

A Written Scheme of Investigation for

Land South of Cotton End Village

Prepared for Buildings Ltd.

1. INTRODUCTION.....	4
1.1. PROJECT SUMMARY	4
2. BACKGROUND.....	6
2.1. PLANNING BACKGROUND.....	6
2.2. GEOLOGY.....	7
2.3. PREVIOUS ARCHAEOLOGICAL WORK	7
2.4. HISTORICAL BACKGROUND	9
2.5. ARCHAEOLOGICAL BACKGROUND	9
3. AIMS AND OBJECTIVES	10
3.2. GENERAL AIMS:.....	10
3.3. SPECIFIC AIMS:.....	10
4. COMMUNICATIONS.....	12
4.1. CLIENT AND STAKEHOLDERS.....	12
4.2. TEAM MEMBERS.....	12
4.3. REPORTING AND DISSEMINATION.....	12
4.4. ARCHIVING	13
5. HEALTH AND SAFETY	15
6. PROJECT TEAM STRUCTURE	16
7. METHOD STATEMENT AND SCOPE	17
7.1. TRIAL TRENCHING	17
7.2. RECORDING SYSTEM.....	19
7.3. SURVEY	20
7.4. GEOGRAPHICAL INFORMATION SYSTEM (GIS) AND DATABASE	20
7.5. FINDS	21
7.6. ENVIRONMENTAL SAMPLING.....	22
7.7. SCIENTIFIC DATING.....	23
8. STAGES, PRODUCTS, AND TASKS	24
9. OWNERSHIP.....	27
10. BUDGET.....	28
11. BIBLIOGRAPHY.....	29
12. APPENDICES	31
12.1. RISK LOG.....	31

Figure 1 - Site Location	5
Figure 2 - Proposed Trench Location	18
Table 1 - Summary of Previous Archaeological Investigations.....	7
Table 2 - Summary of Project Team, Roles, and Responsibilities.....	16

1. INTRODUCTION

1.1. PROJECT SUMMARY

- 1.1.1. This Written Scheme of Investigation (WSI) serves as the project design for a scheme of archaeological works being conducted in response to a condition of planning approval ahead of a housing development.
- 1.1.2. A brief for an archaeological evaluation has been supplied by Bedford Borough Council's Archaeology Team. The scope for the works outlined in this document have been tailored to meet the brief. Any further work required for mitigation will require a separate WSI.
- 1.1.3. This document sets out the scope and methodology for the archaeological work being undertaken at land south of Cotton End village (hereafter 'the Site'). The National Grid Reference (NGR) for the centre point of the site is TL 08846 44868.
- 1.1.4. Figure One shows the Site Location.
- 1.1.5. The document has been prepared using the relevant guidance and standards including *Management of Research Projects in the Historic Environment* (Lee 2015) and *Standards and Guidance for Archaeological Field Evaluation* (Chartered Institute for Archaeologists 2014).
- 1.1.6. The Site Code: SCE22 has been issued by [2106349].

