THE MANNINGS, SHOREHAM-BY-SEA, WEST SUSSEX: WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL WATCHING BRIEF

Site Code:	**MSWS20**
Central NGR:	**TQ 21907 05182**
Local Planning Authority:	**Adur and Worthing Councils**
Planning Reference:	**AWDM/1281/19**
Commissioning Agent:	**Silver DCC Ltd**
Commissioning Client:	**Southern Housing Group Ltd**
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Figure 1: Site Location
Figure 2: Proposed Watching Brief Areas

1 INTRODUCTION

1.1 Project Background

1.1.1 Pre-Construct Archaeology Ltd (PCA) has been appointed by Silver DCC Ltd, on behalf of Southern Housing Group Ltd, to carry out an archaeological watching brief, at The Mannings, Surry Street, Shoreham-by-Sea, West Sussex, hereafter 'the site' (**Figure 1**). The development of the site will include the demolition of the existing building and its replacement, on similar but larger footprint, by a six-storey block of flats.

1.1.2 The archaeological watching brief and subsequent reporting are requirements based on the advice of John Mills, West Sussex County Archaeologist and advisor to the Local Planning Authority.

1.1.3 This document is a Written Scheme of Investigation, which details the method and proposed project design of a programme of archaeological work.

1.1.4 This document has been prepared in accordance with the Chartered Institute for Archaeologists standard and guidance for an archaeological watching brief (CIfA 2014, Updated 2020) and Management of Research Projects in the Historic Environment (Historic England, 2015). PCA is a CIfA Registered Archaeological Organisation and is bound by its code of conduct.

1.2 Location, Topography and Geology

1.2.1 The site, TQ 21907 05182 (**Figure 1**), is located east of the historic core of Shoreham and lies on the west side of Surry Street between Ham Road and New Road (**Figure 1**). The site is flanked to the west by a supermarket and car park.

1.2.2 The site is a rectangular area of c. 0.27ha and occupied by a four storey brick built housing block, The Mannings, fronting Surry Street, with wings to the north and south and an access road along its south wing leading to a rear car park that is bound on its west side by planting and a brick wall. The site lies at approximately 6m above OD and some 150m inland of the River Adur and the western arm of Shoreham Harbour.

1.2.3 According to the British Geological Survey (BGS online viewer) the underlying geology of the area comprises Chalk, beneath superficial deposits of clay, silt, sand and gravel.

1.3 Proposed Development

1.3.1 The proposed development comprises the demolition of the existing buildings and structures, and the construction of buildings ranging in height from three to six storeys providing 74 residential units. Further car and cycle parking facilities, amenity space and landscaping is also included within the proposal.

1.3.2 Exact details of the construction methods are not yet available, but groundworks are likely to be required throughout the development that may have an impact on below ground archaeological resources.

1.4 Archaeological and Historical Background

1.4.1 An archaeological desk-based assessment (DBA) for the site was prepared in support of the planning application for the proposed development (PCA 2019) and is not repeated in detail here. The following is the summary of the findings from the DBA:

'This Historic Environment Desk-based Assessment has been prepared in order to inform a planning proposal for the development of The Mannings, Surry Street, Shoreham, West Sussex. The development of the site will include the demolition of the existing building and its replacement, on similar but larger footprint, by a six-storey block of flats.

The site does not contain nor form a part of any designated heritage asset or known archaeological remains. No archaeological sites or finds have been recorded from within the site.

This assessment concludes that there is low potential for prehistoric, Romano-British Anglo-Saxon and medieval remains within the site and that such remains would be of local or regional significance. There is moderate potential for remains of later periods to survive and these would be of local significance. However, previous and existing impacts below ground within the site are likely to have been severe and in consequence it is likely that any archaeological potential within the site has been significantly reduced or removed entirely.

In view of the site's archaeological potential but taking account of the previous and existing impacts on that potential, it is considered that there is no archaeological reason for the proposed development to be constrained or hindered. It is recommended that, in the event a planning application leads to the current proposed development gaining consent then that consent should be granted with a condition requiring a programme of archaeological work to be carried out, in order to secure the preservation of any archaeological remains by record. The archaeological work should consist of monitoring development groundwork in a 'watching brief' and implemented in accordance with a Written Scheme of Investigation that has the approval of the Local Planning Authority's archaeological advisor.'

2 AIM

2.1 Archaeological Watching Brief

2.1.1 The aim of the archaeological watching brief is to monitor groundwork for the proposed development and investigate and record archaeological resources that are identified, taking account of the date, nature, extent, bio-archaeological and palaeo-environmental potential of the resources and the research aims and questions that have been identified. A further aim of the work is to prepare an archive of the results of the investigation leading to the preparation of post-excavation assessment report and, if appropriate, a further programme of analysis and publication.

3 METHOD

3.1 Archaeological Watching Brief

3.1.1 The archaeological watching brief will comprise the monitoring of the excavation of foundations and services for the proposed development(**Figure 2**). The foundation and services excavations will be conducted by hand and by machine by the client's contractor with whom arrangements will be made for the monitoring to take place. The watching brief will be conducted by a suitably qualified archaeologist from PCA Ltd.'s Winchester office.

3.1.2 This Written Scheme of Investigation is informed and guided by the Sussex Archaeological Standards 2019 (**Appendix 2**).

3.1.3 The archaeologist will inspect excavations for the presence of archaeological features, deposits and artefacts and human burials. If present, their cleaning, definition and investigation will be by hand and will be achieved as quickly as is reasonably possible so as to avoid un-necessary delay to the development.

3.1.4 In the event unexpectedly significant or complex archaeological deposits or features are encountered, PCA will notify the contractor and client, and on their behalf undertake liaison with the Archaeological Advisor to the LPA in order to determine their subsequent treatment and any detailed investigation and recording that might be deemed appropriate.

3.1.5 All gold and silver will be removed to a safe place and reported to the local coroner according to the procedures relating to the Treasure Act 1996. Where removal cannot be affected on the same working day as the discovery suitable security measures will be taken to protect the finds from theft.

3.1.6 Arisings from excavations will be regularly scanned for the presence and collection of artefacts; this will include the use of metal detector.

3.1.7 In the event no archaeological resources are identified in the proposed groundworks the contractor and the client will be informed that the watching brief can be terminated.

3.2 Access and Safety

3.2.1 Reasonable access to the location of the site will be granted to representatives of the Local Authority and the Client, or their agent, who wish to be satisfied, through site inspections, that the archaeological works are being conducted to proper professional standards and in accordance with the agreements made.

3.2.2 All relevant health and safety legislation, CDM, COSHH regulations and codes of practice will be respected.

3.2.3 There is a duty of care for the Client to provide all information obtainable on ground contamination and the location of live services before site works commence.

3.3 Human Remains

3.3.1 In the event that human burials are discovered these will be left in situ and their future treatment agreed with the LPA Archaeological Advisor. Should their excavation and

removal from the site be required, a Ministry of Justice Licence will be required (in accordance with Section 25 of the Burial Act 1857) before the remains can be lifted. The need for a Licence applies to both inhumation and cremated remains. Application for a Licence will be made by PCA, on behalf of the client. PCA will comply with the conditions of the Licence and discuss with the LPA Archaeological Advisor any requirements of the Licence that may conflict with the agreed method of investigation of the site. If appropriate, a separate method statement may be required specifying methods for the detailed excavation, recording and sampling of human remains.

3.3.2 Arrangements will be made to ensure the security, protection from deterioration and damage, and the respectful treatment of human remains and grave goods. An appropriately qualified and experienced osteo-archaeologist will be available (PCA - James Langthorne) to advise on the excavation and removal of any human remains from the Site, following published guidance: the Institute for Archaeologists (IfA) Technical Paper 13 'Excavation and post-excavation treatment of cremated and inhumed remains' (J I McKinley & C Roberts); IFA Paper No. 7 'Guidelines to the Standards for Recording Human remains' (M Brickley & J I McKinley); British Association of Biological Anthropology and Osteoarchaeology (BABOA) Code of Practice.

3.3.3 The following guidance will also be observed:

- Human Bones from Archaeological Sites: Guidelines for Producing Assessment Documents and Analytical Reports (2004). http://www.english-heritage.org.uk/publications/human-bones-from-archaeological-sites/
- Science and the dead. A guideline for the destructive sampling of archaeological human remains for scientific analysis (2013) http://www.archaeologyuk.org/apabe/
- The procedures to be followed in the excavation of inhumations and cremations will follow standard guidance and methodologies, including those of PCA (Appendix 1), which cover the excavation, sampling, recording, lifting and processing of human remains and their burial context.

3.4 Recording

3.4.1 All trenches, structures, deposits and finds will be recorded according to accepted professional standards and in accordance with PCA's recording systems. Sufficient data will be recorded to allow the required level of assessment and reporting (see section 4). Recording will be carried out to a sufficiently high standard to provide a full record of the deposits excavated.

3.4.2 All archaeological contexts are to be recorded individually on context record sheets. A further, more general, record of the work, comprising a description and discussion of the archaeology, is to be maintained as appropriate.

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

3.4.4 A digital photographic record of the work will be made forming part of the site archive. This will consist of high quality, colour digital photographs (minimum 12 Mega Pixels) taken in jpeg and RAW formats by an appropriately trained individual, illustrating in both detail and general context all trenches, test pits and archaeological features and deposits discovered. The photographic record will also include 'working shots' to illustrate more generally the nature of the archaeological operation mounted. The digital images will be preserved on a dedicated and backed up server. The RAW files will be converted to high quality tiff images for eventual deposition with site archive. Guidance and standards of the Novium will be followed in the preparation of the digital photographic record.

3.4.5 Traditional medium format black and white photographs will be taken where warranted, such as for use in publication.

3.4.6 The complete site archive including finds and environmental samples will be stored in a secure place throughout the duration of the fieldwork and post-fieldwork programme prior to deposition.

3.4.7 The site archive is to be consolidated after completion of the watching brief, with all site records and finds collated and ordered as a permanent record.

3.5 Finds Recovery Processing and Treatment

3.5.1 All artefacts recovered during the excavations on the site are the property of the Landowner. They are to be suitably bagged, boxed and marked in accordance with the United Kingdom Institute for Conservation, Conservation Guidelines no.2. and the Institute for Archaeologists 'Standard and Guidance for the collection, documentation, conservation and research of archaeological materials' (CIfA 2008). On completion of the archaeological works the Landowner(s) will be requested to donate and deposit the archive, including all artefacts, with an appropriate designated museum or repository.

3.5.2 Artefacts will be excavated carefully by hand. Bulk artefacts will be collected and bagged according to their archaeological context. The location of special finds, including in situ worked flint will be recorded three dimensionally. Artefact recovery will include the use of a metal detector operated by an experienced user.

3.5.3 If necessary, an appropriately qualified and experienced archaeological conservator will be appointed to advise and assist in the lifting of fragile finds of significance and or value

and to arrange for the X-raying and investigative conservation of objects as may be necessary. Where appropriate to address the aims of the excavation, sieving of deposits will be undertaken to maximise the recovery of small artefacts.

3.5.4 Records of artefact assemblages will clearly state how they have been recovered, sub-sampled and processed. Sub-sampling procedures will be agreed with the LPA Archaeological Advisor and follow the guidance and advice of the curator of the museum/depository in which the Site archive will be deposited.

3.5.5 Artefacts that fall under the statutory definition of Treasure (as defined by the Treasure Act of 1996 and its revision of 2002) will be reported immediately to the relevant Coroner's Office, the local Finds Liaison Officer (FLO) who is the designated treasure co-ordinator for West Sussex, the landowner and the LPA Archaeological Advisor. A Treasure Receipt (obtainable from either the FLO or the DCMS website) must be completed and a report submitted to the Coroner's Office and the FLO within 14 days of understanding the find is Treasure. Failure to report within 14 days is a criminal offence. The Treasure Receipt and Report must include the date and circumstances of the discovery, the identity of the finder (put as unit/contractor) and (as exactly as possible) the location of the find.

3.6 Archaeological Science and Environmental Sampling

3.6.1 A structured programme of environmental sampling appropriate to the aims of the excavation will be implemented. The strategy and methodology for the sampling, recording, processing, assessment, analysis and reporting of deposits with environmental archaeology potential will be in accordance with English Heritage Centre for Archaeology Guidelines "Environmental Archaeology – A guide to the theory and practice of methods, from sampling and recovery to post-excavation" (2nd edition, August 2011). Any variation to this guidance will be agreed in advance with both the LPA Archaeological Advisor and the Historic England Regional Scientific Advisor.

