



Minerva Archaeology Ltd

Historic Environment Services

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WRITTEN SCHEME OF INVESTIGATION



**LAND ADJACENT TO 9,
NORTH END,
Kellshall, Hertfordshire**

**Stage 2: MITIGATION
Archaeological Monitoring and
Recording**

**Ref: MA 533
Planning ref: 20/02292/OP**

VERSION 1.0

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Historic Environment Services

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LAND ADJACENT TO 9, NORTH END Kelshall, Hertfordshire

Project ref: MA 533
Planning ref: 20/02292/OP
HER enquiry ref: 006.25
Museum ref: KEL/9NE '25
OASIS ref: minervaa2-532481

Stage 2: MITIGATION Written Scheme of Investigation for Archaeological Monitoring and Recording

Prepared at the request of Mr M Williams

by

Florian Weber BA MA ACIfA

April 2025

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Introduction

1.1 This Written Scheme of Investigation (WSI) has been prepared at the request of Mr M Williams, to cover a programme of archaeological work to be carried out as a process of investigation and mitigation as a condition of planning consent for the development of Land adjacent to 9, North End, Kelshall, Hertfordshire, SG8 9SD.

1.2 The present site forms a rectangular plot immediately to the west of North End, centred at NGR TL 3276 3698. The site, which is an undeveloped garden plot, is bounded to the north by no. 9 North End, to the south and west by arable fields and to the east by North End (Figure 1).

1.3 The present development outlines an application for a single dwelling with new vehicular access onto North End (appearance, landscaping and layout reserved)(as amended by plans received on 31 March 2021).

Planning

1.4 Planning permission for the development (ref. 20/02292/OP) has been granted by North Hertfordshire District Council (NHDC) subject to historic environment conditions in line with Chapter 16 of the *National Planning Policy Framework* (NPPF 2024). Conditions 3-5 of the planning consent states:

3.) No demolition/development shall take place/commence until an Archaeological Written Scheme of Investigation has been submitted to and approved by the local planning authority in writing. The scheme shall include an assessment of archaeological significance and research questions; and:

- 1. The programme and methodology of site investigation and recording**
- 2. The programme and methodology of site investigation and recording as suggested by the archaeological evaluation**
- 3. The programme for post investigation assessment**
- 4. Provision to be made for analysis of the site investigation and recording**
- 5. Provision to be made for publication and dissemination of the analysis and records of the site investigation**
- 6. Provision to be made for archive deposition of the analysis and records of the site investigation**
- 7. Nomination of a competent person or persons/organisation to undertake the works set out within the Archaeological Written Scheme of Investigation.**

Reason: To safeguard the archaeological record

4.)The demolition/development shall take place/commence in accordance with the programme of archaeological works set out in the Written Scheme of Investigation approved under condition (3)

Reason: To safeguard the archaeological record

5.)The development shall not be occupied/used until the site investigation and post investigation assessment has been completed in accordance with the programme set out in the Written Scheme of Investigation approved under condition (3) and the provision made for analysis and publication where appropriate.

Reason: To safeguard the archaeological record.

1.5 The planning condition initially required an archaeological evaluation of the proposed site. The consisted of three trenches across the site to provide information of any potential archaeological remains that may be affected by the development. The evaluation was carried out by Allen Archaeology in June 2024 (Minton 2024).

1.6 Trench 1 contained two features, trench [103] which yielded a single sherd of post-medieval pottery, a fragment of a horseshoe and an iron nail. Posthole [105] was devoid of finds.

1.7 Trench 2 revealed two features. The terminus of ditch [203] contained nine sherds of early Iron Age pottery, sheep bone, and an iron nail. Ditch [205] produced 154 sherds of early Iron Age pottery, two worked flints, an iron nail, and 26 pieces of animal bone.

1.8 Trench 3 contained a single archaeological feature, ditch [303], which was the continuation of ditch [205]. A total of eight pieces of animal bone were recovered from it.

1.9 Following the completion of an archaeological evaluation of the proposed development, the Historic Environment Team (HET) of Hertfordshire County Council have requested another stage of work. This stage of work requires the archaeological monitoring and recording of the groundworks associated with the development is required.

Proposed Scheme

1.10 It is considered that archaeological monitoring and recording is the best approach to ensure the protection of, and proper provision for, any archaeological remains that may be affected by the development.

1.11 All groundworks associated with the construction of the proposed single dwelling will be monitored. This includes footings, service trenches, landscaping and any other ground reduction (Figure 1).

1.12 The present scheme will form an incremental process that may involve more stages of field investigation, together with analysis and report preparation, leading to the publication of the findings and the deposition of the project archive with an approved repository. The present document represents the archaeological Written Scheme of Investigation (WSI) required by local planning authority and includes a research design, an outline of the investigative process that is to be followed, and a method statement for the first stage of investigation. Further method statements may be prepared for subsequent stages of work.

Monitoring

1.13 The Historic Environment Team (HET) of Hertfordshire County Council, as the lead curatorial authority for the area, will be kept informed of the progress of fieldwork to enable the timetabling of monitoring visits at appropriate intervals.

Research Design

Study Area

2.1 In order to establish the archaeological and historical context for the site, the overview set out below has been drawn under licence from the Hertfordshire *Historic Environment Record* (HER), Minerva Archaeology's own records and other sources. The study area extends to a 500m radius around the centre of the site.

Topography

2.2 The present site is located on the western side of North End, on the northern side of Kelshall village. The site lies in a wider area located at the north-eastern end of a ridge of higher ground forming part of the Chiltern Ridge, between Ermine Street to the east and Icknield Way to the north-west.

2.3 It lies on relatively level ground, at approximately 163m AOD. The land slopes steeply downwards to the north and west, towards Royston, and more gently downwards to the south and east, towards Hay Green and Reed End.

Geology

2.4 Locally the soils belong to the Hanslope Association (411d) and are described as '*Slowly permeable calcareous clayey soils. Some slowly permeable non-calcareous clayey soils. Slight risk of water erosion*' (SSEW, 1983).

2.5 The present site sits within bedrock geology recorded as Lewes Nodular Chalk Formation and Seaford Chalk Formation – Chalk. A sedimentary bedrock formed between 93.9 and 83.6 million years ago during the Cretaceous period (BGS, 2023).

2.6 Superficial deposits within the area are recorded as Lowestoft Formation – Diamicton. Sedimentary superficial deposit formed between 480 and 423 thousand years ago during the Quaternary period (ibid.).

Previous Stages of archaeological work

2.7 In June 2024, Allen Archaeology carried out an archaeological evaluation comprising 3 10m x 1.8m trenches. A total of five archaeological features were identified, comprising a posthole and four linear features. The posthole and one ditch were undated, one ditch contained post-medieval and modern finds, and the two remaining ditches early Iron Age pottery and a smaller number of likely contemporary objects (Minton 2024).