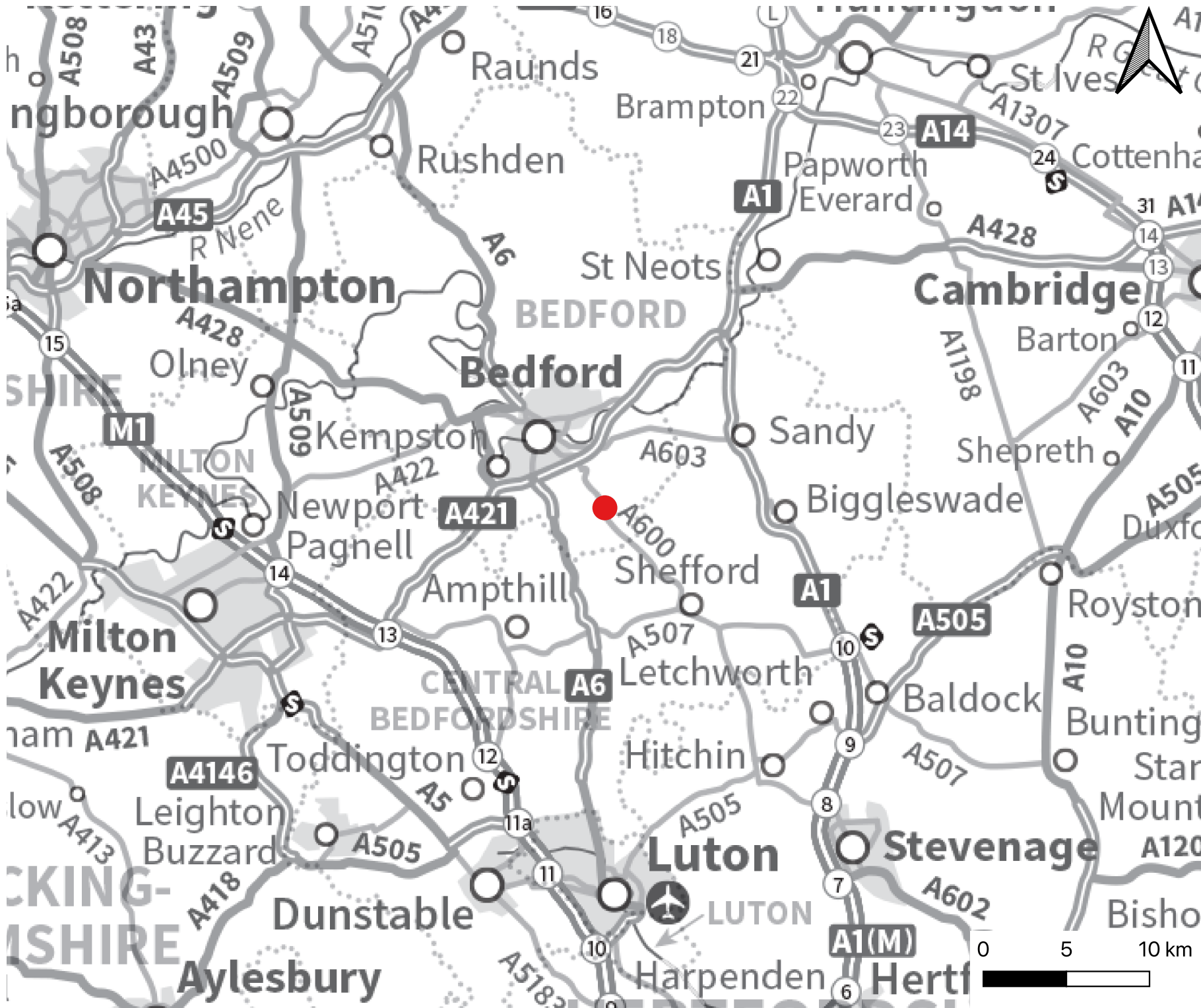


Figure 1 - Site Location

Scale: 1:300,000

● Site Location

2. BACKGROUND

2.1. PLANNING BACKGROUND

- 2.1.1. Planning consent has been granted for the construction of 250 houses on agricultural land located at the south of Cotton End Village. The site area is 13.97ha.
- 2.1.2. In July 2021, a revised edition of the National Planning Policy Framework (NPPF) was published by the Ministry for Housing, Communities and Local Government, wholly replacing the original 2012 version, with further updates in February 2019 and July 2021 (HM Government 2021). This document sets out planning policies regarding the historic environment in section 16 'Conserving and enhancing the historic environment'.
- 2.1.3. The Site sits within the boundary of Bedford Borough Council.
- 2.1.4. The Bedford Borough Local Plan was adopted in January 2020 and sets out the Council's policies and proposals to guide and support the development of the Borough through to 2030 (Bedford Borough Council 2020, 3).
- 2.1.5. Policy 41S 'Historic Environment and Heritage Assets' details the Council's principles regarding development and the historic environment. The section of the policy relevant to this stage of work is outline below.

Where a proposal would affect a heritage asset the applicant will be required to describe:

- a. The significance of the asset including any contribution made by its setting and impacts of the proposal on this significance, and*
- b. The justification for the proposal, how it seeks to preserve or enhance the asset/setting or, where this is not possible, how it seeks to minimise the harm.*

This description must be in the form of one or a combination of: a desk-based assessment; heritage statement; heritage impact assessment; and/or archaeological field evaluation. Further information will be requested where applicants have failed to provide assessment proportionate to the significance of the assets affected and sufficient to inform the decision-making process (Bedford Borough Council 2020, 79)

2.2. GEOLOGY

- 2.2.1. The Site sits on a Stewart Member and Weymouth Member (undifferentiated) mudstone which formed approximately 157-166 million years ago during the Jurassic period.
- 2.2.2. There are no superficial deposits recorded at time of writing (British Geological Society).

2.3. PREVIOUS ARCHAEOLOGICAL WORK

- 2.3.1. No known archaeological work has previously been carried out within the Site boundary.
- 2.3.2. There have been several archaeological investigations within the one-kilometre study area which are summarised in the table below and visible on figure two. Information retrieved from the HER entry unless otherwise stated.

Table 1 - Summary of Previous Archaeological Investigations

Date	Type of Investigation	Summary	HER Ref.
January 1991	Geophysics (Magnetometry and Fluxgate Gradiometer)	Followed route of gas pipeline approximately 750m south-west of the site. Found evidence of Iron Age and Roman settlement and occupation, and a Medieval field system	EBB568
August 2005	Aerial Photography	Covered an extensive area of land to the north-west of Cotton End. Revealed limited evidence of Bronze Age activity; a small Iron Age farmstead with pits and parallel ditches; two Roman rural settlements and field system; a medieval field system associated with a moated manor house and the Deserted Medieval Village of Medbury; a trackway following	EBD316

		the line of a Roman land boundary; late medieval/post-medieval quarrying activity.	
June 2016	Evaluation	Three trenches finding evidence of 19 th -20 th century drainage ditches, boundary ditches, and the foundations of 20 th century glass houses	EBB999
October 2017 (Rookery Farm – Phase 1)	Evaluation	Fourteen trenches with seven showing limited evidence of medieval activity. Activity included a continuation of settlement activity seen in earthworks to the north-west, and rural land management and division	EBB1053
February 2018 (Rookery Farm – Phase 2)	Evaluation	Revealed ridge and furrow and a Late Iron Age/early Romano-British pit	EBB1361
July 2018 (Rookery Farm – Phase 3)	Excavation	Uncovered early medieval settlement and wider peripheral activity. Artefacts recovered suggests that this settlement was founded in the 9 th -11 th centuries with peak occupation between the 12 th and 13 th centuries and went out of use by the 14 th century.	EBB1219
January 2018	Evaluation	Four trenches which uncovered one post-hole and one post-medieval ditch	EBB1040
June 2018	Topographic Survey	Recorded a near complete medieval furlong field with 12 identifiable ridges (Souterrain Archaeological Services Ltd. 2018, para.5.7)	EBB1360

2.4. HISTORICAL BACKGROUND

- 2.4.1. Historically Cotton End was a scattered hamlet with a farm of the same name at the extreme south (Page 1912, para.6)
- 2.4.2. Following the Conquest in 1066 six hides of Harrowden, which included Cotton End, was given to Nigel de Aubigny which had formerly been freely held by 14 sokemen under Edward the Confessor. The manor passed between relatives and in-laws until 1770 when it was sold for £4000 to Samuel Whitbread of Cardington, and it has remained with his family until recently (Page 1912, para.18)

2.5. ARCHAEOLOGICAL BACKGROUND

- 2.5.1. The known archaeological background of the Site begins in the prehistoric with enclosures and trackways potentially dating to the Neolithic.
- 2.5.2. There are several further cropmarks indicative of Bronze Age, Iron Age, and Roman settlement and agricultural activity within the study area, alongside several findspots and earthworks.
- 2.5.3. The Site is located close to two Medieval villages, one bordering the Site to the north, and one to the west, with trackways bordering to the east and west of the Site. Ridge and furrow also surround the site, though none are visible within the Site itself.

3. AIMS AND OBJECTIVES

- 3.1.1. The aims for this project have been informed by the East of England Research Framework (ALGAO 2021), and the known historical and archaeological background of the Site and the immediate surrounding area.
- 3.1.2. The aims listed below are those that the project is highly likely to be able to contribute to with the limited archaeological information available regarding the Site itself.
- 3.1.3. This site could contribute to further aims highlighted in the research framework; however, it would be premature to state further aims that the project could seek to answer without first knowing the archaeology that is present within the Site boundary.

3.2. GENERAL AIMS:

- To determine the presence or absence of archaeological deposits or remains.
- To record the character, date, location, and preservation of any archaeological remains on the site within the areas identified as being impacted upon by the works.
- To establish the potential for survival and the condition of any environmental evidence
- To characterise the full archaeological sequence down to undisturbed geological deposits. Where the full depths cannot be safely or practically excavated their full depths will be established by hand auguring.
- To collect enough information to allow a suitable mitigation strategy to be devised should further archaeological investigations be required.