3.6.2 Where necessary an appropriately qualified and experienced geo-archaeological specialist will be appointed to record any deposits of particular significance such as buried soils and to advise on depositional processes. The appointment of the specialist will require the prior approval of the LPA Archaeological Advisor. It is currently proposed that the specialist services will be provided by ARCA – University of Winchester.

3.6.3 Where necessary the advice of the English Heritage Regional Scientific Advisor will be sought regarding specialist sampling requirements and any scientific applications relevant to the archaeological excavation of this Site.

3.6.4 Where deposits are dry, bulk samples for the recovery of charred plant remains, small bones and finds, will be taken from sealed and datable features such as pits, ditches, hearths and floors. Each context will normally be sampled. The size of the sample is expected to be in the range of 40-60 litres per context or 100% of smaller contexts. Samples will not be taken from the intersection of features.

3.6.5 For large features / spreads appropriate consideration will be given to sampling on a grid system if this fits in with the aims of the excavation.

3.6.6 Where good conditions for the preservation of bone have been identified, all large bones will be collected by hand and sieving of bulk samples up to 100 litres will be undertaken as appropriate.

3.6.7 Mollusc samples of 2 litres each will be taken vertically from appropriate sections to investigate the changes of vegetation through time.

3.6.8 Where deposits are wet, waterlogged or peaty, monoliths will be taken along cleaned vertical surfaces for the retrieval of pollen, diatoms, ostracods and foraminifera. The numbers to be taken will be agreed with the LPA Archaeological Advisor. For wet, waterlogged or peaty deposits, bulk samples of 20 litres will be taken from visible layers or spits for the retrieval of plant macro-remains and insects.

3.6.9 Environmental samples from dry deposits will normally be processed by flotation following the excavation fieldwork and the residues will be sorted to retrieve small bones, small finds and charcoal that have not floated. Environmental samples from wet deposits will normally be sent to specialists for processing in laboratory conditions.

3.6.10 Appropriate provision will be made for the scientific analysis of human remains, such as the application of Carbon, Nitrogen, Oxygen and Strontium isotope analysis. Through PCA's appointed project Osteoarchaeologist James Langthorne and Dr Frank Meddens (Director & Head of Post-Excavation, PCA) it is provisionally intended that the advice and services of Dr Andrew Wilson (Senior Lecturer in Forensic & Archaeological Sciences, School of Life Science, University of Bradford) will be obtained to advise on the identification, taking and processing of suitable skeletal samples.

3.6.11 Appropriate provision will be made for the application of scientific dating techniques such as radiocarbon, dendrochronology, archaeomagnetic, OSL and thermoluminescence. The advice of the English Heritage Regional Scientific Advisor will be sought in advance of the application of these techniques. Any necessary delay that is caused in completion of the reporting of the excavation to enable provisional results to be included will be notified to the LPA Archaeological Advisor. It is intended that the services of e.g. SUERC or Beta Analytic are obtained for the application of the dating techniques.

4 REPORTING

4.1 Post-excavation Assessment Report

4.1.1 Following all site works, including additional works as may be required on the site in addition to those set out in this document, and processing and stabilisation of the site archive, a Post-excavation Assessment Report will be prepared within three months. Copies of the report will be issued to the commissioning client and the LPA Archaeological Advisor.

4.1.2 The post-excavation assessment report will be issued in hard-copy and in digital format. The digital copy will be supplied in .pdf format accompanied by digital copies of images, plans and maps in .bmp, .tif or.jpg format. The medium on a PC CD-ROM. Whichever software is used the digital files will be supplied in a PC readable format.

4.1.3 A copy of the archive report and digital data (.dxf or shapefile format) relating to the archaeological findings will be deposited with the West Sussex Historic Environment Record.

4.1.4 The post excavation assessment report will include an updated project design setting out an overall programme of post excavation analysis through to completion of a Full Report and Publication of the results. This will of necessity recognise the need for review in the light of subsequent stages of archaeological mitigation works that are carried out and as such constitutes a provisional updated project design. The report will also follow the guidelines set out in the Sussex Archaeological Standards 2019.

4.1.5 The Assessment Report will include:

- Non-technical summary;
- Introduction;
- Planning Background;
- Previous archaeological work relevant to the excavation;
- Topography of the site;
- Methodology;
- A factual summary of results characterising the quantity and perceived quality of the data for each component of the site, e.g. stratigraphic/structural, artefactual (referencing e.g. local fabric series for ceramic assemblages) and environmental, including full specialist reports;
- A statement of the archaeological potential of the results;
- A review of the data in the context of the research questions posed in the WSI;
- New research questions arising from the data collection;
- The value of the data to local, regional and national research priorities;
- Updated Project Design for further analysis and publication, if necessary;
- Publication Synopsis;

- Bibliography;
- Acknowledgements;
- Tabulated data;
- Illustrations (site/phase plans, sections and photographs);
- OASIS form.

4.1.6 And ESRI shape file providing GIS data will be supplied to the LPA Archaeological Advisor and will contain the scheme of investigation, such as trench outlines, and significant archaeological information, such as feature/deposit plans.

5 ARCHIVE PREPARATION & DEPOSITION

5.1 The Site Archive

5.1.1 The site archive, to include all project records and cultural material produced by the project, will be prepared in accordance with Guidelines for the Preparation of Excavation Archives for Long-term Storage (UKIC 1990) and the Institute for Archaeologists 'Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives' (IfA 2009). On completion of the project PCA will arrange for the archive to be deposited in accordance with the provisional arrangements made with a suitable museum or repository at the onset of fieldwork. Any alternative arrangements will be agreed with the LPA Archaeological Advisor and the Local Planning Authority.

5.1.2 The designated receiving museum is Worthing Museum and Art Gallery. The Curator of Archaeology will be contacted in advance of the fieldwork for an accession number and to obtain information regarding the appropriate archive preparation standards.

6 MONITORING AND LIAISON

6.1 Site Visits

6.1.1 Arrangements will be made for the LPA Archaeological Advisor to monitor the progress of the archaeological site works and compliance with the aims and methodology set out in this document.

7 HEALTH AND SAFETY

7.1 Policy

7.1.1 PCA will conduct the work in compliance with the Health and Safety at Work etc Act 1974 and will also follow the guidance set out in "Health and Safety in Field Archaeology" (Standing Conference of Archaeological Unit Managers 1997).

7.1.2 PCA's own Health and Safety Policy and a procedures manual will be available on site. Site staff will have an appropriate level of training to enable them to carry out fieldwork safely.

7.2 Risk Assessment

7.2.1 Prior to the commencement of fieldwork PCA will conduct a site specific risk assessment, if necessary as part of a Health and Safety Method Statement. All staff will be appraised of the Risk Assessment and comply with mandatory requirements set out such as the use of PPE and other measures to avoid risk from hazards that are identified.

7.2.2 PCA will maintain the site in a safe condition and in order to do this will review and update the Risk Assessment accordingly, taking appropriate measures as necessary to offset risk from new and unexpected hazards as may arise.

8 PROGRAMME AND RESOURCES

8.1 Programme

8.1.1 The groundwork programme of the development is expected to commence in 2020 and last several days. The watching brief may be ongoing and undertaken in multiple non-contiguous visits over the lifespan of the project

8.2 Resources

8.2.1 The archaeological field team will comprise one PCA fieldwork Supervisor to be assisted by PCA fieldwork Archaeologists, the number of which will be determined by the requirements of the work and programme. The following table lists the personnel who may be involved in archaeological fieldwork and post-fieldwork roles and tasks associated with the project:

Role	**Name**
Project Management	Thomas Hayes (PCA)
Archaeological Supervision	TBC (PCA)
Prehistoric Pottery	Louise Rayner (ASE)
Roman Pottery	Dr James Gerrard (PCA)
Post-Roman Pottery	Chris Jarrett (PCA)
	Bernie Sudds (PCA)
Ceramic Building Material	Kevin Hayward (PCA)
	Bernie Sudds (PCA)
Architectural Stone Work	Kevin Hayward (PCA)
	Charlotte Matthews (PCA)
Petrology	Kevin Hayward (PCA)
Building Recording	Charlotte Matthews (PCA)
	Malcolm Gould (PCA)
Animal Bone	Kevin Reilly (PCA)
	Philip Armitage
Human Remains	James Langthorne (PCA)
Lithics	Barry Bishop
Timber	Damian Goodburn (MoLSS)
Glass	Hilary Cool
	John Shepherd
Small Finds	Dr Marit Gaimster (PCA)
	Hilary Major
Roman Coins	Dr James Gerrard (PCA)
Metalwork	Dr Marit Gaimster (PCA)
Leather	Quita Mould
Iron Slag	Lynne Keys
Historical Research	Guy Thompson (PCA)
Conservation	Dana Goodburn-Brown (Am Tech Ltd)
Industrial Archaeology	Rob Kinchin-Smith (RPS)
Environmental Archaeology	Dr K. Wilkinson ARCA (Univ. of Winchester)

Appendix 1: PCA Manual – Human Remains

Excavation and treatment of human remains

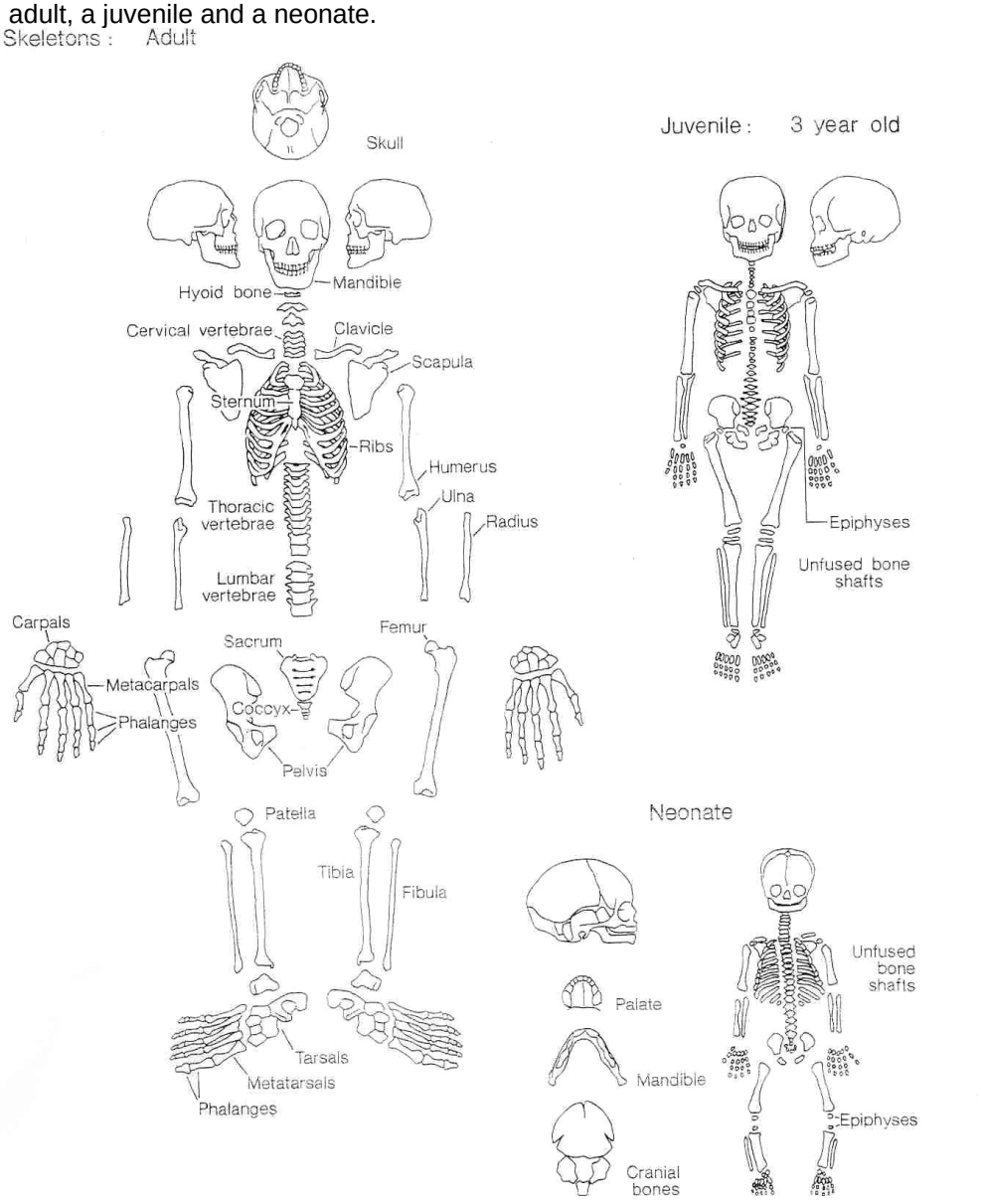
Before excavating any human remains you need

- To apply for license or faculty (the project manager will do this)
- Shield the remains from public view

INHUMATIONS

EXCAVATION

- If you are not familiar with skeletal anatomy refer to the three diagrams showing the skeletons of an adult, a juvenile and a neonate.



