Internet**

British Geological Survey –

<http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>

British History Online – <http://www.british-history.ac.uk/>

Domesday Online – <http://www.domesdaybook.co.uk/>

Historic England: The National Heritage List for England –

2. **Bibliographic**

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Burke J 2018 *Archaeological trial trench evaluation on land at South Caldecotte Milton Keynes Buckinghamshire October 2018* (EMK 1365; AYBCM:2018.106)

Burnham B, Wachter J 1990 *The 'Small Towns' of Roman Britain*, London: Batsford

Chartered Institute for Archaeologists 2014 *Standard & Guidance Standard and guidance for archaeological excavation*, Reading: CIfA

Chartered Institute for Archaeologists 2020 *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*, Reading: CIfA

Chartered Institute for Archaeologists 2020 *Standard and guidance for an archaeological watching brief*, Reading: CIfA

Davies M J *et al.*, 2004 *Mitigation of Construction Impact on Archaeological Remains*, London: English Heritage

Department of Communities and Local Government *National Planning Policy Framework* 2019

Dodd A *et al.*, 2014 *Early Medieval Research Agenda*, in Hey and Hind 2014, 233-237

English Heritage (Historic England) 2006 *Developing Methodologies, The Soil Stack Project, Research News, Newsletter of English heritage's Research Department*, 3 2006, 14-15

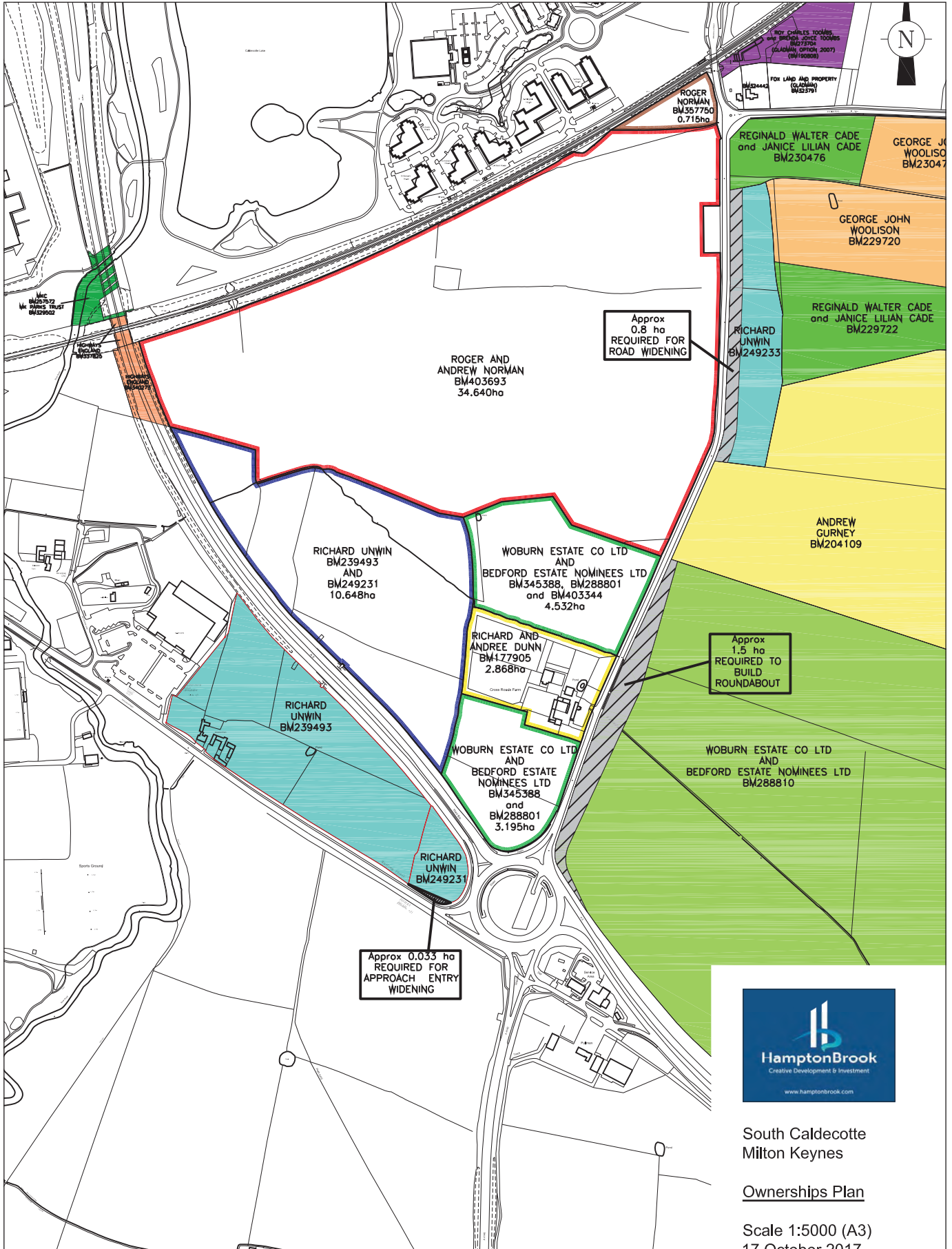
Fulford M 2014 *Roman Period Research Agenda*, in Hey and Hind 2014, 179-184