3.3. SPECIFIC AIMS:

3.3.1. Medieval:

- How can we improve our understanding of agricultural practices?
- How were medieval communication routes established and maintained?
- How can we characterise medieval rural settlement morphology and relationships?
- What was the relationship between rural and urban sites?
- How do we characterise and explain medieval rural settlement change?

3.3.2. Post-Medieval

- What can archaeology add to our understanding of well-documented periods?

- How can we characterise post-Medieval historical landscape and factors which affected it?

4. COMMUNICATIONS

4.1. CLIENT AND STAKEHOLDERS

- 4.1.1. For the duration of the project an email will be sent from the Project Manager to the client, or an appointed representative, updating them on project progression.
- 4.1.2. This email will include an update on the progression of fieldwork, a list of tasks both in-progress and completed, and any issues that could impact or prevent further progression.
- 4.1.3. The email will include reference as to whether the project is within budget, and whether this is likely to change.
- 4.1.4. The planning archaeologist for Bedford Borough Council will be invited to visit the Site weekly until the conclusion of fieldwork. The project manager and project officer will be present to answer any questions.

4.2. TEAM MEMBERS

- 4.2.1. Communication between the Project Officer and the Project Manager during the fieldwork will take the form of an email at the end of every day, informing the Manager of progression and any potential issues.
- 4.2.2. During the post-excavation phase of the project, communication will take place between the Post-Excavation Supervisor and the Post-Excavation Manager, and Project Manager in the form of an email or an online meeting via Google Meet, or in-person should work locations and covid health and safety policies allow. This email or meeting will cover post-excavation progress and any issues raised.

4.3. REPORTING AND DISSEMINATION

- 4.3.1. Upon completion of the fieldwork and initial post-excavation assessment a formal report shall be prepared.
- 4.3.2. The report is expected to be completed within 6 to 8 weeks following the conclusion of fieldwork, though this is dependent on the quantity of artefacts and ecofacts collected during the evaluation.
- 4.3.3. The evaluation will conform to MoRPHE (Lee 2015), the Advice Note for Post-Excavation Assessment (ALGAO 2015), and ClfA's Standard and

guidance for archaeological field evaluation (Chartered Institute for Archaeologists 2014).

4.3.4. The report is expected to include:

- A non-technical summary (abstract)
- Introductory statements and site background
- The aims and objectives of the project
- The methodology
- A discussion and summary of the results of the evaluation, including an assessment as to whether the work has addressed and/or answered the research objectives
- A description of the nature, extent, date, condition, and significance of all archaeological deposits recorded during the works, with specialist opinions and parallels from other sites if required
- Illustrative material including maps, plans, sections, drawings, and photographs, as necessary.
- A catalogue of finds
- Specialist reports, including statement of potential recommendations for further investigation and/or preservation
- An index of the contents and location of the archive
- Sources consulted
- A copy of the OASIS record sheet
- A digital copy of this report will be given to the client and Bedford Borough Historic Environment Record upon completion.
- Spatial data, including feature distribution and phase plans, can be provided if requested. The spatial data will be sent to BBHER in ESRI Shapefile format.

4.4. ARCHIVING

4.4.1. The archive produced during the course of the project will be deposited with Bedford Museum. Upon acceptance of this project design an Archaeological Work Notification will be submitted to Bedford Museum.

4.4.2. Selection and retention of archive material will be in line with specialist recommendations and museum guidelines.

4.4.3. Once the finds analysis has been completed, the landowner will be asked to sign a Deed of Transfer transferring title of the finds to Bedford Museum.

- 4.4.4. The integrity of the site archive will be maintained. All finds and records will properly be curated (subject to Deed of Transfer) by Bedford Museum and will be available for public consultation.
- 4.4.5. Further appropriate guidance is set out in the ClfA Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives.
- 4.4.6. The minimum acceptable standard for the archival report is defined in the Management of Research Projects in the Historic Environment. It will include all materials recovered (or the comprehensive record of such materials) and all written, drawn and photographic records relating directly to the investigations undertaken. It will be quantified, ordered, indexed and internally consistent. It will also contain a site matrix, a site summary and brief written observations on the artefactual and environmental data.
- 4.4.7. Pursuant to these agreements the archive will be presented to Bedford Museum with six months of the completion of the post-excavation work, unless further mitigation is required in which case the archive for this phase of the project will be combined with that of later phases and be deposited six months following the conclusion of these later phases.
- 4.4.8. The project will be registered and regularly updated as part of the OASIS project.
- 4.4.9. Digital material will be archived through the Archaeology Data Service (ADS) and the unique digital object identifier will be sent to the HER.

5. HEALTH AND SAFETY

- 5.1.1. Prior to any work commencing on the Site, a full risk-assessment document will be produced setting out the site-specific health and safety policies that will be enforced in order to reduce to an absolute minimum any risks to health and safety.
- 5.1.2. The risk assessment can be found in appendix one.
- 5.1.3. This document will refer to above and below ground hazards.
- 5.1.4. All work will be carried out to company health and safety policies to standards defined in The Health and Safety at Work etc. Act 1974 (HM Government 1974), and the Management of Health and Safety Regulations 1992 (HM Government 1992).

6. PROJECT TEAM STRUCTURE

Table 2 - Summary of Project Team, Roles, and Responsibilities

Name	Initials	Project Role	Key Responsibilities
Analise Broadman	AB	Project Executive	Overall project responsibility
Charlie Dixon	CD	Project Manager	Archaeological co-direction (on and off-site); liaison with project team, clients, and other stakeholders
Edward Fallow	EF	Project Officer	Archaeological co-direction (on and off-site); reporting; liaison with project team and manager
George Hatton	GH	Post-Excavation Manager	Post-Excavation co-direction (on and off-site); liaison with post-excavation project team, Project Officer, Manager, and Executive; reporting
Indiana Jones	IJ	Post-Excavation Supervisor	Post-Excavation co-direction (on and off-site); liaison with post-excavation project team and Manager
Katherine Lowe	KL	Expert	Ceramic Specialist
Marjorie Newman	MN	Expert	Zooarchaeologist
Olga Palmquist	OP	Expert	Environmental Archaeology Specialist
Quinn Richards	QR	Expert	Metal Specialist
Sophia Tazey	ST	Expert	Osteologist
Uriel Vaillant	UV	Archive Manager	Liaison with the Project Officer, Project Manager, and Post-Excavation Manager to compile the final project archive; liaison with archive team