(Archaeological Site Manual, MOLAS)

- Expose the skeleton by carefully excavating the surrounding soil. A plasterers leaf trowel, dental tools, small plastic or wooden tools are useful. Metal tools can damage the bone.

- Take care to disturb bones as little as possible and leave any grave goods in place. To avoid disturbance sometimes it is best not to try and fully expose the hands, feet and ribs.

- Expect to find bones in unusual places due to varying burial practices e.g. prone, crouched, decapitated burials etc.

- It is useful to keep soil from the abdomen, chest and neck areas so that it can be passed through a 2 mm sieve to retrieve any calcified soft tissue, gall/bladder/urinary stones or foetal bones that are sometimes difficult to identify during excavation. This can also be useful to do around the hands, feet and head in order to retrieve all bones and loose teeth especially in immature individuals where the bones and unfused epiphyses can be very small.

- Further sampling strategies for environmental information will be dependent on the condition of the soil, e.g. acidity and moisture. If burials were expected a sampling policy will probably have been decided on, check what this is. If the burials are unexpected a sampling strategy will be decided on site.

RECORDING

Photography

- Once the skeleton is completely exposed it is useful at this point to photograph it. A wet sponge is effective for cleaning however it is important not to let the bone repeatedly dry out, as it will deteriorate. Detailed and accurate plans take time and it is not always feasible to do these therefore these photos are important records of the skeleton *in situ*.

An example skeleton recording sheet has been included. The information required for each section is outlined below.

Skeletal diagram

- Shade in the skeletal diagram to show which bones are present. Where you are unsure of which bones are present, e.g. in the hands and feet, count the number of bones present and shade in this number. If truncated or disturbed annotate the area affected.

- Be aware that extra bones can occur, e.g. an extra rib or vertebra or sesamoid bones (extra small bones that most commonly occur in the hands and feet). These can be noted on the sheet.

Type

- E.g. standard, juvenile, infant burial.

Head at

- N, S, E, W etc. end of grave

Co-ordinates

- Site co-ordinates for each end of the burial.

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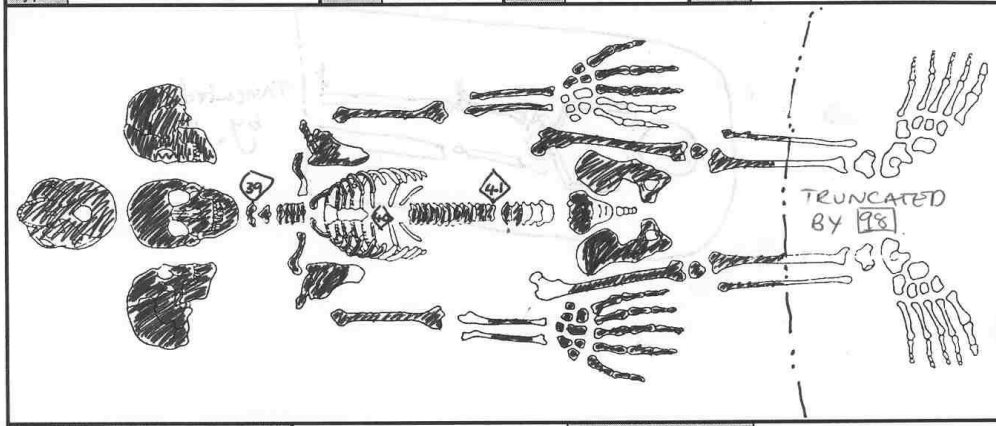
Skeleton Recording Sheet

Site Code	Site Name	Grid Square	Context Number
			102.

Type	STANDARD.	Cut No.	103	Coffin No.	—	Fill Nos.	101



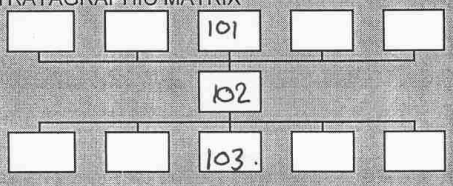
Head at W end of grave	107/210	co-ords of markers	108.5/210.

Attitude of:	
1 body	1) Extended and supine.
2 head	2) Fallen to face the south.
3 right arm, location of right hand	3) Upper arm by side, flexed at elbow with.
4 left arm, location of left hand	the hand placed over the pelvis.
5 right leg	4) Upper arm by side flexed at elbow with.
6 left leg	left had over right hand.
7 feet	5) Extended. } Lower legs and feet
8 extent of in situ bone degeneration	6) Extended. } truncated by cut [98]
9 state of bone after lifting	7) Truncated by [98]
10 other comments	8) Ribs, lumbar vertebrae.

9) Ribs became quite fragmented but generally good.
10) L + R hands bagged together.

PTO for more

STRATAGRAPHIC MATRIX



Finds directly associated with skeleton
(type, location on skeleton, co-ords and level)

PTO for more

Highest level	43.01	Lowest level	39.05

Plan numbers	101	Sample Nos. (mark on diagram)	39 40 41	Photograph Numbers	
Date and Initials	PA 01/02/03.	Checked by and Date		Burial no.	Group no.

Attitude

- The basic positions a body can be found in are:

Extended	Body straight out
Crouched	Foetal position with knees folded to the chest
Flexed	Legs flexed slightly to one side or at right angles in “seated” posture
Supine	On the back
Prone	Face down
On the side	Left or right

- Describe if the head is facing a particular direction, if it is tilted forward towards the chest; if it is not in its anatomical position describe where it has been placed etc.

- Describe the position of the arms, hands, legs and feet, for example are they flexed or straight, are the arms by the side, crossed over the chest or pelvis, is one leg crossed over the other, stating if they are crossed which is on top of the other.

***In situ* bone degeneration**

- Note which areas of the skeleton are in poor condition whilst the burial is still i*n situ*.

State of bone after lifting

- Note whether the bone fragmented on lifting and the extent to which this happened, for example left femur fragmented into three pieces, ribs very fragmentary.

Other comments

- Note any truncations not on the diagram, disturbance, relationships with other burials, obvious pathology, burial practices and any treatment carried out before lifting.

Stratigraphic matrix

- Fill in the stratigraphic relationships. If the skeleton is within a coffin it will have the same relationships as the coffin, i.e.

fill
|
coffin + skeleton
|
cut

Levels

- Take levels on the highest and lowest parts of the skeleton and at both ends.

Finds

- Note any finds directly associated with the burial, their location on the skeleton, co-ordinates and levels.

Samples

- Record in the box any sample numbers taken and mark the position of these samples on the skeletal diagram.

Plans

- On the reverse of the skeleton sheet draw a sketch plan showing the position of the skeleton within the cut, the coffin if there is one, any grave goods, clothing, deposits such as chalk, the orientation and any relationships the burial has with other features.

- A scaled plan is normally drawn at 1:10 and includes grave goods. The detail of the plan will be dependent on the nature of the excavation and the amount of time available. At the very least a plan showing the general outline of the skull, pelvis and long bones is advised.

LIFTING

When they are ready to be lifted the remains should bagged and labelled by skeletal area:

- Right arm
- Right hand
- Left arm
- Left hand
- Right leg
- Right foot
- Left leg
- Left foot
- Torso
- Skull and mandible

- If it is not possible to separate left and right hands or feet bag them together but note on the skeleton sheet that this has been done.

- As mentioned above sampling the soil around the hands, feet and head increases the likelihood of recovering all the bones

- The soil surrounding juvenile and infant burials should be bagged to ensure retrieval of all unfused epiphyses (ends of bones).

- Care should be taken when cleaning and lifting any burial in order to limit the loss of any information obtained from the skeleton, especially those of juveniles and infants, which are very fragile.

- Once bagged and labelled the skeletons should be boxed as soon as possible to limit the amount of crushing.

CREMATIONS

EXCAVATION

Undisturbed urned cremations

- Excavate around the urn

- Support the urn with bandaging

- Lift intact

- If the urn is inverted any bone which has fallen out should be bagged separately.

- If the urn is lidded special care should be taken not to disturb the contents from their original position.

- The fills will be excavated in the post-excavation process.

Smashed/disturbed urns

- If it is not possible to lift the urn as above it should be excavated on site. The surrounding soil should be dampened to limit fragmentation of the bone.

- Make a note of the largest fragment size before lifting the bone. If it is possible to identify what type of bone the fragment is from, e.g. skull, long bone, vertebrae, this should also be noted.

- The bone should all be placed in one bag, any original deposition will already have been disturbed.

Unurned cremations

- These should be excavated on site.

- If the burial is undisturbed and if time allows it should be excavated in uniform spits of, for example, 20 mm, dampening the surrounding soil to limit fragmentation. The bags should be labelled with the spit number. If the burial has been disturbed excavation by spits is not necessary.

- As above make a note of the maximum fragment size before lifting and if possible the type of bone (skull, long bone, vertebrae etc.).

- Surrounding soil that contains bone should be sampled.

- If the pit fill contains pyre debris or organic pyre goods (foodstuffs, wood, charcoal) a 100% sample should be taken.

RECORDING

- Cremation burials are recorded on normal context sheets.

- Associated pyre/grave goods, pyre debris should be recorded, including the quantity present whether excavated on site or lifted intact.

- Discolouration to the sides of burial pits or cists that could indicate burning or scorching should be noted.

- Measurements of the largest fragments taken during excavation should be recorded on the context sheet.

Post- excavation treatment of human bone

INHUMATIONS

Cleaning

- If the soil type allows, clean by dry brushing.

- If this is not possible use cold or tepid water (sorry) and a soft brush.

- Try not to immerse the bone in the water, as it will take forever to dry out and could make the bone fragmentary.

- However, small bones or clumps of soil with bone in can be placed on a mesh sieve and dipped in the water to remove the soil.

- If exposed the medullary cavity in long bones should be cleaned of soil where possible.
- Don't scrub the bones too hard or try to remove anything strongly adhering to the bone as this could make pathologies harder to observe.
- Care should be taken with the facial bones as they are very fragile.
- Teeth will often have deposits of calculus (hard, calcified plaque) on them, do not remove this.
- If in doubt about any deposits or the fragility of the bone ask the specialist before cleaning
- Allow the bone to dry slowly.

Packing

- Ensure the bone is completely dry before packing as it will go mouldy if not.
- To protect very fragile bone it can be wrapped with acid free tissue paper.
- Do not try to cram too many bags into one box as the bones can be damaged.
- When packing skeletons if possible keep the context together in one box as this makes analysis by the specialist a lot easier. If a skeleton has to be split between two boxes mark the boxes, e.g. 1 of 2, so the specialist is aware of this when they are assessing the bones.

CREMATIONS

Excavation of cremation urns lifted intact

- Off site a human bone specialist should preferably complete the excavation of cremation urns.
- The cremated remains should be excavated and bagged in 20 mm spits, if necessary the soil can be dampened to reduce fragmentation of the bone.
- Measure large fragments of skull and long bone before removing.
- Record and remove any obvious pyre/grave goods or pyre debris.

Processing the excavated material

- The environmental department will process the excavated material.
- Remove any large stones from the material.
- Sieve each spit of excavated material separately through a stack of 10, 5, and 2 mm mesh sieves.
- Separate the cremated bone from the remaining organic material, bag and label the remains up according to spit and fraction size. Separating the material <2 mm will probably not be possible.
- Any further pyre/grave goods or pyre debris found at this stage should be removed and recorded.
- After all the cremated bone has been removed the remaining organic material should be analysed for any surviving environmental data such as seeds, as this could provide information about the cremation and burial rituals.

Processing material form unurned or disturbed cremations

- Unurned or disturbed cremations should be processed as with urned cremations. If the cremation has been excavated in spits on site these should be processed individually if not the cremation can be processed as one sample.

Packing

- The same process for packing as that used for inhumations applies.