Archaeological Areas (Alert, Areas of significance etc)

2.8 The site lies on the north eastern edge of Archaeological Area 49, as designated in the North Hertfordshire District Local Plan (AA49). This area encompasses the historic core of Kelshall and to the east Therfield Tops.

Conservation Areas

2.9 The site lies outside of the conservation area. In the wider area lies the Therfield Conservation Area, which encompasses the historic core of Therfield.

Scheduled Monuments

2.10 There are no scheduled monuments within the 500m study area.

2.11 The nearest scheduled monument is the Motte and Bailey Castle in Therfield, 100m south of Tuthill Farm and approximately 550 to the East of the site (NHLE 1009245).

Listed Buildings

2.12 Two buildings, Foxhall and Foxhall Cottage are located within the 500m study area, of which both are Grade II. Both buildings are dated to the late medieval period.

2.13 Foxhall (NHLE 1102655) is an early to mid-17th-century, two-storey timber-framed building with red brick stacks. It was refronted and extended in the mid-19th century. Foxhall Cottage (NHLE 1102656) has 16th-century origins and was likely originally two separate dwellings. It was floored and heated in the 17th century, extended in the 18th century, and altered in the 20th century. The cottage is timber-framed, with some flint additions and a steeply pitched thatched roof.

2.14 The nearest Grade II* listed building is the early 15th century Church of St Faith (NHLE 1102650), approximately 800m to the south of the site. The church consists of a chancel, a nave, north and south aisles, a south porch and the west tower. The walls are of flint with stone dressings. The whole of the church belongs to the 15th century, but was thoroughly repaired, all but the tower. In 1870, most of the external stonework was replaced and the church re-roofed. The tower was restored in 1911 and a lych-gate was added in the previous year.

Ancient Woodland

2.15 No Ancient Woodlands lie within the 500m study area (Magic 2025).

Historic Parks and Gardens

2.16 No Registered Parks and Gardens lie within the site or within the 500m study area and none are within a 1km radius of the site (MAGIC, 2025).

Registered Battlefields

2.17 No Registered Battlefields are located within or in the immediate vicinity of the study area (MAGIC, 2025).

Significant Heritage Assets and Historic Narrative

- The earliest evidence for human activity within the 500m study area is a cropmark of a possible Bronze Age round barrow (HHER 321), 300m to the northeast of the site and two more 500m to the north (HHER 1241, HHER 1242). Another group of six ring ditches is located 800m to the north (HHER 6387). A Neolithic flint axe was found near St. Faith's Church (HHER 321), 800m south of the site.
- Only 350m to the southwest of the site was a richly furnished cremation burial discovered, which was associated with a large collection of grave goods, including numerous glass and copper alloy vessels, a pair of hobnail shoes and several

coins (HHER 30841). The burial was located within an extensive area of cropmarks, possibly the remains of a roman settlement (HHER 6218, HHER 16981). In the same location, a roman well was recorded (HHER 18740).

- At the time of the Norman Conquest, Kelshall was part of the Manor of Orwell Bury and had only eight households. The manor (HHER 15817) was thought to be located south of Manor Farm in the now-shrunken village of Orwell Bury. In contrast, the nearby village of Therfield, owned by Ramsey Abbey, was a much larger settlement with 52 households.
- There is no evidence of medieval activity within the immediate vicinity of the site, but it is well represented beyond the 500m radius. A motte-and-bailey castle (HHER 67) is situated just under 600m east of the site. It has been interpreted as a 12th-century adulterine castle, but earlier Saxo-Norman pottery was found beneath the mound, suggesting earlier activity.
- Approximately 550m northeast is Tuthill Manor, a 15th-century Grade II listed building (NHLE 1307698). According to its official listing, it was originally a two-storey beacon tower, but Clay (2024) argues that this is unlikely, as a beacon tower was built nearby in 1588 to warn of the arrival of the Spanish Armada (HHER 16155).

Aims and Objectives

2.18 The aims of the present investigation shall be:

- to establish the location, depth, extent, date, character and condition of any remains that are liable to be threatened by the development;
- to consider the local and regional archaeological and historical context of such remains, and their significance and quality, in relation to current published regional research; and,
- to provide sufficient record of any potential archaeological remains that may be revealed during the groundworks for the development of the site, and ensure that an appropriate strategy for mitigation either by *preservation by record* or *preservation in situ*, can be adopted.

2.19 Considering the HET advice and the background of the site and study area, it is possible that this investigation has the potential to contribute to an understanding of the origins and development of Kelshall from the prehistoric period onwards, in particular:

- Activity along the route of the Icknield Way from the Prehistoric period onwards;
- Rural settlement and agricultural practices in the late Iron Age and Roman periods in the hinterland around Baldock and Royston; and,
- Mortuary practices in the Roman period in the hinterland around Baldock and Royston.

2.20 The East of England Regional Research Framework highlight several areas of further study that may be considered as specific objectives for the present investigation:

- LBA-MIA 04: How can we increase our understanding of the Early to Middle Iron Age transition?
- LBA-MIA 10: How can we better understand the relationships between contemporary sites?
- LBA-MIA 12: How do we increase our understanding of hillforts, ringworks and other aggrandised enclosures?
- LIA-Rom 05: How can we better understand the Late Iron Age to Roman transition?
- LIA-Rom 13: How can we increase our understanding of Late Iron Age and Roman farmsteads?

Company Structure

Introduction

3.1 Minerva Archaeology is an independent practice specialising in archaeology and the historic environment. The company undertakes a wide variety of commercial archaeological projects for clients involved in housing and industrial development, pipeline and road construction, agriculture and landscaping.

Project Management

3.2 The Project will be administered and co-ordinated by Mark Sycamore BA ACIfA, Minerva Archaeology's *Managing Director*. He holds an honours degree in archaeology from the University of Lampeter and has over fifteen years' experience of the management of archaeological projects, and of fieldwork in both urban and rural contexts.

3.3 Fieldwork will be managed by Chris Turner BSc MCIfA, the Minerva Archaeology's *Operations Manager*. Chris holds an honours degree in Archaeological Science from the University of Bradford, and has over twenty years of practical archaeological experience in the commercial sector. Chris is a Member of the Chartered Institute for Archaeologists.

Staffing

3.4 Minerva Archaeology employs technical and specialist staff with a broad range of complementary experience covering all aspects of research, recording and analysis of archaeological and historical structures, features, and deposits, together with the artefacts and ecofacts associated with them.