7. METHOD STATEMENT AND SCOPE

7.1. TRIAL TRENCHING

- 7.1.1. In line with a 4% sampling strategy of the 13.97ha site, as agreed with the Planning Archaeologist, 104 trenches will be excavated on the site – see Figure 2. The trenches will be laid out north to south or east to west in a grid system to achieve the 4% sample.
- 7.1.2. The trenches will be excavated by a suitably sized 360° excavator with a toothless ditching bucket under the supervision of an experienced archaeologist. The topsoil and subsoil will be stripped and stored separately and kept a safe distance from the trench edge. One end of the trench will be battered back for safe access and egress.
- 7.1.3. Regular onsite meetings will be held with the Planning Archaeologist, the Project Manager and the Project Officer, with a final onsite meeting being held once all trial trenches have been completed and results known.
- 7.1.4. The trench location is subject to reasonable change by the Project Officer dependent on conditions on site, to avoid services or previously unknown obstructions. Any required changes will require the approval of the Planning Archaeologist.
- 7.1.5. The trench locations will be accurately surveyed prior to excavation and related to the National Grid.
- 7.1.6. The site and spoil heaps shall be checked by metal detector, to enhance artefact recovery.
- 7.1.7. Following the removal of the top-soil the lower soil horizon will be systematically metal-detected with any and all finds being recorded with GPS in line with research agenda LIA-Rom-19 (ALGAO 2019).
- 7.1.8. Examination and cleaning of all archaeological deposits will be by hand using appropriate hand tools, including features and horizontal deposits. Any archaeological deposits excavated will be recorded both in plan and section. The objective will be to characterise and date features rather than totally remove them.
- 7.1.9. When investigation occurs, feature will be excavated as follows:
 - 50% of each intrusive feature (pits, postholes)
 - Slots of 1m width or less will be placed in linear features

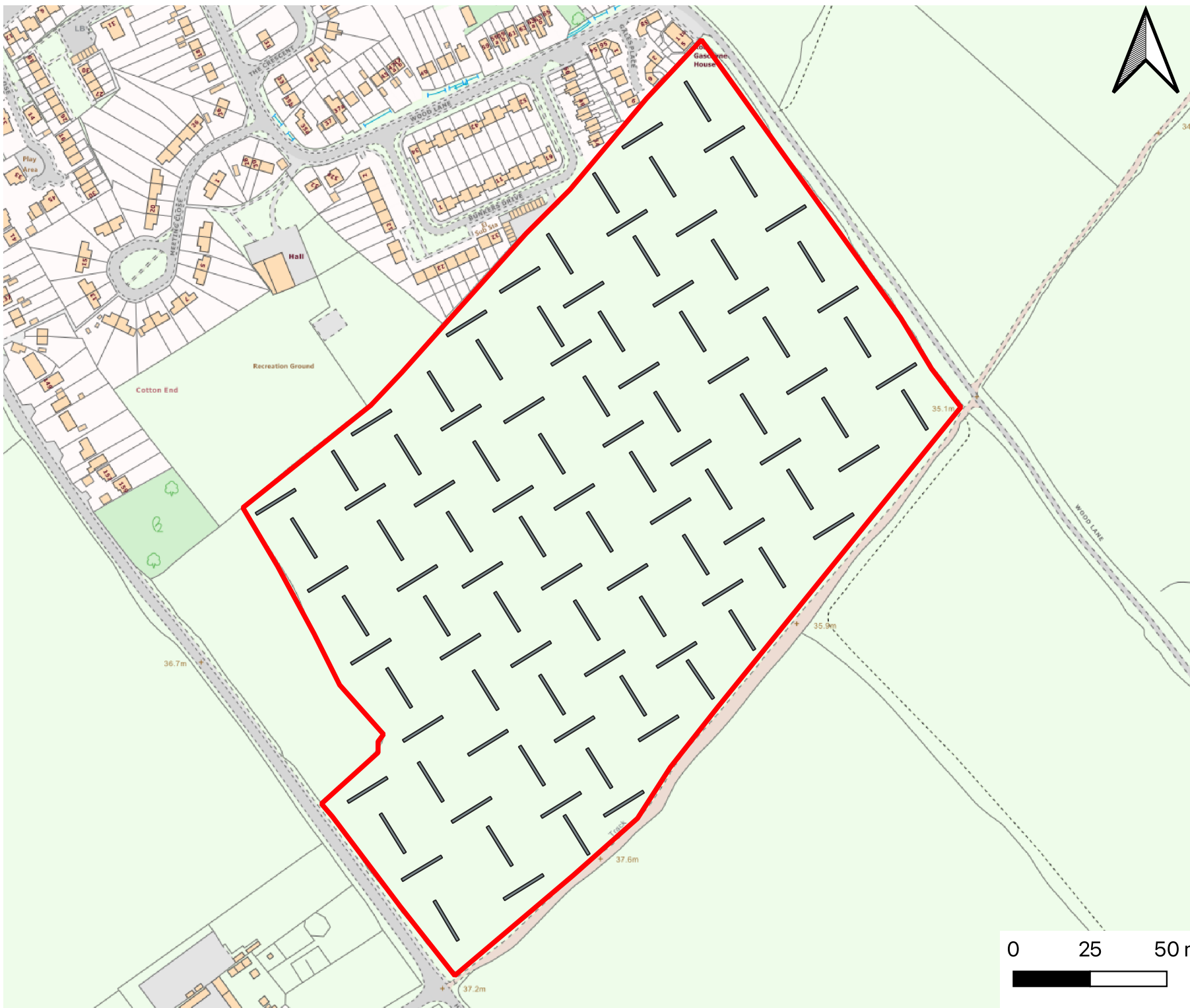


Figure 2 - Proposed Trench Location

Scale: 1:3,250

-  Site Boundary
-  Proposed Trench Location

0 25 50 m

- 7.1.10. Hand excavation and sampling in 1m x 1m test pits of any horizontal archaeological deposits such as buried soils
- 7.1.11. Should a deep feature be encountered, excavations with the 360° excavator will be permitted, subject to agreement with the Planning Archaeologist.
- 7.1.12. Should significant archaeological deposits be encountered that are worthy of preservation in situ, the feature will be defined, and the excavation will cease. The Planning Archaeologist will be consulted to determine excavation strategy.
- 7.1.13. All works will be carried out in accordance with the Code of Conduct as set out by the Chartered Institute for Archaeologists (CIfA 2021)
- 7.1.14. All works will be carried out in full adherence to CIfA's Standard and Guidance for Archaeological Evaluation (Chartered Institute for Archaeologists 2014), and Standards for Field Archaeology in the East of England (Gurney 2003)