Appendix 2: Sussex Archaeological Standards

SUSSEX ARCHAEOLOGICAL STANDARDS 2019



Recommended practice and procedures for undertaking archaeological investigations in connection with the planning and development management process in East and West Sussex including Brighton and Hove. The wording contained in the standard clauses set out below (and covered in more depth in the appendices and annexes) should be used as the basis for preparing archaeological specifications or written schemes of investigation (WSIs) where fieldwork is undertaken to inform the planning process or required as a condition of planning consent.

***Foreword**: These 'Standards' are principally intended to cover archaeological fieldwork and recording generated by the National Planning Policy Framework (NPPF) and Local Plan policy but may be applicable to all archaeological fieldwork projects carried out in East and West Sussex, including Brighton and Hove as 'best practice' in project management. These standards should be used in conjunction with the relevant codes and by-laws of the Chartered Institute for Archaeologists.*

The local Historic Environment Record (HER) is the starting point in checking whether a proposal will have an impact on designated or known heritage assets (NPPF 189) but many heritage assets remain unknown to the HER and areas which appear to be 'blank' may only indicate that there has been no archaeological investigation hitherto. However, the effect of a planning application on the significance of a non-designated heritage asset (which could include below-ground archaeological remains) should be taken into account when determining the application (NPPF 196) and Local Authorities should make use of their archaeological advisers in order that the impact upon heritage assets can be assessed using appropriate expertise (NPPF 189).

The default technique used in assessing the archaeological potential of a development site (the field evaluation referred to in NPPF 189) is trial trenching. Complementary survey methods such as surface artefact collection and remote sensing techniques (geophysical survey) can also be used to help determine a strategy for trial trenching. Trial trenching remains the most cost effective single evaluation technique and as a 'rule of thumb' it will be expected that the trench sample size will be not less than 5% of the development site. This reflects experience gained from trial trenching exercises in the 1990s where trench sample sizes as low as 2% or 3% had proved unreliable in terms of quantifying the nature of the potential archaeological resource. (For discussion of sample size and techniques see "Evaluation of Archaeological Decision-making Processes and Sampling Strategies" Hey and Lacey, Oxford Archaeological Unit (OAU), 2001).

There may be circumstances where variations to these Standards, and to the Appendices and Annexes are necessary; any such variations or additions will be set out in the site-specific Written Scheme of Investigation prepared by the Archaeological Contractor carrying out the fieldwork to be approved in writing by the Local Planning Authority after consultation with their Archaeological Adviser.

These Standards have been prepared by the Local Planning Authority Archaeological Advisers in Sussex in consultation with Archaeological Organisations and Archaeologists working in the County.

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1.0 Professional Requirements

1.1 All archaeological fieldwork (and desk-based assessment) will be carried out by archaeologists acceptable to the relevant Local Planning Authorities, with recognised experience and expertise in the specified type of assessment or survey to be carried out. Registration with, or Membership of the Chartered Institute for Archaeologists (CIfA), will be expected of any professional Archaeological Organisation working in Sussex. Professional archaeological organisations are encouraged to register with CIfA or their project managers and senior site staff should be members of CIfA at a level appropriate to their level of responsibility.

1.2 During the course of fieldwork the Archaeologist (also referred to as the 'Archaeological Organisation' carrying out the work shall be on-site or represented on-site at all reasonable times by a suitably qualified archaeologist who shall be responsible on their behalf for the conduct of the on-site work. The names of the relevant member(s) of staff will be communicated to the Local Authority Archaeological Adviser, in advance of commencement of on-site works.

1.3 In initiating or tendering for archaeological work, the Archaeological Organisation must seek to ensure that all parties (including those commissioning the work) understand their full responsibility not only for the acquisition of data in the field but also for the processing and analysis of data and finds, appropriate scientific analysis, synthesis, appropriate dissemination of the results, long-term security of the archive and conservation and storage of the finds, together with the appropriate financial provision for all aspects of the work.

2.0 Pre-fieldwork requirements

2.1 Prior to commencement of on-site works the Developer or the Archaeological Organisation on their behalf shall inform the Local Authority Archaeological Adviser/s, of the proposed team assigned by the Archaeological Contractor to undertake such works and provide (if required) CVs of staff and specialists to be involved with the project. Project managers should be Members of the Institute for Archaeologists (CIFA). Projects should b e planned with regard to relevant national standards and guidance including English Heritage MAP2/MoRPHE and CIfA Codes, Standards and Guidelines: http://www.archaeologists.net/codes/CIfA

2.2 Prior to commencement of archaeological works on the Site, the Archaeological Organisation shall have:

2.2.1 consulted the relevant Historic Environment Record held by East Sussex County Council, West Sussex County Council and (for development within Chichester District) the Chichester District Council;

2.2.2 ascertained the anticipated solid and superficial geology of the site, from British Geological Survey/ Geological Survey of Great Britain maps;

2.2.3 examined, and interpreted from an archaeological point of view (as far as is possible), any readily available geotechnical site investigation records (e.g. borehole or test pit logs);

2.2.4 examined and noted details of published secondary documentary sources relevant to the site, e.g. the relevant volume of the *Victoria County History of Sussex* (where published);

2.2.5 examined and noted details (e.g. Landscape / archaeological / historical features, quarries, field names and plot numbers located in and around the development site) of relevant historical maps in the East Sussex and West Sussex Record Offices which may be of archaeological or historical significance - maps to be examined must include the relevant parish Tithe and / or Enclosure Map and associated Apportionments, Ordnance Survey maps from 1st edition to present, 18th- and 19th-century maps of Sussex / Southern Sussex and, where appropriate, estate / land development maps held in private archives;

2.2.6 sought and obtained a provisional Accession number for the Site Archive from the recommended recipient museum (except where the museum prefers to issue an accession number following completion of fieldwork), the box charge to be applied and any guidelines from the recipient museum regarding deposition of the Site Archive;

2.2.7 obtained information derived from Statutory Undertakers on services (gas, electricity, water, sewerage, telecommunications) on the Site, ascertained the alignments of Rights of Way and any environmental constraints; such information to be taken into account in carrying out fieldwork, so as to avoid those services/assets;

2.2.8 written and submitted a Written Scheme of Investigation/Method Statement to the Local Authority Archaeological Adviser;

2.2.9 obtained (or submitted) full copies of the Written Scheme of Investigation **and issued copies to the field officer responsible for carrying out the work on site prior to the commencement of fieldwork** – these and any other relevant documents such as Archaeological Desk-Based Assessments must be retained on site during the investigation, so that the field officer is aware of all potential requirements for the project;

2.2.10 ascertained the Developer's requirements in respect of communications with the media and public relations regarding the fieldwork;

2.2.11 There is not currently a requirement to upload archives and reports to OASIS, but in light of the HIAS Project, this may be reviewed once HERALD is operational.

2.2.12 contacted the Local Authority Archaeological Advisor to inform the anticipated start date.

3.0 Fieldwork requirements

Soil stripping, cleaning and identifying

3.1 All archaeological features, structures and deposits exposed during fieldwork must be cleaned, planned, and recorded. In general terms the amount of each archaeological feature to be excavated shall be proportional to its significance and sufficient to obtain a good indication of the date and function of that feature, subject to the requirements of adequate palaeo-environmental assessment and sampling - see below.

3.2 Excavation of discrete features should generally be carried out using small hand tools; single horizontal layers and deposits, large discrete features and ditches may be excavated where appropriate by mattock / pick and shovel as well as hand tools.

3.3 Deeper archaeological features and deposits should be characterised by excavation to full depth. Sampling of deeper features below achievable safety levels or development formation levels should be discussed with the archaeological advisor to the planning authority.

Planning, mapping, surveying

3.3 Archaeological structures, features and deposits exposed or excavated will be planned by the Archaeologist in relation to the excavated area within which they lie, and the plan outlines of the excavated areas planned on to a copy of an Ordnance Survey base map of not smaller than 1:2500 scale.

3.4 Archaeological structures, features or deposits must be surveyed by the Archaeologist in relation to Ordnance Survey levels, either by use of GPS survey or by use of an OS bench mark.

Human remains

3.5 Any human remains revealed during the fieldwork should initially be left by the Archaeologist *in situ*, covered and protected, and reported by the Archaeologist with despatch to the Coroner, the Ministry of Justice and to the Local Authority Archaeological Adviser/s. Where their removal has been agreed by the Ministry of Justice, a licence for their removal may be required and if so must have been obtained by the Developer or Archaeological Organisation, and the relevant Ministry of Justice and environmental health regulations should be complied with.

Treasure

3.6 Any finds believed by the Archaeologist to fall potentially within the statutory definition of Treasure, as defined by the Treasure Act 1996 and further defined by the Treasure (Designation) Order 2002, shall be reported with despatch to the Coroner or to the relevant local reporting museum, the Portable Antiquities Scheme Finds Liaison Officer (c.o. Sussex Archaeological Society), to the landowner and to the Local Authority Archaeological Adviser/s. A record shall be provided by the Archaeologist to the Coroner and to the Local Authority Archaeological Officer, of the date and circumstances of discovery, the identity of the finder, and the exact location of the find(s) (OS map reference to within 1 metre, and find spot(s) marked on map).

Health and Safety

3.7 In respect of the carrying out of any archaeological fieldwork attention is drawn to the Construction (Design and Management) Regulations 2015 (CDM 2015) and those elements of the Construction (Health, Safety & Welfare) Regulations 1996 which were incorporated when the 1996 regulations were revoked.

Use of Metal Detectors

3.8 In order to mitigate the loss of metal artefacts from topsoil/plough soil which would be removed as part of a development project or field evaluation, a metal detecting survey of the site may be required before any such soil stripping. Consideration should be given to working with local metal detectorists for archaeologically managed metal detecting of top soil / plough soil where appropriate. A log should be kept of the metal detector use. Finds must be recorded accurately in three dimensions using appropriate surveying methods and subject to careful handling, bagging, conservation and reporting as set out in the relevant sections of these Standards. Further detail is provided in Annex G.

3.9 In order to facilitate the recovery of small artefacts a metal detector should be used by the Archaeologist to survey excavated spoil, the surfaces of all exposed archaeological features, and any additional parts of the site directed by the Local Authority Archaeological Officer.

Treatment of finds

3.10 All artefacts (e.g. pottery, glass, metalwork, clay pipes, objects in worked flint and stone, wood, bone, horn and leather, brick and tile, slag) and ecofacts (organic finds such as bones, preserved ancient plant remains, seeds, pollen and charcoal, soil samples) recovered during the fieldwork will be made available by the landowner to the Archaeologist pending completion of the written report on the work.

3.11 Artefacts and ecofacts recovered during fieldwork will be bagged or put in trays on site and then stored during the course of the fieldwork at the Archaeologist's secure offices or usual place of secure storage of archaeological finds. The Archaeologist shall not leave any artefacts or ecofacts unearthed from the fieldwork on site overnight or on days other than working days.

3.12 Normally all artefacts recovered during fieldwork will be washed and identified and those to be retained will be marked by the Archaeologist with the Site Code and Context (where the size, condition and material type of the artefacts allows). All artefacts and ecofacts will be bagged and boxed by the Archaeologist, in accordance with current United Kingdom Institute for Conservation / RESCUE publication First Aid for Finds (3rd. ed. 1998). Bags and boxes should be marked with the Museum Accession Number. All "small finds/registered finds" (unless too small or of a material not to be marked) will be marked with the Museum Accession Number (where small, the Accession Number is to be preferred to the Site Code) and will be boxed together, separate from bulk finds.

3.13 All artefacts recovered during fieldwork, which require laboratory conservation will initially be stabilised by the Archaeologist prior to their deposition at the recipient museum, using passive conservation measures, in accordance with the guidelines set out in First Aid for Finds, referred to above.

3.14 Artefacts which require prompt active conservation measures to prevent deterioration must be identified at the time of excavation and a written conservation method statement prepared at an early stage during post-excavation work. Where initial fieldwork, or initial desk-based assessment, results in preservation of archaeological remains by record, all artefacts of this sort, recovered during development-related fieldwork from the relevant site, should have been cleaned and, subject to discussion with the receiving museum, stabilised or laboratory-conserved prior to their deposition in the museum. Full records of any treatment should accompany the artefacts.

3.15 Before deposition of artefacts or ecofacts at the receiving museum the Archaeological Contractor must confirm in writing (to the museum) that the written permission of the landowner to donate the finds to the museum has been obtained; and, where relevant, that the laws relating to Treasure have been complied with.