Glazebrook J 1997 *Research and archaeology: A framework for the Eastern Counties 1 Resource Assessment*, EAA Occ Papers 3

Hall D 2000 *Turning the Plough. Midland Open Fields: Landscape character and proposals for management*, Northampton: Northants CC & English heritage

Hey G, Hind J 2014 *Solent Thames Research Framework for the Historic Environment Resource Assessments and Research Agendas*, Oxford: Oxford Wessex Monograph No 6.

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- Historic England Historic Environment Good Practice Advice in Planning: 1 The Historic Environment in Local Plans July 2015
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- Historic England Historic Environment Good Practice Advice in Planning: 3 The Setting of Heritage Assets December 2017
- Kaiser A 2011 *Roman Urban Street Networks*, London: Routledge
- Medleycott M 2011 *Research and Archaeology Revisited A revised framework for the East of England*, EAA24
- Millet M 1992 *The Romanisation of Britain, An Essay in Archaeological Interpretation*, Cambridge: CUP
- Neal D S 1987 Excavations at Magiovinium, Buckinghamshire, 1978-80 *Records of Buckinghamshire, Vol 29 1987*.



South Caldecote
Milton Keynes

Ownerships Plan

Scale 1:5000 (A3)
17 October 2017

Fig 1 South Caldecott Ownership Plan

South Caldecott		<p>London Cheltenham Kettering Newark Birmingham</p> <p>Planning & Development Archaeology & Historic Buildings</p>
Not to scale Illustrative only		
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Checked by:		



Fig 2 Geophysical Survey

South Caldecott

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Fig 3 Trial trenches at South Caldecott overlying the geophysical survey

South Caldecott

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 Birmingham
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 Planning & Development
 Archaeology & Historic Buildings