7.2.RECORDING SYSTEM

- 7.2.1. The site code will be used to label all sheets, plans and other drawings; all context and recording sheets; all photographs; and all other elements of the documentary archive.
- 7.2.2. The recording system used will follow the site manual which will be available on site. The written archive will consist of recording pro-forma recording sheets that are based on the Museum of London "single context" system and conform to the standards for archive deposition so as to ensure maximum cross archive compatibility.
- 7.2.3. Trench sheets will be used in order to collate all the information about each trench as excavated. Should detailed recording be required, information will be supplemented by context sheets.
- 7.2.4. The extent of any visible archaeological deposits will be recorded in plan by the excavator using a 6H pencil on pro-forma permatrace drawing sheets at a scale of 1:20, or an otherwise appropriate scale.
- 7.2.5. The drawing sheet will be completed in accordance with the site manual. Drawing conventions and line types are set out in detail in the manual. Drawings will also include context number, matrix information and levels

information. Hachures will be used to denote break of slope and gradient of slope in all hand drawn and digitised plans as standard regardless of the complexity of archaeological features.

- 7.2.6. Significant or complex deposits may be drawn at a higher scale such as 1:10 provided the drawing is clearly marked as such.
- 7.2.7. Sections of excavated archaeological deposits will be drawn at an appropriate scale of 1:10 or 1:20.
- 7.2.8. Primary archive photographs will be taken by site staff using a DSLR. Digital images will be saved as raw data files.
- 7.2.9. Both pre-excavation and post-excavation photographs will be taken of each trench alongside those of all features and sections excavated.
- 7.2.10. All site photographs will include a photographic scale of an appropriate size. A board providing site code, context number, north arrow and date will be employed.

7.3. SURVEY

- 7.3.1. The site survey will be undertaken using Global Navigation Satellite System (GNSS) by a competent and suitably trained archaeologist. All measurements surveyed will be within an appropriate accuracy margin using the coordinate reference system EPSGL:27700 (OS National Grid).
- 7.3.2. Trenches will be set out by the company using GIS shapefiles. These will have been assessed prior to the commencement of fieldwork in order to consider any exclusion zones, such as those surrounding power cables.
- 7.3.3. Where archaeological features are identified within trenches, then the visible extent of the entire features within the trench will be recorded alongside the section location and a level in the base of the feature.

7.4. GEOGRAPHICAL INFORMATION SYSTEM (GIS) AND DATABASE

- 7.4.1. A GIS will be set up to maintain and manage the site data. It will be set to use the CRS EPSG:27700 (OS National Grid).
- 7.4.2. Data held within the GIS will include, but not be limited to:
 - Site boundary
 - Trench locations
 - Constraints

- Survey data
- Digitised plans
- Context information, including information of finds and environmental distribution

7.4.3. The drawn archive will be scanned, georeferenced to the National Grid, digitised and maintained within a desktop GIS.

7.5. FINDS

7.5.1. All identified finds, artefacts, industrial and faunal remains will be collected and retained, with the exception of modern material. Certain classes of building material may be discarded after recording if an appropriate sample is retained. No finds will, however, be discarded without the prior approval of the Planning Archaeologist in line with the archive requirements of Bedford Museum.

7.5.2. Excavated material will be examined in order to retrieve information to assist in the analysis of the spatial distribution of artefacts.

7.5.3. The finds assemblage will be retained for deposition with the site archive with Bedford Museum, who will be contacted following the approval of this WSI for the production of an accession number.

7.5.4. Marking of finds will follow the requirements of Bedford Museum, and bulk finds will be bagged in panelled self-sealing bags marked with the Site Code, Accession Number, Context number, sample number and/or find number (if relevant), and the material and object type (if applicable).

7.5.5. All finds which constitute Treasure under the 1996 Treasure Act for England and Wales (HM Government 1996) will be immediately reported to the Finds Liaison Officer and to the coroner within 14 days of discovery. Any treasure will be excavated and moved to a safe storage facility or suitable security will be arranged on site if immediate removal is not possible.

7.5.6. Any human remains encountered will be treated with care and respect. Should any human remains be identified, the exposed portion will be recorded and will be left in situ where it will be protected and covered. If removal is essential, it can only take place under appropriate government regulations. Furthermore, if removal is essential, such removal will be in accordance with

the Updated Guidelines for the Standards for Recording Human Remains (Mitchell and Brickley (Eds) 2017)

7.5.7. Should finds that require immediate conservation be encountered, they will be exposed, lifted, cleaned, conserved, marked, bagged, and boxed in accordance with the guidelines set out in the United Kingdom Institute for Conservation *Conservation Guideline No. 2 (United Kingdom Institute for Conservation 1983)*. Appropriate guidance set out in the Museums and Galleries Commissions Standards in the Museum Care of Archaeological Collections (Boyle and Rawden (Eds) 2020), and the current ClfA finds guidelines (ClfA 2014) will also be followed. Packaging of all organic finds and metalwork will follow the UKIC/Rescue guidelines, First Aid for Finds (Watkinson and Neal 1998). Any necessary treatment of metalwork will be arranged in conjunction with specialist conservators.

7.6. ENVIRONMENTAL SAMPLING

- 7.6.1. Environmental sampling during the evaluation will target a representative range of context from each phase and examine the survival of material and key archaeological contexts.
- 7.6.2. Sample size should follow recommendations by Historic England guidelines on environmental archaeology (Campbell, Moffett and Straker 2011), and the standard applied by the company Environmental Archaeologist, considering any comments from the Historic England Regional Science Advisor and Bedford Borough Planning Archaeologist.
- 7.6.3. Provision will be made the requirement of the following samples:
- Bulk samples of 40 litres or 100% of the context (whichever is smaller) for processing using a floatation tank for the recovery of charred plant remains and artefacts unlikely to be recovered through excavation
 - Samples of 1-5 litres from waterlogged deposits for analysis of waterlogged plant remains. These may be taken as sub-samples from bulk samples
 - Samples of 5-15 litres from waterlogged deposits for analysis of insect remains and other macroscopic artefacts. These may be taken as sub-samples from bulk samples
 - Samples of 2 litres for mollusc analysis with associated continuous column samples

- Monolith samples which may be sub-samples for diatom, spore, or pollen analysis
- Monolith samples for soil micromorphology

7.6.4. The sampling will be overseen by the company Environmental Archaeologist, and Historic England's Regional Science Advisor for the East of England will be consulted as required.