3.5 Field staff on the project will normally be expected to have the following qualifications:

- a) All Project Officers will have had at least four years' experience in the field, with at least one of those at supervisory grade. They will also be corporate members of the Chartered Institute for Archaeologists.
- (b) All Assistant Project Officers will have had at least three years' experience in the field. They will also be corporate members of the Chartered Institute for Archaeologists.
- (c) All other members of the team will have had a minimum of two years' experience in the field. Corporate or affiliate membership of the Chartered Institute for Archaeologists will be considered desirable.

Specialist Support

3.6 While members of the project team have the necessary local, academic and professional knowledge to examine a broad range of artefacts and ecofacts, and to undertake the majority of tasks required in archaeological practice, provision will be made for academic advice and technical services to be sought from appropriate recognised specialists if required. The current list of relevant specialists is given below:

Historic buildings	David Hillelson, Heritage Network
Ceramics: Prehistoric	Andy Fawcett, Bury St Edmunds
Ceramics: LPRIA/Romano-British	Helen Ashworth, Heritage Network
Ceramics: Medieval/post-medieval	Paul Blinkhorn, Northampton
Ceramics: Saxon	<i>Ditto</i>
Church Archaeology	David Hillelson, Heritage Network
Conservation	Julia Park-Newman, Conservation Services
Decorative metalwork: IA/Roman	Angela Wardle, Stevenage
Wood	Dr Damian Goodburn
Environmental analysis	John Summers, Wardell Armstrong
Faunal remains	<i>Ditto</i>
Flints	Keith Fitzpatrick-Matthews, N Herts Museum Service
Geophysical surveying	SUMO Services, Worcestershire
Human remains	Malin Holst, York Osteoarchaeology
Industrial residue analysis	Jane Cowgill, Lincolnshire
Numismatics	M.Curteis, BA AMA, Chelmsford Museum
Palynology	Rob Scaife, Palaeopol
Petrology	D. Williams, Southampton University
Radio carbon dating	SUERC, Glasgow

Standards

3.7 Minerva Archaeology's general operational procedures for archaeology are documented in a series of manuals which are available for consultation on site and in our offices.

3.8 Minerva Archaeology currently undergoing the process to become a registered organisation with the Chartered Institute for Archaeologists (CIfA). The company aims to maintain high standards of work and undertakes to follow the Code of Conduct of the CIfA, the Standards for Field Archaeology in the East of England published by the Association of Local Government Officers (ALGAO), and the relevant sections of the professional standards and guidelines set by the CIfA, the Historic Buildings and Monuments Commission for England (Historic England), the United Kingdom Institute of Conservation (UKIC), and such others as may be appropriate to the effective execution of the project.

3.9 Health and Safety is priority for Minerva Archaeology. The company undertakes to follow all relevant Health and Safety regulations, and all staff hold *Construction Skills Certification Scheme* (CSCS) cards covering Health and Safety. A risk assessment for the project has been prepared.

3.10 Minerva Archaeology maintains full Employers' and Public Liability insurances and full Professional Indemnity insurance. Policy details are available on request.

Project Stages

Introduction

4.1 A programme of archaeological works is proposed to satisfy the local planning authority requirements, and the identified aims and objectives of the project, as described in the *Research Design*, above. It is intended to be an incremental process, the nature and extent of each new phase being dependent on the results of the foregoing stage(s). Each stage is subject to the approval of the local authority before it can proceed and additional method statements may need to be prepared.

4.2 Overall most projects will consist of at least one stage of evaluation, followed by mitigation if required. If significant, complex, extensive or unusual archaeological remains are encountered during either evaluation or mitigation, additional stages of work may include assessment of the material prior to publication.

4.3 In this case the previous archaeological evaluation demonstrated archaeological remains survived on site dating from at least the early Iron Age period, alongside other areas that appear to be disturbed by post-medieval and modern activity. The strategy decided by the HET has to been to move straight to mitigation via archaeological monitoring and recording of the archaeological remains that may be impacted by development.

4.4 The planning condition requires mitigation via archaeological monitoring and recording in the area of the proposed single dwelling and all additional groundworks associated with the construction of the proposed single dwelling will be monitored. This includes footings, service trenches, landscaping and any other ground reduction

Stage 2 - Mitigation

4.5 As the evaluation identified buried prehistoric, post-medieval and modern remains, a second stage of work will be required as mitigation.

4.6 All groundworks associated with the development will be monitored to ensure that an appropriate record is made of any archaeological features and deposits that are directly impacted by the development groundworks and that meet the research criteria of the project.

4.7 The local authority's archaeological advisors will be kept informed of progress during the monitoring. If significant remains are encountered, further work may need to be carried out to suitably protect, investigate and record them with the approval of the LPA and its advisors.

4.8 On completion of the mitigation fieldwork, the findings will be collated, together with a discussion of their archaeological and historical context, for inclusion in the definitive report on the results of the project as a whole, on completion of the subsequent stages.

4.9 The report will be submitted for the approval of the local planning authority as the definitive report on the results of the project, and, subsequently, published in an appropriate form. The documentary and material archives for the project will also be finalised and deposited with the agreed suitable museum/ repository.

Post-excavation and Results

Introduction

5.1 Upon completion of the fieldwork and data gathering, a report will be prepared, which draws together the results obtained so as to meet the aims and objectives of the project, as described in Section 2, above.

5.2 The report will be produced in the standard Minerva Archaeology house style. Copies of the report will be provided to the curatorial authority, and additional copies will be lodged with the planning authority and deposited with the relevant museum/repository.

5.3 It is anticipated that the results of the present project would be combined with subsequent stages of work, if appropriate, and published in the local archaeological journal, or in an appropriate specialist academic journal, depending on the nature and complexity of the information recovered. The results of the present stage of work will be uploaded to the Archaeology Data Service's OASIS database together with any unpublished archive reports.

Artefact Collection/ Retention

5.4 In all projects, the decision to discard material will be taken on a case by case basis, in consultation with the appropriate materials specialists, and the HET, and in line with the ClfA's Toolkit for Selecting Archaeological Archives, published collecting policy of the receiving museum or repository.

5.5 It is the intention that all significant archaeological material will be collected on site. The Regional Research Agenda, Specialist guidance and site specific research aims will always drive the collection retention policy. However, the table below indicates the criteria for decisions about artefactual collection/ retention based on significance.

5.6 Matching any criteria of a higher level of significance will increase the likelihood of retention.

Significance	Criteria	Retained?
High	Stratified; datable; diagnostic; informs projects aims and objectives; unusual	Yes
Medium	Stratified; dateable; undiagnostic; informs projects aims and objectives; cannot be identified in the field	Yes
Low	Unstratified; undateable; undiagnostic; does not inform projects aims and objectives; identifiable	Unlikely
Insignificant	Unstratified; modern; undiagnostic; likely imported material; does not inform projects aims and objectives; common	No

5.7 Any material identified as potentially not for collection will be put aside on site, until the need to retain/ discard discussion with the curator can take place before the end of the fieldwork. Any uncollected material will be adequately recorded.