Palaeo-environmental sampling and other archaeological science techniques

3.16 On all sites involving archaeological excavation - evaluation, full excavation or recording under archaeological monitoring (watching brief) conditions - a structured programme of environmental sampling appropriate to the aims of the field work will be implemented. The strategy and methodology for the sampling, recording, processing, assessment, analysis and reporting of deposits with environmental archaeology potential will be in accordance with English Heritage Centre for Archaeology Guidelines "Environmental Archaeology – A guide to the theory and practice of methods, from sampling and recovery to post-excavation" (English Heritage, 2011). Any variation to this guidance will be agreed in advance with both the Local Authority Archaeologist and the English Heritage Science Advisor (South East) - Jane Corcoran: jane.corcoran@english-heritage.org.uk. Particular note will be taken of the following requirements , which are applicable to most sites:

3.17 High priority deposits for palaeo-environmental sampling are: primary fills of pits, wells, ditches and cesspits, layers of middens, occupation surfaces and other discrete activity areas, contents of hearths, kilns and ovens, storage areas or containers. Discrete burnt or charcoal areas are of the greatest interest and should always be sampled, but sampling should not be limited to areas of visibly burnt remains, for even charred plant remains are not necessarily visible within deposits, and many other types of material, including small finds, can be retrieved from the bulk samples. For some contexts and features (e.g. ditches, middens, occupation layers) multiple samples might be needed, from different locations; and for floors sampling should target areas where preservation is likely to be best (e.g. corners). On dry sites, pit and ditch fills where concentrations of bones and pottery are visible will yield the richest bulk samples.

Geoarchaeological sampling and recording

3.18 The geoarchaeological potential of a site should be investigated to inform an understanding of site formation processes. The strategy and methodology for the recording, sampling, processing, assessment, analysis and reporting of deposits will be in accordance with English Heritage Centre for Archaeology Guidelines "Geoarchaeology: Using earth sciences to understand the archaeological record" (English Heritage, 2007).

As a minimum all bedrock, superficial deposits and soils, exposed during fieldwork, will be described and interpreted in relationship to any recorded archaeological features and deposits. See also Annex E for consideration of the geological context for lithic artefact scatters.

Access

3.19 Existing access to adjacent land shall be maintained, where possible, by the Archaeological Contractor at all times during the course of fieldwork. Access to the Site during the course of fieldwork shall be in accordance with those points specifically designated for that purpose. Arrangements for access to the site should be notified to the Archaeologist by the Developer prior to commencement of the investigation. The Archaeologist should not commence works on site until all pre-commencement works (e.g. ecological mitigation measures) and arrangements for access to the Site have been notified and agreed.

3.20 All existing public and private highways including accesses shall be kept free of mud from site vehicles used to transport the Archaeological Organisation's 's staff to the Site to carry out the fieldwork. Public Rights of Way must not be obstructed by the Archaeological Organisation's site vehicles, spoil, equipment or other items associated with the fieldwork.

3.21 The Archaeological Organisation should ascertain any requirements on the Developer's part in respect of communications with the media and public relations regarding the fieldwork and communicate those requirements to visiting Local Authority Archaeologists in advance of their first visit. In cases where a Local Authority is commissioning directly or through an agent an Archaeological Organisation to carry out fieldwork or Desk-Based Assessment, or is acting directly for the commissioning body, any approaches to the Archaeological Organisation from the media or the press shall be referred to the Local Authority's Press Officer or public relations section.

Summary report/ update bulletins

3.22 Unless otherwise agreed in writing, a brief written summary of the findings of the fieldwork, with plans showing the locations and outlines of excavations and archaeological features and deposits/ relevant standing structures/ surface collections of finds, shall be completed within 10 working days of completion of fieldwork in each separate phase or sub phase of site work, and copies of these reports submitted, when requested, to the Local Authority Archaeological Officer, and where requested direct to the Local Planning Authority.

3.23 Where appropriate, subject to consultation with the Local Authority Archaeological Officer, the WSI may call for a weekly bulletin of key results supported by an updated site plan. These are particularly valuable in circumstances where the scale or complexity of the site/ development require fieldwork to be split into successive phases and/or where the Local Authority Archaeological Officer is asked to 'sign off' a phase of recording against partial discharge of the planning condition relating to archaeology.

4.0 Fieldwork report

4.1 A full report on the fieldwork shall be completed by the Archaeological Contractor within six weeks of completion of all fieldwork on the site, unless agreed in writing

with the Local Planning Authority and Archaeological Officer. A digital copy of this report (PDFA) shall be submitted to the Local Planning Authority, the Local Planning Authority's Archaeological Adviser, and the relevant Historic Environment Record. A hard copy of the final report must be included with the project archive. In West Sussex and Chichester a hard copy of the report must also be sent to the HER and the West Sussex Record Office.

4.2 The Developer and Archaeological Contractor should assume that reports lodged with the respective Historic Environment Records will become available for public inspection; and that information from the report may be authorised to be used by the Local Authority, with due acknowledgement to the Developer and Archaeological Contractor.

4.3 The principal functions of the report are to set down an accurate record of the sampled archaeological features to enable the nature and significance of the site to be understood and potentially re-assessed given that the recording process is destructive in itself (normally a one-off process and there is unlikely to be a second opportunity to re-visit and investigate archaeologically). Where applicable it will also enable the Local Authority Planning Committee to determine a planning application (and its impact upon heritage assets) from a position of knowledge. In this process the expertise of the Local Authority's archaeological adviser will be called upon to consider the options available and recommend suitable mitigation measures, if appropriate.

4.4 The report shall normally contain reproduced photographic illustrations (which are now likely to be digital in origin) showing, as a minimum, the overall extent of the area investigated and images of significant standing structures / contexts, with, in the case of trial trenches, an illustration(s) clearly showing the depth of the trench(es) and including ranging rod/scale, feature/context number and north arrow.

5.0 Site Archive

5.1 The Site Archive, which comprises a hard copy of the final report as well as records of the archaeological investigation and any materials recovered, including written elements, plans and drawings, photographic prints, digital images and transparencies (where appropriate) and other primary data recovered during the investigation, in written, drawn or electronic media, must be quantified, ordered, indexed, digitised (where appropriate), and made internally consistent. Treatment of materials, records, site matrix and summaries must be completed in accordance with Appendix 3 (site archive specification) of *Management of Archaeological Projects* (English Heritage, 1991) (MAP 2), Management of Research Projects in the Historic Environment (MoRPHE: English Heritage 2006) and with reference to 'Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation' (AAF, author Duncan Brown, 2007).

5.2 Work on the Site Archive shall be completed within six calendar months of completion of the archaeological investigation. Exceptions: (i) where the application of specialist scientific and analytical techniques render this time scale impractical, an extended time scale for completion of the site archive will be agreed in writing between the Archaeological Organisation and the Local Authority Archaeological Officer, prior to commencement of post-excavation works. (ii) where long periods separate each stage or phase of archaeological work (e.g. in some mineral workings), it may be appropriate for work on Site

Archives to take place in phases, with separate Post-Excavation Assessments. Upon completion of the Site Archive the Archaeological Organisation shall notify the Local Authority Archaeological Officer, in order that the latter may, if they wish inspect the Site Archive prior to its deposition in an appropriate museum.

5.3 It is recommended either that Copyright of the written, drawn and photographic elements of the Site Archive (electronic or manual) shall be vested jointly in the Archaeological Organisation and in the recipient museum; or that before deposition of the Site Archive in the recipient museum, the recipient museum should be given permission in writing by the Copyright holder to make reproductions of specified categories of material from the Site Archive for educational or research purposes, with due acknowledgement to the Copyright holder. In either event, the disposition of Copyright must be made plain in the Written Scheme of Investigation for the project and in writing to the recipient museum before archive deposition.

5.4 Cost estimates for archiving (including long-term storage costs) should be ascertained by the Archaeological Contractor in preparing quotations for undertaking the investigation. Within six months of completion of fieldwork, the Archaeological Contractor shall inform the Local Authority Archaeological Officer of arrangements reached with the recipient archive store and the NMRC for the submission of a security copy of the archive.

5.5 Subject to the agreement of the landowner (and in line with National Planning Policy) with regard to deposition of artefacts and ecofacts recovered during fieldwork, the site archive should be deposited by the Archaeological Contractor with the recipient museum/archive depository within five years from the date of completion of the investigation. **NB. The Archaeologist should ensure that sufficient funding for the long term storage of the archive can be paid to the museum/archive depository.**

5.6 Subject to the terms of the Treasure Act 1996, it is recommended that all artefacts and ecofacts unearthed from the investigation and all other elements of the Site Archive (as defined in MAP2) should be deposited by the Archaeologist in an appropriate public museum registered or provisionally registered by Resource (The Council for Museums, Archives & Libraries) and acceptable to the Local Planning Authority (to be discussed with their Adviser/s).

5.7 Prior to deposition of finds in the recipient museum the Archaeologist should agree with that museum the sample or quantity of bulk finds (pottery, animal and (if appropriate) human bone, other ecofactual material, building material, burnt flint, worked flint and stone) to be deposited.

5.8 All excavated artefacts and ecofacts and all other elements of the Site Archive should be delivered by the Archaeological Contractor to the recipient museum as one deposit. Where this arrangement is not practicable lists will be submitted by the Contractor to the recipient museum of objects not deposited, together with

information as to the quantity involved and their current location, reasons why items have not been deposited and a timetable for their ultimate deposition.

5.9 Artefacts and ecofacts deposited by the Archaeological Contractor in the recipient museum must be accompanied by the original drawn, written and photographic Site Archive or by a complete duplicate record thereof.

5.10 In carrying out post-excavation work and analysis, the Archaeological Contractor will liaise with the Local Authority Archaeological Officer and the Sussex Archaeological Society Research Officer – research@sussexpast.co.uk , with a view to ensuring a concordance between type descriptions of artefacts from this site and those employed on other recently excavated sites in the area and those commonly employed elsewhere in Sussex. The reason for such liaison is to ensure against a proliferation of different systems of artefact type descriptions and nomenclature in the area of the relevant site. **NB. The Archaeologist must ascertain whether there will be a charge for other archaeologists' time in undertaking such liaison, and if so to take this charge into account in cost estimates for carrying out the investigation.**

5.11 In cases where the results of field work are considered suitable for publication, consideration will be given first to publication in the **Sussex Archaeological Collections**. The Written Scheme of Investigation should state that this may be the case and allowance made for the costs of publication. **Publication in specialist journals may also be required where the results of the work are considered by the Archaeological Contractor and Local Authority Archaeological Adviser/s to warrant it.**

6.0 Compliance Monitoring

6.1 On behalf of the Local Planning Authority the Local Planning Authority's Archaeological Adviser/s will normally be responsible for

- reporting to the Local Planning Authority the progress and standards of on- site fieldwork,
- for validating the reporting and findings of such fieldwork, and
- for warranting the conformity of working practices with these Standards and with the Written Scheme of Investigation on behalf of the Local Planning Authority.

6.2 A minimum of 5 days' notice before commencement of fieldwork should be given by the Archaeologist to the Local Authority Archaeological Adviser/s.

Appendix 1. Format of the Archaeological Report

1 The report must include, except where otherwise stated in the *Brief*:

- Planning history, in brief, including nature of proposed development, relevant Local Planning Authority, applicant, and planning application reference number (where applicable)
- Function of the report
- Location of site by OS map reference (5 figures easting, 5 figures northing)
- A location plan of the site, with boundary clearly marked, on an OS base map of not less than 1:2500 scale (smaller scale for large sites only), showing Grid North, and tied in to the OS Grid **(Grid lines to be numbered)**
- Plans showing the outlines of trenches / excavated areas in relation to the site boundary
- Plans of trenches / excavated areas showing archaeological contexts recorded therein, at a scale suitable for distinguishing clearly the outlines of recorded contexts, and changes in slope indicated by hachures
- Those parts of archaeological contexts which have been excavated
- For deeper / stratified sites, drawn sections of each trench elevation, with OD levels
- Levels above / below OD at top and bottom of trenches/ excavated areas, at each end / corner of the trench / excavated area
- Site geology
- Archaeological and historical background
- Reproduced extracts of relevant historical maps, with site boundary superimposed and clearly shown (where photocopies cannot be taken, good quality traced extracts should be made)
- Dates of fieldwork - beginning and end
- Fieldwork methodology, archaeological and palaeoenvironmental sampling strategies
- Site Code
- Staff Structure - Project Manager, Site Supervisor(s)
- Name of developer, person or body commissioning the archaeological contractor
- An abstract of the background and findings of the report of about 100-200 words
- Principal author and (at the head of each specialist report) names of contributors to the report
- Stratigraphic report, by excavated area and context
- Finds reports by recognised specialist
- Identification of finds requiring active conservation
- Present location of finds, intended repository of the finds, museum accession number, quantification of archive table
- Palaeo-environmental report - results of palaeo-environmental processing and assessment by recognised specialist
- A list of contexts excavated, arranged numerically, with brief description, nature of artefactual / ecofactual contents, and provisional / final dating
- A list of palaeo-environmental samples taken
- Discussion and Conclusions
- References
- Historic Environment Record summary form

2 The copies of the report approved by the Local Planning Authority **must be in PDF A format and on a CD** accompanied by a selection of illustrative images

which shall be submitted to the HER within six weeks of completion of trial investigation works on site. These images are intended both for record purposes and for dissemination of information to the Local Planning Authorities and to the public (e.g. through presentations and talks). See also hard copy requirements for West Sussex and Chichester in 4.1 above.