7.7. SCIENTIFIC DATING

7.7.1. Where appropriate, samples will be collected during fieldwork allowing for potential dating at a later stage.

7.7.2. Recommendations for scientific dating will be included at the reporting stage.

7.7.3. Provisions will be made for:

- Dendrochronological analysis from timbers
- C14 dating from organic material, which may be taken as sub-samples from bulk or monolith samples
- Archaeomagnetic dating from hearths or other suitable deposits

8. STAGES, PRODUCTS, AND TASKS

8.1.1. This project will involve four stages which are set out in the table below. The table below also includes reference to the expected product outcomes of each stage.

Table 3 - Summary of Stages, Products, Tasks, and Review Stages

Stage	Description	Product	Task List	Review Point
1	Project start-up and design	1. Project Design 2. Risk Assessment 3. Health and Safety Plan 4. Risk Log	– Meeting with stakeholders and the wider project team to define milestones and delivery timetable	RP1. Meeting between the Project Executive, the client and the Planning Archaeologist to decide on whether or not to proceed with the project in its current format.
2	Fieldwork	5. Field Archive	– Site preparation – Fieldwork	RP2. Meeting between the Project Executive, Project Manager, and relevant Team Leaders to review project progress up to this point and create plan for the next stage

3	Post-Excavation and Specialist Assessment	6. Finds Inventory 7. Specialist Assessment Reports 8. Finds Archive 9. Evaluation Report	- Finds Processing - Specialist finds assessment - Palaeoenvironmental assessment	RP3. Meeting between the Project Executive, Project Manager and the relevant Team Leaders to review project progress up to this point.
4	Closure or Continuation	10. End of Project Review		RP4. Meeting between the Project Executive, the client and the Planning Archaeologist to decide if the project should be closed or if there should be another phase of fieldwork or post-excavation analysis.

9. OWNERSHIP

9.1.1. L – P: Archaeology shall retain full copyright of any report under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it hereby provides an exclusive licence to the client in all matters directly relating to the project as described in this document. Any document produced to meet planning requirements can be copied for planning purposes by the Local Planning Authority. Any information deposited in the HER can be freely copied without reference to the originator for research or planning purposes.

11. BIBLIOGRAPHY

- ALGEO. (2015). *Advice Note for Post-Excavation Assessment*. Association of Local Government Archaeological Officers. [Online]. Available at: https://www.algao.org.uk/news/advice-note-pxa-assessment_05-08-2017 [Accessed 27 December 2021].
- ALGEO. (2019). *Question: LIA-Rom-19 - How can we make greater use of metal-detecting during the excavation of roman sites*. [Online]. Available at: <https://researchframeworks.org/eoe/resf-display/research-framework-display/> [Accessed 20 April 2022].
- ALGEO. (2021). *East of England Regional Research Framework*. [Online]. Available at: <https://researchframeworks.org/eoe/> [Accessed 1 April 2022].
- Bedford Borough Council. (2020). *Local Plan 2030: Planning for the Future*. Bedford Borough Council. [Online]. Available at: <https://bbcdevwebfiles.blob.core.windows.net/webfiles/Planning%20and%20Building/local-plan-2030/Local%20plan%202030.pdf> [Accessed 1 April 2022].
- Boyle, G. and Rawden, A. (Eds). (2020). *Standards and Guidance in the Care of Archaeological Collections*. Society for Museum Archaeology.
- British Geological Society. *Geology of Britain viewer | British Geological Survey (BGS)*. [Online]. Available at: <https://mapapps.bgs.ac.uk/geologyofbritain/home.html> [Accessed 1 April 2022].
- Campbell, G., Moffett, L. and Straker, V. (2011). *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-Excavation*. Second. Portsmouth : English Heritage. [Online]. Available at: https://historicengland.org.uk/images-books/publications/environmental-archaeology-2nd/environmental_archaeology/ [Accessed 13 May 2022].
- Chartered Institute for Archaeologists. (2014). *Standard and Guidance for Archaeological Field Evaluation*. Chartered Institute for Archaeologists. [Online]. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GFieldevaluation_3.pdf [Accessed 1 April 2022].
- CIfA. (2014). *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*. Chartered Institute for Archaeologists. [Online]. Available at: <https://www.archaeologists.net/codes/cifa>.
- CIfA. (2021). *Code of Conduct: professional ethics in archaeology*. Chartered Institute for Archaeologists. [Online]. Available at: <https://www.archaeologists.net/codes/cifa> [Accessed 20 December 2021].
- Gurney, D. (2003). *Standards for field archaeology in the east of England*, East Anglian Archaeology occasional paper 14. Gressenhall : ALGEO. [Online]. Available at: https://eaareports.org.uk/publication/occ_pap14/.
- HM Government. (1974). *Health and Safety at Work etc. Act 1974*. [Online]. Available at: <https://www.legislation.gov.uk/ukpga/1974/37/introduction/2020-12-31> [Accessed 4 May 2022].

HM Government. (1992). *The Management of Health and Safety at Work Regulations 1992*. p.12. [Online]. Available at: <https://www.legislation.gov.uk/ukxi/1992/2051/contents/made> [Accessed 4 May 2022].

HM Government. (1996). *Treasure Act 1996*. p.12. [Online]. Available at: <https://www.legislation.gov.uk/ukpga/1996/24/data.pdf> [Accessed 13 May 2022].

HM Government. (2021). *National Planning Policy Framework*. Ministry of Housing, Communities & Local Government. [Online]. Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> [Accessed 16 February 2022].

Lee, E. (2015). *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide*. Historic England. [Online]. Available at: <https://historicengland.org.uk/images-books/publications/morphe-project-managers-guide/> [Accessed 9 February 2022].

Mitchell, P. D. and Brickley, M. (Eds). (2017). *Updated guidelines to the standards for recording human remains*. Chartered Institute for Archaeologists.

Page, W. (1912). Parishes: Cardington with Eastcotts. In: *A History of the County of Bedford*. Victoria County History. 3. London : Victoria County History. pp.233–238. [Online]. Available at: <https://www.british-history.ac.uk/vch/beds/vol3/pp233-238> [Accessed 8 April 2022].

Souterrain Archaeological Services Ltd. (2018). *Archaeological Topographical Survey: Land South of Rookery Farm, High Road, Cotton End, Bedfordshire*. Bedford : Souterrain Archaeological Services Ltd., p.41. [Online]. Available at: https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-1974-1/dissemination/pdf/souterra1-321575_1.pdf [Accessed 20 April 2022].