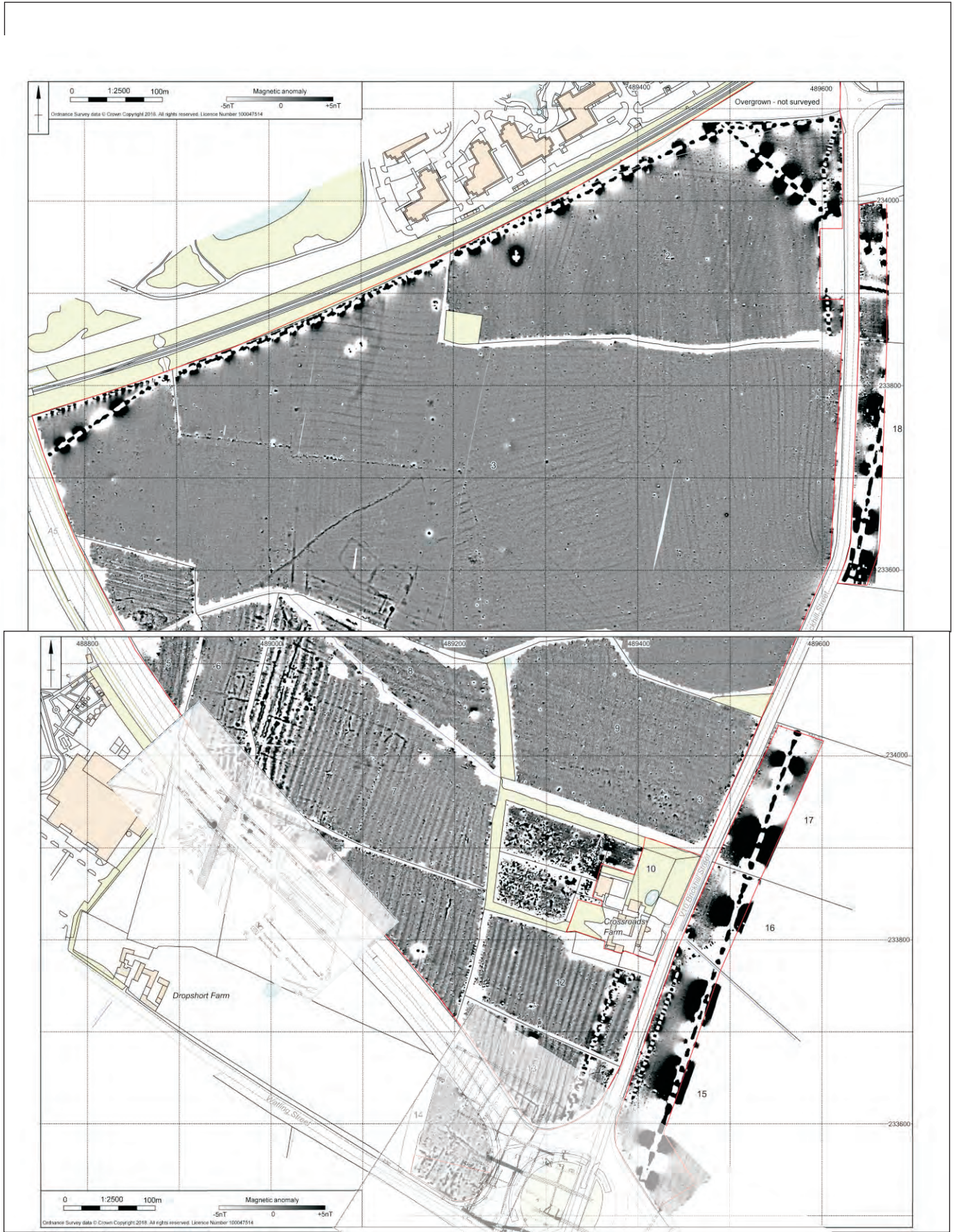


Fig 4 Archaeological evidence- DS Neal excavation of 1987, Geophysics 2018

South Caldecott

Not to scale
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Date printed:
8/2/19

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Fig 5 Excavation Areas
 Roman period archaeology
 (beneath ridge and furrow)