5.8 Where large deposits of artefacts are encountered, a representative sample may be collected in agreement with the HET.

5.9 In the case of multiple stages, the retention and disposal of the individual components of the material archive will normally be assessed in detail, in line with the Toolkit for Selecting Archaeological Archives, prior to each stage.

Copyright

5.10 Minerva Archaeology shall retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988, with all rights reserved; excepting that it hereby provides an non-exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project as described in the Project Brief and the Written Scheme of Investigation.

5.11 Minerva Archaeology will assign copyright on completion of the project to the museum or repository undertaking the ultimate curation of the archive, but will retain the right to be identified as the author of all project documentation and reports as defined in the Copyright, Designs and Patents Act 1988 (Chapter IV, s.79).

Archive Deposition

5.12 On completion of all stages of the present project, it is intended that the full archive, including the documentary records owned by Minerva Archaeology, and the material records owned by the client and held in the care of Minerva Archaeology, will be deposited with North Hertfordshire Museum Service, Hitchin.

5.13 The archive will be prepared for deposition in accordance with the current Hertfordshire Archaeological Archive Standards (2018), published by the Hertfordshire Association of Museums.

Archive and Report Preparation

5.14 A summary of the results of the present stage of investigation can be made available within one week of the completion of the fieldwork, if requested, and will include an assessment of the archaeological importance of the remains.

5.15 The report will conform to industry standards and guidance, and typically include the following:

- Table of contents and summary
- Introduction with planning background and outline of scheme
- Historical and archaeological background to the site
- Site topography and geology
- Aims and objectives of the investigation
- Methodology employed in the field and during post excavation
- Location of archive deposition
- Objective descriptions of trenches, areas, and features investigated and recorded over the duration of the project
- Artefacts and ecofacts concordance and assessment
- Discussion of the results in accordance with the projects aims and objectives and, relative to regional/ national research frameworks
- Conclusions and confidence rating
- List of sources consulted
- List of illustrations
- Scaled plans and sections of the site and features
- Plates of trenches, areas, features and significant finds encountered

5.16 Supplementary documents may also be included, as appropriate (Appendices);

- Trench information table
- Table of recorded contexts
- Specialist Reports
- OASIS summary

5.17 The archive and complete report will normally be available within six weeks of the completion of the entire fieldwork programme.

DIGITAL MANAGEMENT PLAN

5.18 Minerva Archaeology is committed to following best practice and guidance to safely store and safeguard all digital data collected or created as part of the current project.

5.19 Mark Sycamore, as the designated officer, has overall responsibility for the company digital data.

5.20 Standard methods of data collection will be applied throughout the project. Methods of collection will meet the requirements of the HET.

5.21 Currently, Minerva Archaeology field data records are primarily recorded on a range of card pro-forma and where appropriate in permatrace drawings. Information in digital format is also used including digital photographs, drawings and survey data if appropriate. However data created during a project may be supplemented by third party information, primary records may also be digitised. Digital data will be produced during the course of producing reports and disseminating results.

5.22 In the course of the project, due to the nature of the work, certain data will be collected. This may include data provided by the land owner and or developer, any other contractors related to the project and the Local Planning authorities. This data may contain information relevant to the project such as architectural plans, topographical surveys, etc or professional or personal contact details.

File Formats

Category	Format	Stored	Backup
Digital Mapping	CAD (DXF, TCW)	NAS drive	External drive
Digital Mapping	GEOTIFF	NAS drive	External drive
Digital Drawings	GIS (QGIS)	NAS drive	External drive
Digital Drawings	Scans (TIFF, PNG, JPEG)	NAS drive	External drive
Project Tracking	Excel (XLS)	NAS drive	External drive
WSI	Word (doc, docx)	NAS drive	External drive
Finds Concordance	Excel (XLS)		External drive
Report	Word (doc, docx)	NAS drive	External drive
Pro-forma	Word (doc, docx)	NAS drive	External drive
Digital Pro-forma	Excel (XLS)	NAS drive	External drive
email	webmail	Cloud	Cloud
Digital Photographs	(RAW, TIFF)	NAS drive	External drive
Digital Survey data (GPS)	CAD (DXF)	NAS drive	External drive
Third party documentation and reports	Word (doc, docx) and pdf	NAS drive	External drive

Project File Structure

5.23 All digital project data is stored on a central network drive. This network drive is incrementally backed up at the end of each day onto a separate drive.

5.24 Each project has a unique project number consisting of the letters MA (for Minerva Archaeology) followed by a number.

5.25 A folder structure is standardised across every project, each subdivided for the separate storage of files for General information, Tender, WSI, Post excavation, Important emails, Drawings, Archiving, Digital Photographs

5.26 Digital photographs are uploaded into folders named by date. During the preparation of the report, shots that are to be used are copied into a specific report folder.

5.27 Filenames of documents and files have version numbers or may contain a 'Final' designation. For example, *MA_123_Report_text_V2* or *MA_123_Report_text_Final*.

Metadata

5.28 A metadata summary will be included in the report. A working copy will be on Minerva Archaeology's network server.

5.29 Metadata tables for each data type will be populated during the life cycle of the project and will use standard format for each data type as recommended by ADS, who are the intended repository for the digital data archive.

5.30 Data documentation will meet the requirements of the project brief, museum deposition guidelines and digital repository guidelines and the methodology laid out in the *Written Scheme of Investigation* (WSI).

5.31 An archive catalogue documenting both physical and digital archive records will be maintained

Security

5.32 All devices that have access to digital project data have suitable antivirus installed and are kept up to date (either f-secure or win 10 windows defender). Systems are also maintained with available, regular security updates. Access to sensitive files is restricted as they are stored in drives invisible to most of the network and password protected. Access to the network is protected by firewall, and remote access is allowed through limited secure machines, with secure web application installed (Splashtop).

Live Storage

5.33 With the exception of emails, which are cloud stored, all company and project based data is stored on a Raid 5 network drive (NAS). An incremental backup of all files on the network drive is made at the end of every 24 hour period. Further copies of project sensitive data are also held at remote locations.

5.34 Sufficient data storage space is available on Minerva Archaeology's server. The server is accessible by staff on and offsite via a secure log-in.

Long-term Storage

5.35 It is anticipated that digital project files will be stored on the network drive for at least a year after the completion of the project. Files may be archived onto secure storage within five years of the project completion.

Archiving Data

5.36 Deposition of digital data will be in accordance with current guidelines (ClfA/ ADS/ AAF/ Historic England), and the requirements of the appropriate museum or repository. The site's digital data will be deposited with the *Archaeological Data Service*.