United Kingdom Institute for Conservation. (1983). *Conservation Guidelines No. 2: Packaging and Storage of Freshly Excavated Artefacts from Archaeological Sites*. United Kingdom Institute for Conservation.

Watkinson, D. and Neal, V. (1998). *First aid for finds*. 3rd ed. Hertford : London : RESCUE--The British Archaeological Trust ; Archaeology Section of the United Kingdom Institute for Conservation with the Museum of London.

12. APPENDICES

12.1. RISK LOG

Site Name :	Land South of Cotton End Village	Site Code	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

RISK ASSESSMENT – ARCHAEOLOGICAL EVALUATION

This risk assessment has been produced to assess the potential risks associated with the works to be carried out at Land South of Cotton End Village during the archaeological evaluation. The site is located directly south of Cotton End village in Bedford Borough.

The project is to commence in June 2022 and last approximately six weeks. A team of five will be present on the site.

The work will entail the machine excavation of overburden and the hand excavation of buried deposits.

All site operatives will be shown this document at the commencement of their work on site and given a full induction. On completion of the induction they must sign the relevant induction form.

Enforcement of our health and safety policy will be very strict. Any site operatives not obeying or enforcing this assessment and the general policy will be advised in writing that this is an offence that may lead to dismissal. On the second occasion the operative will be dismissed. This includes not wearing Personal Protective Equipment (PPE), not using the PPE in the correct manner, not reporting dangers and wantonly ignoring relevant health and safety constraints.

L – P : Archaeology recognises its responsibility to protect the health and safety of its employees and subcontractors. Employees and subcontractors are expected to recognise their obligations to assist in ensuring that working practices are effective and are obeyed.

L – P : Archaeology also operates in accordance with the Health and Safety procedures as set out in The Health and Safety Manual of the Federation of Archaeological Managers & Employers (FAME 2008).

The Project Manager will undertake overall responsibility for all Health and Safety procedures on site.

L – P : Archaeology's representative will be Blair Poole, who can be reached on 01244 313100.

Site Name :	Land South of Cotton End Village	Site Code	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

RISK ASSESSMENT TABLE:

Item	Hazard	Who could be harmed	How might they be harmed	Initial risk rating	Control measures	Controlled risk rating
1	Working with plant and machinery	Site staff	Severe impact and crushing injuries, trauma	High	Banksmen, training, site induction, alertness	Medium
2	Manual handling	Site staff	Musculoskeletal injury, impact or crush injury	High	If loads exceed 20kg, then mechanical handling or team handling. Training, supervision	Medium
3	Buried services	Site staff	Electrocution, explosion, fire	High	Research site information, CAT scan, hand excavation	Low
4	Contaminated ground	Site staff	Ingestion of toxins, dermatitis, chemical burns	Medium	Research site information, PPE, washing facilities, First aid facilities	Low
5	Collapse of excavation	Site staff	Crushing injuries, lacerations, impact injuries, trauma, asphyxiation	Medium	Adequate shoring, regular inspections, competent staff. Heavy loads/	Low

Site Name :	Land South of Cotton End Village	Site Code	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

6	Destabilising or undermining of adjacent structures or objects	Site staff	Crushing injuries, lacerations, trauma	High	Design checks by structural engineer, competent supervision	Medium
7	Falling into open excavations	Site staff	Bruises, lacerations	Medium	Barriers, signage, training, information	Low
8	Slips and trips	Site staff	Cuts and bruises	Medium	PPE, site housekeeping, signage	Low
9	Adverse weather	Site staff	Lightning strike, hypothermia, sun burn	Medium	Training, shelter, PPE, sun cream	Low
10	Tetanus	Site staff	Tetanus bacterial infection	High	Vigilance of site operatives, immunisation, PPE, training	Low
11	Pigeon faeces	Site staff	Psittacosis, bacterial and viral infection	High	Vigilance, training, PPE, site housekeeping	Low
12	Poorly maintained tools	Site staff	Cuts, grazes, abrasions, tetanus, bone breaks	High	Training, tool inspection, replacement schedule, correct use and storage	Low
13	Hypodermics, glass/	Site staff	Cuts, abrasions, infection	High	Vigilance, training,	Medium

Site Name :	Land South of Cotton End Village	Site Code	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

	sharps				PPE	
14	Kneeling for long periods	Site staff	Poor circulation, DVT, knee and cartilage damage, bursitis	High	Training, regular breaks, job rotation, knee pads	Low
15	Repetitive strain (trowel use)	Site staff	Numbness, pain, stiffness, tingling, weakness, cramp	High	Training, PPE, job rotation	Low
16	Falls from height	Site staff	Cuts, abrasions, laceration, broken bones, head injury, death	High	Barriers, scaffolding with edge protection	Medium
17	Dust inhalation	Site staff	Lung conditions, cough, sore throat	High	Training, information, PPE dampening down	Low
18	Leptospirosis	Site staff	High temperature, chills, sudden headaches, nausea and vomiting.	High	PPE, site housekeeping, training	Low
19	Danger from traffic	Site staff	Cuts, bruises, lacerations, death	High	Traffic monitoring, pedestrian walkways, site induction, training, vigilance	Medium
20	Lone working	Site staff	Accidents, violence, injury, death	High	Vigilance, training. Communication	Low
21	Danger from animals	Site staff	Injury from animals	Medium	Vigilance, training,	Low

Site Name :	Land South of Cotton End Village	Site Code	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

					safe access/egress	
22	Unsafe structures	Site staff	Cuts, bruises, abrasions, breaks	Medium	Vigilance, training	Low

Site Name :	Land South of Cotton End Village	Site Code	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

The risks above have been assessed based on a comparative risk matrix. This examines risks prior to and following the implementation of control measures where the black **X** represents risk prior to the implementation of control measures and the blue **X** representing afterwards. Green areas represent low risk, orange areas represent medium risk, red areas are high risk. The risk matrix format can be seen below:

5						Severity
4				X		
3						
2		X				
1						
	1	2	3	4	5	
Likelihood						

SITE SPECIFIC HAZARDS (these are site specific hazards that are identified during ongoing works)

Item	Hazard	Who could be harmed	How might they be harmed	Initial risk rating	Control measures	Controlled risk rating
i						
ii						
iii						
iv						

* This risk assessment is a live document and will be updated should any on site hazard be identified during works.