3 In the case of complex sites or significant archaeological / architectural features, illustrations in the report and images submitted to the HER will include scenes of excavation works in progress (including close-up pictures of archaeological feature(s) under excavation); more important archaeological features / site sections (in Site terms) both excavated (**with scale**) and, where appropriate, under excavation, and important archaeological finds, both under excavation (where appropriate) and cleaned (**with scale**).

Appendix 2. Palaeo-environmental and Archaeological Science techniques:

Palaeo-environmental sampling and other archaeological science techniques (detailed requirements)

1 Where moderate to abundant archaeological deposits and features are revealed, sampling for a number of categories of environmental remains, including plants, animal bones, fish bones, molluscs and invertebrates will be essential. The potential of the material has to be ascertained through the taking of bulk ('whole earth') samples, each 40 to 60 litres, from a representative cross-section of features and layers of all periods; these should be well dated or datable and well-sealed (not mixed). The selection of these samples will therefore take into account the presence / absence of datable artefacts and the degree of residuality and intrusiveness (e.g. of finds, recent or modern material etc.) within the deposits.

2 All bulk environmental samples will be processed in their entirety during or immediately following excavation, with c 5 litres retained from samples that might repay other forms of processing at a later stage of the project (e.g. for insect analysis). Each sample will be floated, with the flot collected in a mesh of 250 microns, and the residue (heavy fraction) in a 500-micron or 1mm mesh. After drying, the sub-sample flot and residue will be assessed by a specialist to ascertain the degree of preservation, amount, diversity of environmental remains and the potential to address research questions. This will be done using a binocular microscope (no less than x10 magnification) and good lighting. All samples should be removed from the excavation to a secure storage (this could be on site) within 48 hours.

3 In addition to standard bulk samples, certain types of deposit can repay other environmental sampling techniques:

- Where good conditions for the preservation of bone have been identified, all large bones will be collected by hand and sieving of bulk samples up to 100 litres will be undertaken from key contexts, as appropriate.
- In suitable deposits (colluvium, alluvium, ditch fills etc), mollusc samples of 2 litres each will be taken vertically from appropriate sections to investigate the changes of environment and in particular vegetation through time.
- Where waterlogged deposits occur, bulk samples of 10 to 20 litres will be taken vertically from appropriate sections (or 100% of the fill of the feature / deposit, if less than that capacity). Sub-samples of these waterlogged samples must be assessed by suitable specialists for the presence of plants, insects, and other biological indicators.
- Where deposits are likely to have accumulated by natural processes (for example, some ditch and pond fills or alluvial sequences) or otherwise appear to be wet, waterlogged or peaty, monoliths will be taken from cleaned vertical surfaces for the retrieval of pollen, diatoms, ostracods, foraminifera and for tests such as magnetic susceptibility and loss on ignition. Wherever possible such samples should be taken by a geoarchaeologist or the environmental archaeologist, so that the sequence of deposits can be examined and interpreted on-site and the most appropriate location and number of samples identified.

4 All processed samples will be assessed and reported on as part of the fieldwork report. The assessment will estimate the presence of cereal grains, chaff and

weed seeds as well as that of fish and small mammal bones and charcoal (including size ranges), with a quantification of each on a five-point scale and a note of the preservation on a similar point scale (very good to very poor). Results of this assessment will be included in the fieldwork report, together with a description of methodology.

5 The Archaeological Contractor will make appropriate provision for the application of scientific dating techniques such as radiocarbon, dendrochronology, archaeomagnetic dating, OSL and thermoluminescence dating, Provision for other scientific techniques involving specialist advice or/and site visit might also be necessary if remains of ancient metalworking and other industrial activities, waterlogged remains and burials are revealed. The advice of the English Heritage Science Advisor will be sought in advance of the application of these techniques and a specialist visit to the site to examine the remains *in situ* and take samples will be arranged, where appropriate.

6 The Local Authority Archaeological Adviser, in consultation with English Heritage's Science Advisers, wishes to encourage a more systematic approach to palaeo-environmental and other scientific sampling in undertaking archaeological fieldwork of all kinds. The archaeological organisation undertaking the investigation will:

Prior to undertaking fieldwork:

- Appoint a suitably qualified / experienced environmental archaeologist to advise on palaeo-environmental aspects of the project and to devise and supervise the implementation of the environmental sampling strategy;
- Include within the Method Statement/WSI a description of the proposed method of palaeo-environmental sampling, processing and assessment, prepared in consultation with the palaeo-environmental specialist / environmental archaeologist
- Address in the Method Statement/WSI the proposed sampling methods for the types of feature that might be anticipated on the specific site in question and the type of environmental remains that might be targeted. This should not be an exhaustive list but a realistic proposal having considered the background to the site (section 2 of the standards), research objectives and the approach to excavation (section 3), taking into account known / anticipated site, soil conditions and conditions of preservation;
- State clearly in the Method Statement/WSI which samples will be taken on site by specialists rather than excavation staff and under what circumstances specialists in archaeological science might be asked to visit the site to advise and take samples. Again this should not be a generic statement including every eventuality, but should be orientated towards features that might be anticipated on this specific site. (For example, consideration might be given to dating techniques, or/and soils and sediments, burials and grave goods, industrial sites/processes, living/working floors, waterlogged wood and artefacts);
- State clearly in the Method Statement/WSI the processing and proposed post-fieldwork sample assessment strategy and methodology;
- Ensure that site staff are aware of the standard bulk (whole earth) sample size of 40-60 litres or 100% of smaller features;
- Ensure that processing staff are aware that all bulk samples should be processed in their entirety (unless a small amount, c 5 litres, is retained for later processing by different techniques, such as paraffin flotation for

insects), Ensure suitable equipment is available for the flot to be collected on a sieve with mesh size of 250-300 microns, residues to be collected on sieve size of 500 microns - 1mm;

- Arrange with the environmental archaeologist to visit the site during investigation, if archaeological features / deposits are found and arrange how often this will be needed in order to keep track of features exposed;
- Notify the English Heritage Science Adviser for the SE region, (Jane Corcoran, of the date of commencement of investigation (E-mail: jane.corcoran@english-heritage.org.uk) and offer her an opportunity to visit the site during fieldwork, preferably together with the environmental archaeologist;

During fieldwork:

- Manage / organise site visits from the environmental archaeologist and other specialists to advise and collect samples (where applicable);
- Agree and implement on site the sampling strategies;

After fieldwork:

- Update the post-fieldwork strategy and assessment as necessary (this may involve additional resources – See Annex G);
- Agree with the Local Authority Archaeological Adviser any necessary delay in completion of the reporting of the field work to enable results of environmental and other scientific assessments to be included;
- Implement the retention and discard policy recommended by the Sussex Museums Group, with respect to the various categories of environmental remains recovered. [Recommended standards for recording, sampling and retention of specific artefact and ecofact types will follow in 2015].

7 Where applicable the guidance in the following English Heritage papers, relating to archaeological science (which can be downloaded from the weblinks below) will be followed:

ARTEFACTS, MATERIALS AND CONSERVATION

Waterlogged organic artefacts: guidelines on their recovery, analysis and conservation 2012
(https://content.historicengland.org.uk/images-books/publications/waterlogged-organic-artefacts/woa-guidelines.pdf/)

Guidelines on the recording, sampling, conservation, and curation of waterlogged wood 2010
(https://content.historicengland.org.uk/images-books/publications/waterlogged-wood/waterlogged-wood.pdf/)

Archaeometallurgy : Guidelines for Best Practice 2015
(https://historicengland.org.uk/images-books/publications/archaeometallurgy-guidelines-best-practice/)

Archaeological Evidence for Glassworking Guidelines for Best Practice 2011
(https://historicengland.org.uk/images-books/publications/glassworkingguidelines/)

Science for Historic Industries: guidelines for the investigation of 17th- to 19th-century industries 2006

(https://historicengland.org.uk/images-books/publications/science-for-historic-industries/)

Guidelines on the X-radiography of archaeological metalwork 2006 (https://content.historicengland.org.uk/images-books/publications/x-radiography-of-archaeological-metalwork/xradiography.pdf/)

Investigative Conservation:

(https://content.historicengland.org.uk/images-books/publications/investigative-conservation/investigative-conservation.pdf/)

DATING TECHNIQUES

Dendrochronology – guidelines on producing and interpreting dendrochronological dates 1998 (https://content.historicengland.org.uk/images-books/publications/dendrochronology-guidelines/dendrochronology.pdf/)

Archaeomagnetic Dating: Guidelines on producing and interpreting archaeomagnetic dates 2006 (https://content.historicengland.org.uk/images-books/publications/archaeomagnetic-dating-guidelines/archaeomagnetic-dating-guidelines.pdf/)

Luminescence Dating : Guidelines on using luminescence dating in archaeology 2008 (https://content.historicengland.org.uk/images-books/publications/luminescence-dating/luminescencedating.pdf/)

ENVIRONMENTAL TECHNIQUES

Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation 2011

Guidelines for the curation of macroscopic plant and invertebrate remains 2008 (https://content.historicengland.org.uk/images-books/publications/curation-of-waterlogged-macroscopic-plant-and-invertebrate-remains/waterloggedremains.pdf/)

Human bones from Archaeological Sites: Guidelines for Producing Assessment Documents and Analytical Reports 2004 (https://content.historicengland.org.uk/images-books/publications/human-bones-from-archaeological-sites/humanbones2004.pdf/)

Guidance for Best Practice for Treatment of Human Remains Excavated from Christian Burial Grounds in England (second edition) 2017 (http://www.archaeologyuk.org/apabe/pdf/APABE_ToHREfCBG_FINAL_WEB.pdf)

Science and the Dead: a guideline for the destructive sampling of archaeological human remains for scientific analysis 2013 (http://www.archaeologyuk.org/apabe/pdf/Science_and_the_Dead.pdf)

Geoarchaeology: using earth sciences to understand the archaeological record 2007 (https://content.historicengland.org.uk/images-books/publications/geoarchaeology-earth-sciences-to-understand-archaeological-record/heag067-geoarchaeology.pdf/)

Animal bones and archaeology: guidelines for best practice 2014 (https://content.historicengland.org.uk/images-books/publications/animal-bones-and-archaeology/animal-bones-and-archaeology.pdf/)

OTHER

Piling and Archaeology: An English Heritage Guidance Note (revised 2015) (https://content.historicengland.org.uk/images-books/publications/piling-and-archaeology/heag031-piling-and-archaeology.pdf/)

Geophysical survey in archaeological field evaluation 2008 (http://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf)

LiDAR: The light fantastic: Using airborne laser scanning in archaeological survey 2010 (https://content.historicengland.org.uk/images-books/publications/light-fantastic/light-fantastic.pdf/)

3D Laser Scanning for Heritage: advice and guidance to users on laser scanning in archaeology and architecture 2011 (http://content.historicengland.org.uk/images-books/publications/3d-laser-scanning-heritage2/3D_Laser_Scanning_final_low-res.pdf/)

Moats, Ponds and Ornamental Lakes in the Historic Environment 2011 (https://content.historicengland.org.uk/images-books/publications/moats-ponds-ornamental-lakes-historic-environ/moats-ponds-ornamental-lakes-historic-environment.pdf/)

ANNEX A: Desk-based assessments (DBA)

1. Desk-based assessments (DBAs) will include the pre-fieldwork requirements set out in the *Standards* above, Sections 2.2.1 to 2.2.12.

2. The DBA should be undertaken in accordance with Chartered Institute for Archaeologists (CIfA) guidance and based on up-to-date HER data, sourced directly from the relevant HER. Heritage Gateway cannot be used as the source for core data used in a DBA.