5.37 Deselection of project data from the project archive will be reviewed over the duration of the project. Deselection of data will be in accordance to ClfA's Selection Toolkit for Archaeological Archives

5.38 In the normal course of a project, some files will not be included in the archive, such as:

- Commercially sensitive emails
- Records for administration purposes, such as timesheets and mileage forms
- Draft versions of reports and digital drawings
- Intermediate scans used for preparation of drawings, or already imbedded into other documents included in the archive.
- Redundant digital photographs (copies or working shots)
- Third party data that have a time-limited licence, such as HER data
- Third party documents not produced or commissioned by Minerva Archaeology Ltd.

GDPR

5.39 Minerva Archaeology recognises its responsibilities towards the way it collects, stores and uses personal or sensitive information. It will comply with current guidance under General Data Protection Regulations (GDPR), and Minerva Archaeology's Data Policy. All data covered by the regulations will be stored securely, with access restricted. The Information Commissioner's Office (ICO) will be notified if a breach occurs, defined as a security incident that has affected the confidentiality, integrity or availability of personal data held by the company.

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Site Specific

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Method Statements

Archaeological Monitoring Method Statement

6.1 When monitoring, sufficient cleaning by hand will be undertaken to define and clarify any exposed archaeological features and deposits.

6.2 The location and outline of all defined archaeological contexts will be recorded in relation to existing features by offset measurement, and a site plan produced at 1:50.

6.3 Spoil will be scanned visually and using a metal detector and all finds not of modern origin will be collected and recorded as unstratified.

6.4 The results of the preliminary recording and an assessment of the significance of the identified features and deposits will be provided to the HET, together with recommendations for the most appropriate strategy to be adopted to mitigate the effects of the development on those remains.

6.5 Where preservation in situ is not practical or can only be partially achieved, appropriate mitigation is likely to involve a full record being made of those features and deposits that will inevitably be destroyed, in written, drawn and photographic forms, supported by appropriate sampling of associated artefacts and ecofacts. Construction may have to pause in the vicinity of any such feature/ deposits, to allow adequate time and space while they are safely investigated. These areas may also be fenced to provide such remains protection.

Preservation in Situ

6.6 Where identified features or deposits are considered to be of archaeological significance but will remain unaffected by the groundworks, they will be protected by a layer of geotextile membrane fixed in place by a layer of sand, ballast or similar granular make-up material.

6.7 Where structural elements are encountered, these will be left in situ wherever possible, and bridged. Where partial removal is inevitable, care will be taken to ensure that such removal does not damage or otherwise impact the integrity of the surviving elements.

6.8 Where identified features or deposits are considered to be of archaeological significance but will require partial removal, the surviving elements will be protected using a patch of geotextile membrane, cut so as to overlap the feature by a minimum of 500mm, and weighted down with 100mm depth of granular material laid by hand. Where, for structural reasons, features or deposits would normally be required to be dug out, these will be bridged and left in situ.

6.9 If human remains, artefacts falling within the terms of the Treasure Act (1996), or collections of artefacts or ecofacts which are considered to be of particular significance are uncovered in these groundworks, provision will be made for their complete recording and recovery.

Preservation by Record

6.10 All features and deposits that will be inevitably damaged or destroyed by the development groundworks, will be fully investigated and recorded within the limits of the impact of those groundworks.

6.11 The sampling level of the archaeological remains to be excavated will be determined as the project proceeds, in accordance with considerations of accessibility and the potential for preservation in situ. It will, however, take into account the principles set out below:

- *Structures and specific features of specialised activity* (e.g. industrial or agricultural processing; ceremonial; funerary): will be fully excavated or sufficiently sampled to fully understand their character, and all relationships recorded.
- *Ditches and gullies and other linear features*: all significant relationships will be defined and investigated. All terminals will be excavated. Sufficient of the ditch lengths will be excavated to determine the character of each individual ditch over its entire course with consideration given to possible re-cutting of ditches which may not have taken place over the entire length. This will aim to achieve an approximate average sample of 20% of each ditch length including excavation of intersections. Should specialised deposits (e.g. localised refuse dumping, industrial wastes) be discovered, then more extensive excavation may be carried out with the advice of the appropriate material specialist. Consideration will be given to the recovery of sufficient artefact assemblages to assist in dating stratigraphic sequences and for obtaining sufficient ceramic assemblages for comparison with other sites.
- *Pits*: all will be investigated in half section, or in the case of complex intercutting, in quadrant. Where sufficient artefactual and ecofactual evidence can be recovered in the excavated half of each feature, no further excavation will be undertaken.
- *Post and stake holes*: where practical, all will be investigated in half-section, or else will be totally excavated. Where sufficient artefactual and ecofactual evidence can be recovered in the excavated half of each feature, no further excavation will be undertaken.
- *Extensive archaeological deposits, buried soil horizons*: where such deposits are of limited extent and are intrinsically of clear archaeological significance (e.g. middens) a 50% sample will be systematically excavated employing a sampling grid and in appropriate spits to ensure spatial control of finds, and palaeo-environmental samples (see below). Where they are of a less specific nature (e.g. of topographical interest) a control area representing up to 20% of the whole will be investigated in appropriate spits or in stratigraphic layers if identifiable in order to establish the nature, depth and date of the deposit, and to achieve the aims and objectives of the project. The remaining material may be removed, by machine if appropriate, to investigate the underlying material.
- *Working hollows, quarry pits, ponds etc.*: all relationships will be ascertained and one or more hand dug sections cut of suitable width (e.g. 1.5-2.0m) to establish the character of the fill, the base of the feature, any evidence of the method of excavation, and in order to obtain dating evidence. Further investigation will be a matter for on-site judgement. The scale and method of excavation will be determined by the need to define their extent, date and function. The potentially long time span and likely character of the backfilling of such features gives a high probability of artefacts in secondary contexts being re-deposited. Unless there are specific reasons to expect special deposits or

stabilised horizons with evidence of occupation activity in their backfill, a combination of machine excavation following the basic stratigraphy and hand sampling may be used for further excavation with the agreement of the HET

6.12 Other archaeological deposits: excavation and sampling strategies for other types of deposit will be decided according to their nature and significance with regard to achieving the aims and objectives of the project.

6.13 Should remains falling within the terms of the Treasure Act (1996), or collections of artefacts or ecofacts which are considered to be of particular significance be uncovered during the fieldwork, the HET, the Coroner's office, and the Portable Antiquities Scheme officer will be contacted (as appropriate) and their advice sought.

6.14 The physical security of all archaeological deposits, features and artefacts, both on and off the site, will be a central concern and all reasonable measures will be taken to ensure their protection before, during and after excavation.

Recording Procedures

6.15 In order to facilitate the production of an overall project archive of consistent standard the following recording procedures will be applied as far as possible.