Site Name :	Land South of Cotton End Village	Site Code :	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

ACTION AREAS:

Item	Person undertaking action point	Specific action
1	Project Officer Supervisor	Competent person to control all plant movements. Reinforce training with toolbox talks for all site personnel.
2	Project Officer Supervisor	Where the equipment to be handled exceeds 20kg then mechanical handling or team handling will be utilised. All employees will receive manual-handling training. Employees will not be allowed to lift potentially heavy or awkward loads.
3	Project Officer Supervisor	Consult all client information and utilities information and ensure that competent persons are employed to carry out excavation works etc. Ensure suitable and sufficient training. Ensure that a competent person has undertaken a CAT scan then clearly marks and records anything that is located. Carefully hand-dig to expose services if present.
4	Project Officer Supervisor	Check status of land to see if it is registered as contaminated land. Undertake all necessary soils investigations and prepare COSHH assessments as required. Ensure that the information is conveyed to workers. Provide appropriate washing facilities, first aid and PPE.
5	Supervisor	Ensure that shoring is installed, and that correct materials are used. Have shoring inspected at the beginning of every work shift, and record. All personnel involved, including plant operators, are to be fully briefed. Create a safety exclusion zone for plant and heavy materials stockpiles to prevent surcharge of excavations. Review the shoring etc. following any period of poor weather for example heavy rain or changes in soil type which may destabilize the excavation. Always consider the weight bearing around the perimeter of the trench.
6	Project Officer	Consult a structural engineer about any proposed excavations close to existing structures. Consult all available information. For existing structures or objects that appear to be frail create a buffer zone about them to reduce the effects of vibrations from plant movements. A competent person to undertake weekly inspections of excavations and record the information.
7	Supervisor	Ensure suitable and sufficient barrier protection of excavations. Erect warning signage. Employ

Site Name :	Land South of Cotton End Village	Site Code :	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

		trained operatives and give a comprehensive induction. Exclude public from works.
8	Supervisor	Ensure good site housekeeping, toolbox talks, site inspections and signs in uneven or wet area.
9	Project Officer Supervisor	Have a written policy with regard to working in poor weather conditions and ensure that it is understood by employees at induction. Monitor weather conditions on site and be prepared to suspend / alter work activity when conditions deteriorate to a point of being potentially hazardous. Ensure that full, appropriate PPE is worn where outside-working continues. Ensure sufficient breaks are taken in very cold weather for employees to have hot drinks. Monitor workforce for individuals displaying signs of hypothermia
10	Project Officer Site Staff	Tetanus bacteria can be found in soil etc. Ensure all employees have an up-to-date immunisation for tetanus and ensure that the date of immunization and booster date are recorded. Ensure all equipment is in good condition and maintain inspection records. Ensure employees are trained and toolbox talks provided. Where necessary provide correct PPE in order to ensure the safety of the employee at all times, e.g. gloves when excavating sharp rusty weaponry. Ensure that an adequate supply of first aid equipment is available. Record all accidents and near misses. Ensure that vigilance for sharp metals etc. is maintained at all times. Should a break in the skin occur, first aid must be sought immediately. Ensure management are aware of your up- to-date Tetanus status.
11	Project Officer Site Staff	Ensure staff do not work in heavily contaminated areas, ensure that these have been cleaned and decontaminated by suitably qualified personnel. Under no circumstances must dried faeces be disturbed to create a breathable aerosol, areas must be dampened down to reduce airborne dust being created. Provide employees with necessary PPE in order to work in areas with known pigeon faeces contamination. Do not disturb dried faeces.
12	Project Officer Supervisor Site Staff	Ensure that all tools are in good working order and free from breakage or rust. Ensure that all equipment is checked and the results recorded. Remove any substandard, damaged or rust equipment out of use, ensuring that it is stored separately until maintenance, fixing or disposal. Ensure that all tools are fit for purpose and used in the manner for which they were made. Ensure

Site Name :	Land South of Cotton End Village	Site Code :	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

		all employees have been trained to use all tools and training records maintained. Do not use damaged or unfit tools. Do not use if you have not been trained to use the tool. Report all accidents and near misses and any defects etc. with the tools.
13	Project Officer Site Staff	Ensure the area is checked for sharps before work commences, the results of daily site inspections must be recorded. Ensure all employees are trained in the event of contact with any sharps, especially where there is potential of blood contamination. Ensure employees are up-to-date with required immunizations. Regularly remind employees to be vigilant for hypodermics, glass and other sharps. Provide any necessary PPE. Ensure that vigilance is maintained at all times, especially when excavating. Ensure all immunizations are up-to-date, always wear the PPE you are issued and report any incidences to the supervisors or managers. Report all injuries and seek first aid attention.
14	Project Officer	Ensure the staff have received the correct training and that it is documented. Ensure you are aware of any existing medical issues with employees which may be worsened if kneeling for long periods of time. Ensure that regular breaks are taken if employees are kneeling for long periods of time and rotate jobs to reduce the time spent working in a kneeling position. Provide kneeboards where possible.
15	Project Officer Site Staff	Identify activities that have repetitiveness. Ensure regular breaks and job rotation, where possible. Provide training through toolbox talks. Ensure staff make supervisors aware of any medical issue that may be worsened by the activity. Report any signs of numbness, tingling or pain whilst undertaking the works.
16	Project Officer Site Staff	Ensure that employees only use approved access points and that floors are examined, visually, by a competent person prior to entering any room. Staff training through toolbox talks. Do not hang or climb over structures or scaffolding.
17	Project Officer	Dampening of dry soils or cutting tools to keep dust down. Use of dust masks where required. Training of staff through toolbox talks.
18	Project Officer Supervisor	Ensure area is inspected prior to works commencing. Keep site clean. Staff training through toolbox talks.

Site Name :	Land South of Cotton End Village	Site Code :	SCE22
Work Activity :	Archaeological Evaluation	Date :	26 Apr 22

19	Project Officer Site Staff	Establish access routes to site and pedestrian walkways. Do not loiter at site entrance and use vigilance. Site induction and training.
20	Project Officer Site Staff	Ensure the location of staff is known at all times. Good communications linked. Supply of mobile phone if none present. Regular contact points and times established. Training and vigilance.
21	Project Officer Site Staff	Avoid, where possible, livestock. Erect adequate fencing. Staff training.
22	Project Officer Site Staff	Assess stability of structures at regular intervals. Do not enter a structure if you suspect it is unsafe. Always wear correct PPE. Ensure good communication amongst L – P site staff and contractors on site.

Item numbers reflect hazards identified by L – P : Archaeology on associated Risk Assessments.