3. Geotechnical site investigation information should normally be included within the DBA report. This might be tabulated, but is better shown as a simple series of cross sections drawn across the site, showing the distribution and thickness of natural, potentially archaeological and modern made ground deposits. This is applicable to all sites but in particular can be useful in floodplains and wetland areas where archaeology might lie within a deep alluvial sequence; in areas of deep urban stratigraphy; and in areas of Palaeolithic potential, where archaeological remains are likely to lie within a sequence of natural Quaternary deposits. In these cases it can often be informative to include a more elaborate geo-archaeological deposit model as part of a desk based assessment, to identify areas of a site where archaeology might most likely be found (see Annex E).

4. The DBA will include reference to national planning guidance or legislation, Local Plan policies relevant to archaeological issues and to the development site, and the planning history of the development site to date.

5. The DBA will include a map regression exercise, reproducing copies of extracts of relevant historical maps at similar scales, showing clearly the site boundaries, and setting the maps out, clearly labelled, in chronological order from past to present.

6. Areas of archaeological potential on the site should be assessed including the type, likely depth, nature and depth of remains, variations in their estimated quantity and quality across the site. The topography of the site should be described and shown on plan. The academic and research potential of the remains should also be assessed in both the local and national context, and their local, regional or national importance.

7. The DBA will include an assessment of the degree of disturbance or destruction caused by erection of previous buildings, structures, or recorded ground excavations. Such disturbance may include basements, foundations, inspection pits, slab thickness, services, quarrying, etc..

8. Estimated boundaries of areas of potential archaeological survival and areas considered to have been destroyed on the site should be indicated on an OS plan of an appropriate scale.

9. The impact of development proposals should be assessed, with reference to architects', engineers' and planning application/ project proposal drawings, as appropriate. Areas of proposed ground disturbance should be clearly indicated in plan and in section, where known.

10. Proposals and recommendations for further assessment or fieldwork, including where appropriate archaeological intervention, should be shown on a scaled plan

in order to assess the survival, condition and nature of any monument or remains which are considered to survive on the site or in its immediate vicinity.

11. Where detailed information is available on the character and quality of archaeological remains on the site, the DBA should include suggestions as to how development proposals could be designed to minimise disturbance to surviving archaeological remains, e.g. through minimally-intrusive foundations designed to cause minimal damage to a surviving monument or archaeological remains, and not damage their integrity.

12. Areas where preservation *in situ* is to be achieved should be clearly marked. This should be accompanied by a method statement outlining details of safeguarding and preservation.

13. Draft versions of the DBA will be discussed with the Local Authority Archaeological Adviser/s and before the DBA is submitted with a planning application to ensure there is sufficient and correct information to inform a planning decision.

ANNEX B : Written Schemes of Investigation Requirements

A written scheme of investigation (WSI) is a commitment between the developer and the local planning authority (LPA) to carry out a programme of archaeological work required to fulfil either a planning condition or assess a site / building prior to an application being made. They are also important documents informing the onsite archaeologist of the site's archaeological interest, as well as the recording and sampling strategy agreed.

Should an investigation identify archaeological interest meriting preservation or further investigation and recording, then a further WSI or addendum to the existing WSI will be required.

A WSI is a method statement that is intended to ensure suitable industry standards. Approval of a WSI that does not meet these standards will not be recommended. As a minimum the WSI should include:

FRONT COVER / FIRST PAGE

To include:

- Correct site name, grid reference, site code, and (where relevant) planning reference number
- Author and company name and address
- Date and version number

INTRODUCTION

To include:

- Site location, grid reference
- Site description, geology topography
- Planning background / project background, with planning consent reference (when relevant) and condition reference the archaeological work relates to.
- Confirmation a brief or guidance was issued by the LPA archaeological advisor
- Confirmation all work will adhere to national and local archaeological standards.
- Confirmation of project time table, project manager, site supervisor, post excavation manager.

ARCHAEOLOGICAL BACKGROUND

To include:

- The results of an up to date Historic Environment Record search, or summary of the results of an up to date desk based assessment; relating specifically to the site, but when relevant providing a summary of the wider archaeological interest of the area.
- Summary of any recent archaeological research or investigation within the site, or when relevant work within close proximity
- When relevant, a range of historic maps and documentary sources

AIMS AND OBJECTIVES

To include:

- Commitment to sample and record any remains to the required archaeological standard and publication route
- Site specific archaeological potential and research agenda
- Potential for informing wider archaeological research frameworks e.g. South East Research Framework.
- Opportunities consider for community engagement

METHODOLOGY

To confirm the methodology for excavation, sampling and recording in line with industry standards and Section 3 of Sussex Archaeological Standards. However the methodology should be specific to the research aims and proposed impact of the development

To include:

- For a watching brief or building recording - Description of all groundworks (including a location plan) and internal building works that will be monitored
- For evaluation and open area excavation – Description and plan of location and extent, including confirmation of contingency to expand these areas following discussion with the LPA archaeological advisor
- Confirmation of methodology for ground reduction to be used for excavation e.g. tracked mechanical excavator fitted with a toothless ditching bucket under the direct supervision of an archaeologist
- Confirmation of health and safety strategy for excavating i.e. all depths, including shallower ones, are to be assessed for stability, trenches will be suitably fenced off when staff are not on site.
- Confirmation of sampling strategy (including environmental) as per Sussex Archaeological Standards and national industry standards, including site specific requirements identified in aims and objectives.
- A Selection Strategy (see CiFA : The Selection Toolkit for Archaeological Archives) must be outlined in the WSI to include treatment of post 1900

artefacts. The Strategy must include confirmation of contingency to expand sampling of features following discussion with the LPA archaeological advisor
- Confirmation of surveying methodology
- Statements regarding human remains and treasure
- If appropriate, provision for the preparation of frequent (period as agreed) bulletins of key results supported by up – to – date site plans and spot dating.
- Confirmation of liaison with LPA archaeological advisor regarding all the above and timetable for monitoring inspections / site sign off
- outline the requirement for an addendum to an evaluation WSI detailing further archaeological excavation (e.g. Strip Map and Sample) should further phase of site investigation prove necessary (following evaluation)

RECORDING AND ANALYSIS

To confirm the recording methodology in line with industry standards and Section 3, Annexes B, C, D, E, F and G of Sussex Archaeological Standards

To include:

- Confirmation of provision for scientific analysis and dating
- Confirmation of provision for assessment of conservation needs and appropriate conservation of significant metal and other finds

POST-EXCAVATION METHODOLOGY AND REPORTING

The completion of site work shall be confirmed in writing to the Local Planning Authority Archaeologist within **10 working days** (or period as agreed) along with a brief written summary of the findings of the fieldwork, together with plans showing the site location, any revealed archaeological features and / or relevant standing structures.

To confirm analysis in line with industry standards and Annex H of Sussex Archaeological Standards. To confirm report formatting in line with Management of Research Projects in the Historic Environment (Historic England 2015) and Section 4 and Appendix 1 of Sussex Archaeological Standards
To include:

- Confirmation of cleaning, labelling, sorting and analysis of finds in line with industry standards
- Confirmation of provision for conservation of finds, including consultation with the recipient museum
- Confirmation of specialists to be used
- Confirmation of reporting time frame and publication route, including agreement with LPA archaeological advisor on publication of significant finds

ARCHIVE

- Confirmation of collecting museum / archive that has agreed to store the archive, including accession number; or if museum not available confirmation that the archive will be signed over to and stored by the archaeological contractor until a suitable store is identified. Including where possible a time frame for deposition of the archive.
- Confirmation of dissemination of report, including submission to HER as per Annex I of Sussex Archaeological Standards, including GIS shapefiles when required. If the archaeological contractor is required, contractually, to only submit reports directly to the developer or their agent, the archaeological contractor must inform the LPA Archaeological Officer in writing that they have completed the report and to whom it has been forwarded to. The archaeological contractor must ensure that the developer is made aware of the need to submit the report to the LPA to request discharge of the archaeological condition.

HEALTH AND SAFETY & INSURANCE

We would expect all fieldwork to satisfy health and safety regulations and appropriate insurance.

REFERENCE SECTION

Detailing all relevant source material and industry guidelines

ILLUSTRATIONS

To include:

- Legible site location map
- Legible scale plan of proposed development
- Legible scale plan showing services / utilities (when relevant), or other constraint e.g. TPOs

Legible scale plan showing areas of proposed archaeological investigation i.e. watching brief area, trench location, or internal targets for historic building recording

ANNEX C: Trial archaeological evaluation excavation (principally undertaken prior to the determination of a planning application – these criteria and standard requirements may also apply to Stage 1 recording post determination of a planning application)

1. Initial excavation will, unless otherwise specified, be carried out by mechanical excavator. For this purpose a mechanical excavator equipped with a wide (e.g. 1.8m metre) toothless ditching bucket will be used. Trenches should be excavated to a full width of 1.8m unless otherwise agreed with the Local Authority Archaeological Adviser.

2. Mechanical excavation will be carried down in all trenches to the surface of geological solid or superficial deposits, or to the top of surviving archaeological deposits (whichever shall be uppermost). Any cut features (e.g. ditches or pits) or structures encountered should be recorded in plan and manually excavated before proceeding with further excavation. If some trenches need to be excavated throughout to a depth at which the sides of the trench are considered unstable, to reach the natural subsoil/ archaeological deposits, the sides of trenches must first be either shored, battered or "stepped back" to allow safe working.

3. All relevant trench sections drawn must be drawn where archaeological deposits and features have been identified and recorded, with levels related to the Ordnance Datum. For trenches with only a topsoil/subsoil profile and no archaeological features a representative section should be recorded with a record of the height of each key horizon at either end of the trench as well as the ground surface and maximum depths of the trench and these converted to OD heights.

4. In trenches where worked flint artefacts are recorded, hand cleaning and excavation will be undertaken to be determine the context for the flints and the presence of any associated material (for details see Annex E: Standards for excavation and recording of lithics scatters).

5. Trenches should not be backfilled until the Local Authority Archaeological Adviser has given their direct written or verbal approval. Exceptions for reasons of health and safety or similar requirements should be communicated immediately to him/her.

6. A proportion of archaeological features, structures and deposits exposed within the trial trenches shall be partially excavated by the Archaeological Contractor by hand. Partial excavation will be defined as follows:

    - All linear features will be sampled, using a minimum 1-metre wide section
    - Sampling of linear features to be at 10-metre intervals or totalling 10% of the length of the linear cut feature (whichever is the greater
    - All discrete features will be half sectioned until sufficiently characterised. Once this has been achieved a lower sample of cut features may be considered appropriate subject to agreement with the Archaeological Adviser. Undated features should be rapidly fully excavated for finds retrieval
    - Where three or fewer pits or probable pits, whether or not evidently datable or ancient (excepting evidently modern features), occur in any trench, all those features will be sampled
    - Priority is to be given to features with more charcoal-rich fills or anticipated dating evidence

- Should five or fewer archaeological features of any kind, discrete or linear, be revealed within any one trench, all those features will be sampled
- Where two or fewer buried pottery vessels are present, buried upright or inverted, both should be lifted and removed from site;
- If such vessels are believed to be human cremation burials (e.g. because of visible remains of burnt / cremated bone in their contents), a Licence from the Ministry of Justice, permitting their removal, must first be obtained
- Other probable cremation vessels or unburnt human remains should be left *in situ* after recording their visible portions

7. Contingency sampling:

    - The proportion of features to be sampled within any trench, and the necessity of extensions to or additional trenching, may be increased at the reasonable request of the Local Authority Archaeological Adviser. In the case of features within a trench this could be up to a maximum of 100% (i.e. sampling all the features in a trench, rather than sampling only half of them), in exceptional cases, e.g. should they feel that insufficient of a complex of features has been examined to allow viable provisional interpretation or dating of the whole
    - However if the trench contains a large number of features, it will not usually be considered appropriate to sample all such features
    - The percentage of any one feature to be sampled may need to be so increased, for similar purposes, particularly for linear features, or to enable dating evidence to be obtained for a critical discrete feature such as a post-hole forming part of a wider complex of structures.

8. On sites with complex stratigraphy, one or more sondages or keyhole excavations shall be cut into the deeper stratigraphy. They shall be excavated by hand, and down to the natural subsoil, unless otherwise stated; and be of sufficient size to determine the depth of archaeological stratigraphy. It may be possible in some cases to reach these deeper deposits through excavation of later intrusions.