- The site will be assigned a unique alphanumeric code that will be used to identify all records, finds and samples relating to the project.
- A continuous unique numbering system will be operated. Context records will be compiled on individual pro-forma record cards. Each layer, fill, cut etc will be described in terms of soil detail, stratigraphic position, dimensions, artefact content, samples and interpretation. The context system will be cross-referenced to all other records including plans and sections and may be stored in the form of a computer database. A separate set of registers will be maintained for samples, registered finds, levels and context sequence.
- Where stratified deposits are encountered a Harris Matrix may be compiled during the course of the investigation to aid interpretation and dating of features and deposits.
- Soil descriptions will be standardised, as far as possible, to conform to the use of sorting charts, roundness index, percentage of area, grain size, texture, consistency and colour.
- All plans of excavated features will be drawn on polyester film at a scale of 1:20 (or 1:10 if necessary in order to show detail). Plans of intermediate contexts may be drawn in the spaces provided on the pro-forma record cards or on polyester film, as appropriate. Any burials will be drawn at 1:10. A register of plans will be kept.
- Sections through features will normally be drawn at 1:10. If required, long sections, to demonstrate stratigraphy or sedimentary sequences, will normally be drawn at 1:50 or 1:20. A register of sections will be kept.
- All plans and section drawings will be annotated with absolute heights derived from an established TBM.

- A full photographic record in digital format will be maintained illustrating in both detail and general context the principal features and finds discovered. The photographic record will also include working shots to illustrate more generally the nature of the archaeological work. The record will be in digital format using high quality DSLR equipment with an APS-C sensor and a maximum resolution of 24.2 megapixels. Lenses and film types will be chosen to suit the prevailing conditions. A complete register of all photographs will be included in the archive. Photographs will include an appropriate scale (including vertical scales used in combination with horizontal scales for deep sections), north arrow and a photo board.

Artefact Recovery

6.16 Artefact evidence will be collected and treated according to the following general strategy.

- All artefacts will be retained from hand excavated contexts unless they are of recent origin. In these cases sufficient of the material will usually be retained where it is important to validate the date and establish the function of the feature.
- Some categories of finds of limited intrinsic interest may be sampled and recorded on site where their retention is not considered essential to the archaeological aims and objectives of the project and they would constitute an excessive storage burden. For example, burnt stone or undifferentiated post-medieval tile fragments.
- Unstratified objects from topsoil or other modern deposits will not normally be retained except where they are of intrinsic interest either in their own right or in contributing to an understanding of the site. However, their presence would always be noted.
- Metal detecting equipment, where its use is considered appropriate, will be operated by, or under the supervision of, archaeological staff.
- Bulk samples of industrial residues will be taken under the advice of the relevant specialists for laboratory processing and identification.
- Recovery of artefacts will normally be by hand, except where bulk samples are taken for other purposes or for special recovery of small items.
- Should human remains be encountered and removal be required, Minerva Archaeology will obtain a Ministry of Justice licence, and will ensure that the conditions of its issue are maintained.
- All registered finds (excluding bulk finds) will be recorded in relation to the site grid and their height above OD. The register of these finds will form part of the archive.
- In certain circumstances where unusual or extremely fragile and delicate objects are found, their recovery will be undertaken by appropriate specialists.
- All finds and samples will be exposed, lifted, cleaned, stabilised, marked, bagged and boxed in accordance with the guidelines set out in UKIC's Conservation Guidelines no. 2.

- All excavated objects will be deemed to form an integral part of the site archive (that is, they will not be separated, except for display or research purposes, or for reasons of security, from the archive itself).

Ecofact Recovery

6.17 Ecofact evidence will be collected and treated in accordance with the guidelines set out in Environmental Archaeology (English Heritage 2011). In general, the following strategy will be followed.

- All macroscopic evidence will be collected and treated in the same manner as described for artefacts.
- Where a deposit appears to be rich in faunal remains it will be dry-sieved (using a 5mm mesh size) in order to maximise the range of animal species present in the context. However, this should only be undertaken where the deposit has obvious potential and can be reliably phased.
- If a context is suitable, contains datable material and demonstrates a potential for environmental information, a standard 40 litre sample will be taken for the recovery of small animal bones, carbonised remains, molluscs etc.
- Linear features will generally be sampled at intervals commensurate with their length in order to recover a general spread of material. In the case of house gullies (eaves-drips/construction slots) at least four points should be sampled (assuming that the gully is at least 80-90% complete). All ditch terminals should be sampled.
- Undisturbed kubiena tin or column samples of sediments will be taken for micromorphology of buried soils where these are likely to shed important light on the environmental development of the area.

RESOURCES AND PROGRAMMING

6.18 One member of staff will be detailed to take responsibility for the co-ordination of the fieldwork element of the present project, and will normally be available for all intervention and recording.