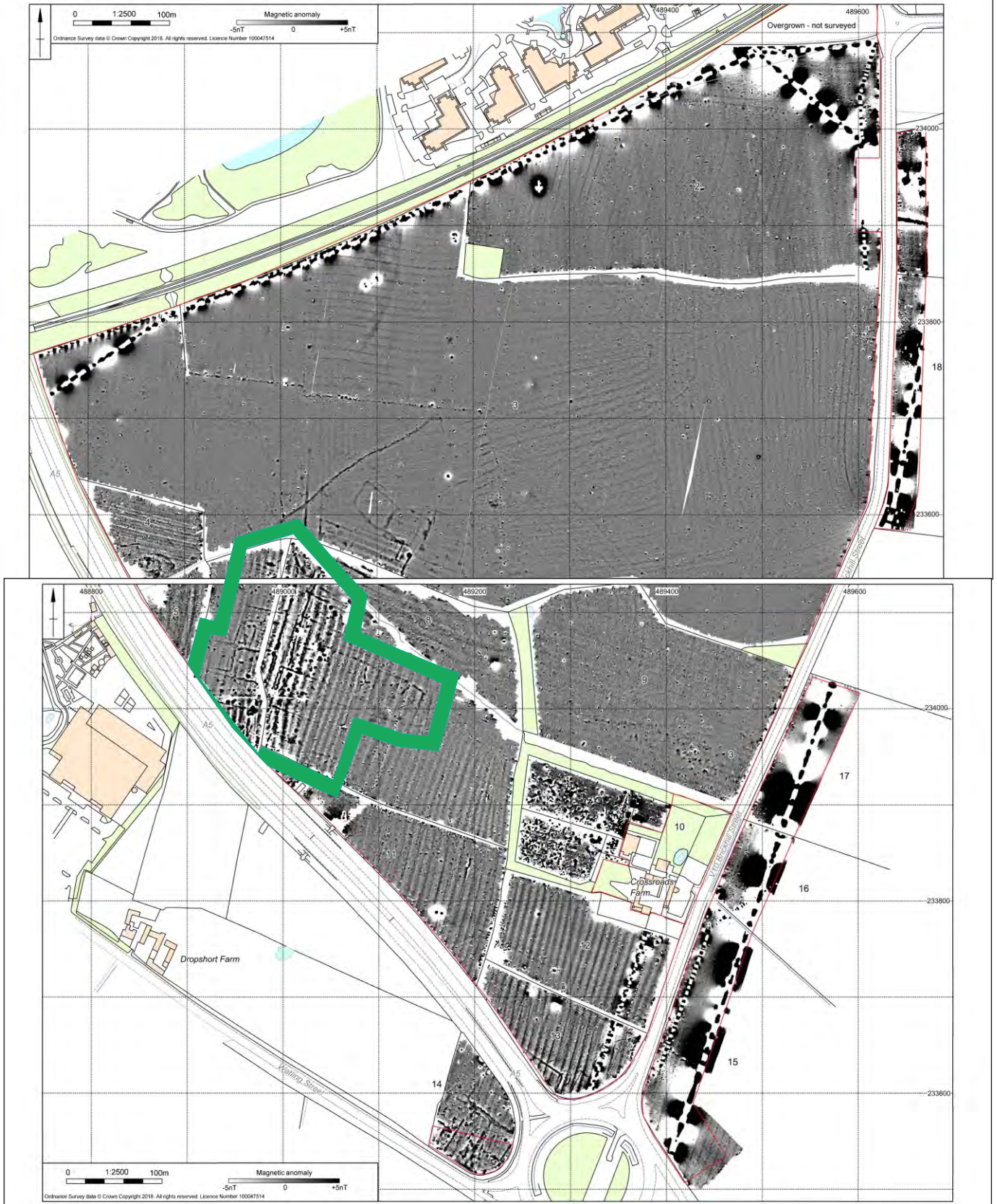
Iron Age & Roman Enclosures

Iron Age enclosure



Cremation Recording
 Trench 52

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Fig 6 Watching Brief Area

Watching Brief Area around Area 2 (c.15m)



South Caldecott

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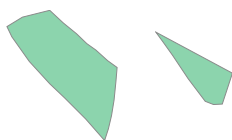
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Fig 7 Areas of proposed recording of ridge and furrow



South Caldecott

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