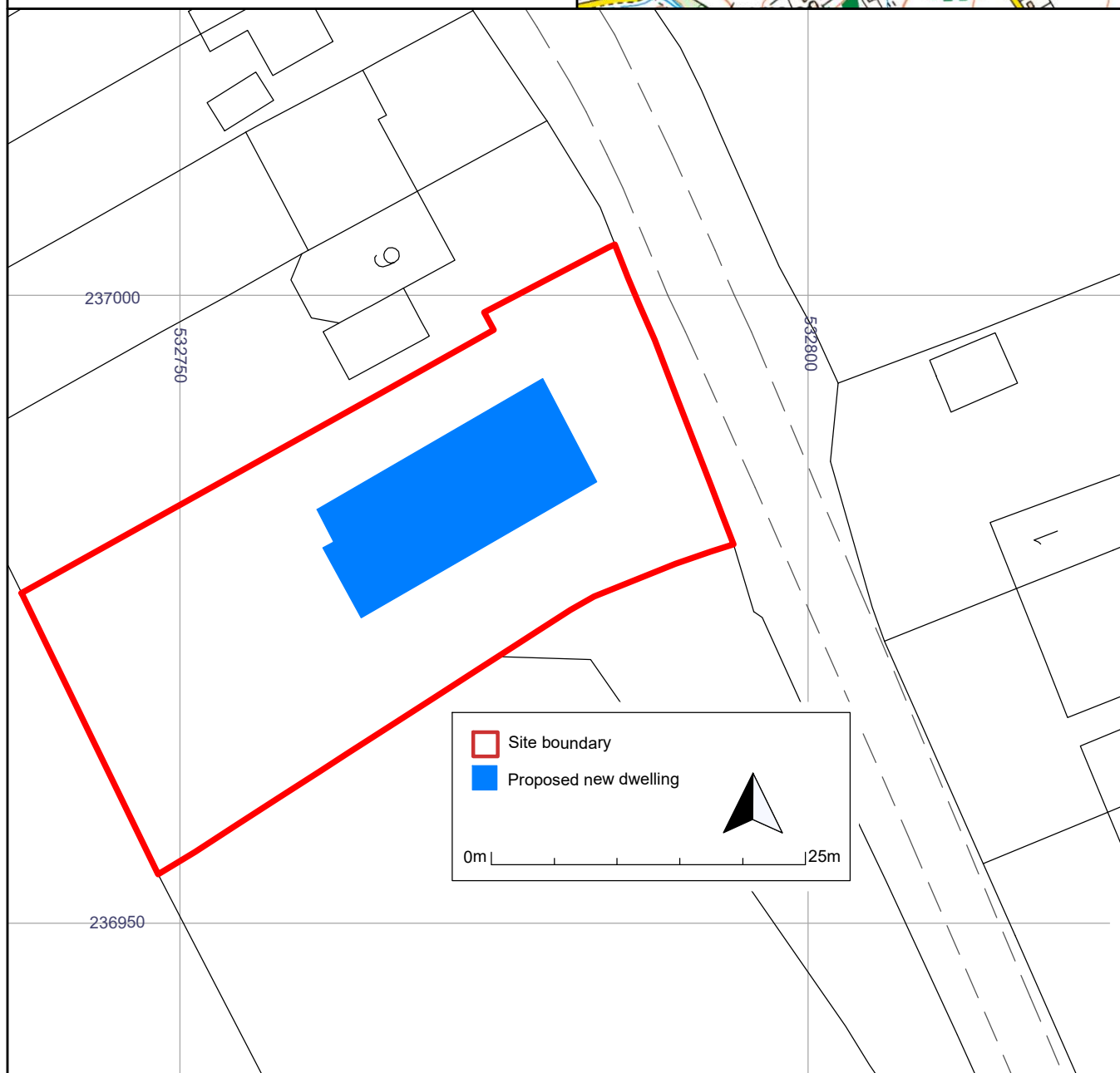
6.19 Where necessary, alternative or additional staff will be made available to ensure the adequate recording of any archaeological remains, and to minimise any delays to the client's programme arising from unforeseen circumstances including delays resulting from adverse weather, the presence of a higher than predicted density of features requiring to be investigated, the discovery of human remains, the discovery of unusually large, deep or complicated features, or the discovery of unusually large or complicated assemblages of artefacts or environmental deposits.

Public Engagement

6.20 It is unlikely that there will be any scope for public engagement during the current project. However, if significant remains are discovered in the course of the project, with approval of HET, Minerva Archaeology may attempt to promote and disseminate information to local interested parties, and if appropriate, and safe, arrange public visits to site.

Timetable

6.21 The monitoring fieldwork has not yet been timetabled, but is expected to start in the first half of 2025.



Site location and layout

Ordnance Survey (c) Crown Copyright. All rights reserved. Licence number 100061774

Scale 1:500

Figure 1

Appendix 1

Fieldwork Risk Assessment			
Site Name:	Land adjacent to 9, North End, Kelshall, Hertfordshire	Ref:	MA 533
Project Type:	Archaeological Monitoring & Recording	Date:	20/03/ 2025
Signed:	FW	Approved:	MS
Overall Risk BEFORE Mitigation (Low, Low-Moderate, Moderate, High-Moderate, High)			
Moderate			
Overall Risk AFTER Mitigation (Negligible, Low, Low-Moderate, Moderate, High-Moderate, High)			
Low - Moderate			

Remember mitigation measures **MUST** be put in place for hazards with a PR score of 4 or above

Abnormal Risks (Site Specific)

Hazard		At Risk	Potential injury	Appropriate Action (Mitigation)	Calculated Risk			
Process	Type				LO	PS	PR	MR
None								

All hazards need to be monitored during a project and reassessed if methodologies change significantly.

Key: *Likelihood of hazard occurrence (LO)* 1=Rare; 2=occasional; 3= very likely

Potential Severity of injury (PS) 1=negligible; 2=minor injury; 3=serious injury/ fatal

Perceived Risk (PR) Calculated using (LO x PS)

Mitigated Risk (MR) 1=V.Low; 2=Low; 3=Normal; 4=Proceed with Caution; 5=Unacceptable

IF MITIGATED RISKS (MR) IS 5 OR HIGHER THAN THE RISK IS UNACCEPTABLE WITHOUT FURTHER ACTION TAKEN

Hazard		At Risk	Potential injury	Appropriate Action (Mitigation)	Calculated Risk			
Process	Type				LO	PS	PR	MR
Arriving and Departing								
Loading/ unloading vehicle	Carrying too much equipment; dropping equipment	All users	Back injury; foot injury; minor cuts	Follow the manual handling procedures; training in safe lifting; caution while loading tools	2	2	4	3
Transport to and from site	Traffic accident; vehicle fire	All users	Serious injury or death	Vehicles kept in good order; all drivers have company vehicle test; properly maintained fire extinguisher in vehicle	1	3	3	2
Parking vehicles	Run down or traffic accident	All drivers	Serious injury or death	Park in designated areas on site or find a safe place to park; do not park on pavements or obstruct highways.	1	3	3	2
Site Conditions								
On site	Adverse hot weather conditions, hot/cold/ rain/ snow	All on site	Dehydration; heat-stroke; sunburn of varying degrees of severity. Increased likelihood of falling ill; exposure	Use high factor sun creams/ sunblock; drink at least 1.5-2 litres of water; take regular breaks in shade. Wear suitable warm/ waterproof clothing; take shelter from extreme weather	2	2	4	3
On site	Extreme noise	All in vicinity	Serious damage to hearing	Wear approved ear defenders; limit the time of exposure to sound.	2	3	6	4
On site	Contamination; hazardous waste	All in vicinity	Irritant of varying degrees of severity; Serious disease or death	Wear suitable protective suits; gloves and appropriate breathing apparatus; Avoid contact, direct or close proximity with harmful substances.	2	3	6	4
On site	Lone working	Worker	Injury without help or support.	Inform colleagues of whereabouts. Maintain communications with office. Carry mobile phone on your person – switched on, charged & in credit.	3	2	6	4
Ground conditions	Tripping, or falls on uneven ground	All on site	Serious injury; muscle strains	Wear PPE; clearance if possible; Caution when walking across site, particularly when carrying equipment. Look where you are going.	2	3	6	4
Vegetation, Plants, bushes and trees	Trips and falls, unsafe or low tree branches	All in vicinity	Serious injury; minor cuts; muscle sprains; tetanus; stomach illness; allergic reaction varying degrees of severity; poisoned	Wear PPE; If possible clear area of vegetation. Avoid direct contact with vegetation likely to cause allergic reaction; do not eat any unknown berries or fruit.	1	3	3	2

Hazard		At Risk	Potential injury	Appropriate Action (Mitigation)	Calculated Risk			
Process	Type				LO	PS	PR	MR
Animals	Bitten, chased or stood on by large animals (e.g. cows/ horses) Contact with animal excrement or urine.	All in vicinity	Serious injury; cuts; disease	Wear PPE; If possible, request the removal of farm animals from site prior to start of work; adequate washing facilities on site. Know the symptoms of animal borne diseases.	1	3	3	2
Biting/stinging insects	Bites, stings, infection.	All in vicinity	Irritation; minor injury; disease	Wear PPE; apply suitable repellent where necessary; avoid known nests; if necessary, have nests removed.	2	2	4	2
Fieldwork								
Vicinity of heavy machinery	Run down or struck by mechanical arm.	All in vicinity	Serious injury or death	Wear high visibility PPE; keep out of operating radius of machines; work with a banksman; keep within driver's field of vision.	2	3	6	4
Overhead Services	Striking overhead cables; machine arcing to power cables	All in vicinity	Serious injury or death	Never machine close to overhead services; when moving beneath overhead services the machine arm must be as low as possible and supervised; Wear PPE; Check developers plans; use a cat scan; consult with on site foremen/ surveyor; assume all services are live	2	3	6	4
Buried services	Striking electric cables; breaking foul water drainage	All in vicinity	Serious injury or death; stomach illness	Wear PPE; Check developer's plans; use a cat scan; consult with on site foremen/ surveyor; assume all services are live; avoid contact with foul water.	2	3	6	4
Buried services	Gas pipelines	All in vicinity	Serious injury or death	Check service maps, do not mechanically excavate near pipes, call 0800 111 999 in an emergency and evacuate site.	2	3	6	4
Open excavations	Falls into excavations	All in vicinity	Serious injury or death	Adequate fencing; safety notices; hazard tape around trenches and other excavations. Look where you are going.	2	3	6	4
Deep excavations	Collapse of excavations	All in vicinity	Serious injury or death	Excavations should be fenced off; adequate gap between stockpiled spoil and excavation edge; professional shoring and/ or stepping or battering the sides; wear PPE; Secured ladders for access; do not enter unsafe excavations.	2	3	6	4

Hazard		At Risk	Potential injury	Appropriate Action (Mitigation)	Calculated Risk			
Process	Type				LO	PS	PR	MR
Buried features	Sudden voids, ground collapsing	All in vicinity	Serious injury or death	Care should be taken when walking or standing on known buried features, particularly cellars and suspected wells. Access to any identified void should be restricted using fencing, appropriate safety equipment should be used	1	3	3	2
Human remains	Contact with decayed human matter	All in vicinity	Infection and disease of varying severity	Human remains to be handled in accordance with ClfA guidelines and the terms of the Home Office licence; gloves, masks & protective overalls should be worn as necessary.	1	3	3	2
Portable electrical devices	Lights and generators	Operative	Serious injury or death.	Ensure all electrical devices, cables and fittings are in good condition. Do not use any damaged equipment. Do not use generators in confined space. Where appropriate use 110volt equipment.	1	3	3	2
Excavation tools	Hitting self or others nearby	All in vicinity	Serious injury; minor cuts	Wear PPE; training in the safe use of tools; don't work too closely together.	2	3	6	3
Wheelbarrows	Tipping over; collapsing excavation sides	All in vicinity	Serious injury; back injury; muscle strains	Barrows should be properly maintained; don't overload barrows; don't use barrows in wet slippery conditions; ensure barrow runs are adequately far away from excavation sections and are not too steep	1	3	3	2
Survey equipment	Eye strain; looking into the sun	User	Serious injury to eyesight	Adequate training; never look at the sun through any optical device.	1	2	2	1
Site pegs/ markers	Tripping over; falling or walking into them	All in vicinity	Serious injury	Use protective footwear; All pegs/ markers should be sprayed and have protective caps.	2	3	6	3
Working on ladders/ raised platforms	Fall; dropping equipment	All in vicinity	Serious injury or death	Wear PPE; Working at height should be avoided. Excavations should be stepped to allow access. all ladders should be properly maintained and properly secured at the top and base; access to the area beneath ladder/ platform should be restricted; only access scaffolding that has been erected by an approved certified contractor; mechanical platforms should be operated by trained professionals only	2	3	6	4

Hazard		At Risk	Potential injury	Appropriate Action (Mitigation)	Calculated Risk			
Process	Type				LO	PS	PR	MR
Vicinity of overhead work	Struck on the head by falling objects	All in vicinity	Serious injury or death	Avoid working beneath others working overhead; wear PPE; Make sure that everyone working overhead is aware of your presence below; work with a banksman	2	3	6	4
Structures	Struck by falling debris; buried under collapsing walls/ buildings	All in vicinity	Serious injury or death	Wear PPE; do not undermine walls; do not enter unsafe structures	1	3	3	2
Structures	Dust; air pollution; confined spaces	All inside structure	Breathing difficulties; loss of consciousness	Adequate fresh air supply; wear appropriate face masks; take regular breaks; only those with professional training should enter a confined space	1	2	2	1
Structures	Debris, broken glass, bird/animal droppings	All inside structure	Trips or falls; minor cuts; disease	Wear PPE; area should be cleared; wear gloves and avoid contact with animal droppings; adequate washing facilities	2	2	4	3
Unexploded ordnance	Unearthing of unexploded ordnance	All in vicinity	Serious Injury or death.	Evacuate site (at least 100m) and contact police.	1	3	3	2
Site facilities								
Toilets	Contact with human waste	All users	Sickness; disease	Provide adequate hygienic facilities for the size of work force. Site toilets to be clean, regularly emptied & maintained, and washing facilities provided	1	2	2	1
Site office	Trips, falls; fire; electrical shock	All users	Serious Injury or death	Furniture, heaters, cookers, lights and fixtures are to be in good condition and properly maintained. Fire fighting appliances need to be in good working order; Passageways need to be kept open. Look where you are going when moving around office. Fire escapes to be well marked.	2	3	6	3
Site Visitors								
Visitors	Trips, falls; run down or struck by heavy vehicles	All visitors	Serious Injury or death	Restrict access to site using adequate fencing; wear PPE; Visitors must be accompanied at all times; On larger sites visitors should be undergo an on-site health & safety induction	2	3	6	3

Hazard		At Risk	Potential injury	Appropriate Action (Mitigation)	Calculated Risk			
Process	Type				LO	PS	PR	MR
Vicinity of hostile clients/ landowners	Assault, Harassment	Individuals	Serious physical or verbal assault	Do not put yourself in danger. Make written appointments; if overtly hostile take colleague or police officer. If there is a clear danger leave site.	1	2	2	1