9. Particular care should be taken by the Archaeological Contractor not to damage any areas containing significant remains of potential national importance which might merit preservation *in situ*. Such remains are normally considered to include deep or complex ancient stratified archaeological layers and features; or rare, unusual or exceptionally well-preserved ancient archaeological structures, deposits, or collections of artefacts. Such areas should be protected and not left open to the weather, or other forms of deterioration. While archaeological investigation should not in general terms be carried out at the expense of the preservation *in situ* of archaeological structures, deposits, or features, it will be important to ensure that a sufficient sample of these is investigated to assess their character and quality. The presence, character and quality of environmental remains on a site will need evaluation. This will help the design of an environmental sampling methodology for any further stage of excavation, as well as provide information that will help interpret the site should no further fieldwork take place. A selection of features investigated during the evaluation should be sampled, processed and assessed as set out in the relevant sections of Appendix 2.

10. The Archaeological Contractor should notify archaeological features or deposits worthy of preservation *in situ* to the Local Planning Authority, via the Local Authority Archaeological Adviser, at the earliest opportunity.

11. In excavating a sample of archaeological features in any one trench the Archaeological Contractor shall take heed of and comply with the Local Planning Authority's reasonable request within the scope and time scale of the investigation to carry out small-scale additional investigation.

12. Where there is a high density of archaeological features exposed in any individual trench, the Local Planning Authority's Archaeological Adviser/s may at their discretion advise the Archaeological Contractor that the full requisite sample of features to be excavated may be reduced. This may apply with the proviso that the purpose of the evaluation can be achieved in full, that is to inform the determination stage of the planning application process and enable a decision to be made on an appropriate level of preservation or mitigation of impact.

13. Unless otherwise advised by the developer, excavated trenches shall be backfilled by the Archaeological Contractor following completion of excavation with spoil derived from those trenches. Spoil shall be deposited and compacted as best as may be managed by machine and the surface of the fill left flush with the surrounding ground surface. No open cavities should be left from incomplete backfilling, especially around the edges of the trench. The quality of backfilling of the trenches must be inspected and approved by the Site Supervisor to the standard above mentioned prior to the Archaeological Contractor vacating the site.

14. Trenches containing archaeological features or deposits should not be backfilled by the Archaeological Contractor until the requirements set out above have been complied with.

ANNEX D: archaeological monitoring and recording exercise (watching brief)

1. Works of ground excavation carried out by the developer on site in connection with proposed development (e.g. for new buildings / structures / services / landscaping) shall be carried out only in the presence of an Archaeological Contractor (the Monitoring Archaeologist(s)).

2. In case important archaeological remains come to light during the course of groundworks which require more than a brief record (i.e. more than four hours' continuous recording for one person in that area), provision for additional investigation and recording should be made by the developer:
   - Additional staff and time up to a maximum figure (persons per day) to be advised by the Local Authority's Archaeological Adviser
   - Up to a specified number of days' recording on part or parts of the site, free of disturbance from building works (as far as is reasonably practicable)
   - The Local Authority's Archaeological Adviser can determine on site whether such a contingency is applicable, should significant archaeological remains be uncovered.

3. Areas required for additional investigation and recording, if appropriate, shall be agreed on site by the developer, the Local Authority's Archaeological Adviser and the Monitoring Archaeologist. Such areas should not preclude the developer's essential access requirements, and shall fit in as far as is reasonably practicable with the applicant's work programme.

4. The strategy for excavation sampling and palaeo-environmental sampling during watching briefs will normally be the same as for comprehensive archaeological excavation.

5. The developer or developer's building contractor shall:

5.1 Allow the Monitoring Archaeologist(s) at all reasonable times sufficient time, facilities and access to identify, clean, record and investigate archaeological features, deposits and structures on relevant parts of the Site, subject to Health and Safety considerations and to the requirements of the WSI.

5.2 Not carry out mechanical excavation of building trenches, mains services or other ground reduction involving the stripping of topsoil or bedrock in connection with the planning permission unless the Monitoring Archaeologist is present, except where such ground excavation will involve excavation only of exposed clean natural bedrock.

5.3 Provide for mechanical excavation being archaeologically monitored to be undertaken only by a flat-bladed bucket to ensure a clean finish for inspection. The use of bulldozers, box scrapers or tooth buckets is not acceptable during archaeological monitoring work.

6. In observing ground excavations on the site the Monitoring Archaeologist shall:

6.1 Inform the developer's building contractor as soon as reasonably possible where he / she believes that archaeological features, deposits or structures have been exposed during the course of ground excavations on the Site, that will require identification, cleaning, investigation and recording.

6.2 Consistent with the requirements of these Standard and with the WSI for Archaeological Investigation, carry out necessary identification, cleaning, recording and investigation with due consideration to the developer's work programme and with regard to their desire to proceed with ground excavations and other building works without undue delay.

7. The Monitoring Archaeologist shall inform the Local Authority's Archaeological Adviser/s by email of completion of monitoring and recording work on the site within three calendar days of such completion.

8. Reporting of watching briefs will follow the details set out above in Section 4 and Appendix 1 unless otherwise agreed in writing with the relevant Local Planning Authority and/or the Local Authority's Archaeological Adviser/s.

ANNEX E: Comprehensive archaeological excavation (and 'Stage 2' where Stage 1 investigation/evaluation has already been undertaken)

1. The standards set out in Annex A above will all be complied with, as a minimum.

2. In addition:

- All archaeological features on the site will be comprehensively excavated by hand.
- "Comprehensive" excavation will normally involve (as a minimum):

□□ excavation by hand of sections across all junctions or intersections of cut features;

□□ excavation by hand of 1 metre to 2 metre-wide sections through linear cut *datable* and *ancient* features, and linear features manifestly rich in ancient palaeo-environmental remains, at 10-metre intervals or up to a total of 25% of the length of the linear cut feature (whichever is the greater) with sampling of termini of linear features;

□□ complete excavation (100%) of all discrete *datable* and significant cut features of less than two sq. metres plan area, and discrete features manifestly rich in artefacts and/or ancient palaeo-environmental remains. Excavation may involve more rapid collection of all artefacts and samples from the second half of discrete features by context or spit where appropriate and following standard recoding of the section and first 50% of the feature;

□□ complete (100%) excavation of all post holes, hearths, beam slots, ring gullies, pits internal to structures, where part of a structure;

□□ complete (100%) excavation of the ditches of small mortuary enclosures of less than 25 sq. m enclosed area, with a sliding scale of reduced sampling of larger enclosures;

□□ 100% excavation of graves and pits containing urned or unurned burial remains (cremation urns to be lifted wherever practicable for micro-excavation in laboratory environment), and pits or immediate environments of structured/ placed deposits;

□□ Discrete cut features containing "special" deposits or finds of locally/ nationally unusual character or date will normally be completely excavated

□□ On sites with complex stratigraphy, all horizontal deposits will be recorded and removed by hand, using heavy or small tools as appropriate, down to the natural subsoil, unless otherwise stated.

□□ Any variations to these sampling levels will be agreed in writing the Local Authority's Archaeological Adviser/s

3. Where comprehensive archaeological excavation is undertaken, a post-fieldwork assessment will normally be required (see Annexe G).

4. The strategy for palaeo-environmental sampling on comprehensive archaeological excavations will usually depend on the results of trial investigation and the minimum requirements will be in accordance with Appendix 2. The level of analysis of the samples will be identified in the post-fieldwork assessment.

ANNEX F: Excavation and Recording of Lithic Artefact Scatters

Overview

1 Lithic artefacts form an important component of prehistoric archaeology, they are highly durable and informative behavioural elements of the archaeological record and can be found in a wide range of geological/sedimentary and surface contexts from the Pleistocene and Early Holocene time periods. Therefore they provide a widespread record of human behaviour through much of human prehistory, often providing the only behavioural record of past human cultures and extinct human species. While accepted national guidance exists for the management and investigation of surface lithic scatters such as might be encountered in ploughsoil (English Heritage 2000), and standard assessment methodologies for deep Palaeolithic potential within fluvial gravels have generally been adopted regionally, there is currently no nationally accepted guidance for the assessment, investigation and recording of lithic artefacts across all sedimentary contexts.

2 While in south east England the majority of lithic artefacts are manufactured on flint, other raw materials are found (e.g. chert, quartzite). Lithic artefacts consist predominately of flakes, blades and bladelets produced during the production of tools (waste flakes or debitage), the blanks from which they were removed (cores, tool roughouts) the formal tools and utilised pieces as well as other items such as hammer-stones and anvils/querns.

3 Assessing the importance of even a single artefact requires careful consideration of age, context and condition; technological or typological features alone are not adequate factors when considered in isolation. Interpreting the significance of lithic artefact scatters, from diffuse spreads of material to large or dense accumulations, requires very close attention to palaeolandscape situation, sedimentary context and the application of detailed post-excavation analysis. Consequently the prime consideration in the field should be on how best to record the position and context of lithic artefacts encountered at an appropriate level for their possible significance. While overall interpretation of lithic material can only be made after excavation, careful assessment and evaluation can go a long way in determining the likely parameters of the material in terms of age, degree of preservation and importance at local, regional and national scales.

4 Therefore, where a site with abundant or potentially important lithic artefacts is anticipated or encountered, it is important that both a lithic technology specialist and a geoarchaeologist should be included as part of the project team to develop and implement an evaluation or mitigation strategy. They should be either based on-site permanently or on a regular daily basis to develop and oversee an appropriate recording strategy. Additional advice from an environmental archaeologist may also be necessary.

Site Assessment/Evaluation

5 The possibility of sedimentary or surface contexts containing prehistoric lithic artefacts should be considered at the outset, both in relation to the development of an Environmental Impact Assessment and in the formulation of an initial field evaluation strategy.

6 The site should be considered first in geoarchaeological terms as comprising a series of sedimentary contexts within a palaeolandscape that forms the basic unit of analysis for the Palaeolithic and early Holocene periods. Each sedimentary

context should be considered in terms of their likely age and significance, their potential to preserve lithic artefacts and the nature of the proposed development impact upon them. Consideration should be given to the likelihood of lithic material being found in primary context (i.e. with a sedimentary context of the same age as their manufacture, use and discard), in secondary context (reworked or derived by sedimentary processes subsequent to their manufacture, use and discard) and the degree to which the agents of sedimentary deposition may have altered, sorted or disturbed the original arrangement of lithic artefacts (resolution).

7 Seven types of geomorphological context are considered as useful to consider here: Surface, Feature, Slope, Valley bottom, Coastal platform, Plateau surface and Karstic. The presence, occurrence and inter-relationship of each needs to be determined across the site, in addition to the likely age range and the resolution of the archaeology preserved within them. Archaeological resolution is used here as a term to describe the degree to which the site may preserve a detailed record of past human behaviour and consequently requiring an appropriately detailed recording methodology.

Each sedimentary type is listed in the table below:

Geomorphological Context	**Sediment type**	**Sediment type**	**Age of Deposits as Commonly Encountered in SE England**	**Archaeological Resolution**
Surface		Ploughsoil, Topsoil, Made Ground	Holocene	Medium -Low
Feature		Ditch, Pit, Post Hole etc.	Holocene – Late Pleistocene	High - Low
Slope	Head/Colluvium	Colluvium, Gellifluction Deposits, Brickearth.	Holocene – Middle Pleistocene	High - Low
Valley bottom	Fluvial and lacustrine	Coarse (sands and gravels), Fine (silts and clays).	Holocene – Early Pleistocene	High - Low
Coastal platform	Shallow marine	Coarse (sands and gravels), Fine (silts and clays).	Holocene – Middle Pleistocene	High - Low
Plateau surface and slopes	Aeolian	Coversands, Loess	Holocene – Middle Pleistocene	High- Medium
Karstic	Caves, dolines and rockshelters	Cave sediments, fills of solution and structural features, tufa and travertine.	Holocene – Early Pleistocene	High - Low

8 Evaluation of a site should aim to sample all sedimentary contexts which have been determined to be present within the development area. They should be sampled to at least the depth of development impact. Impact should be considered in terms of not only physical destruction of sediments and material/features within them but also in terms of the effects of geochemical modification and dewatering. In order to understand geoarchaeological contexts correctly it may be necessary to investigate to the base of the Quaternary sequence or beyond the limits of the development area.

9 Standard evaluation trenches will rarely be adequate in isolation to achieve a full assessment of potential unless it can be conclusively proven that surface deposits overlie only pre-Quaternary geology across the whole site. More commonly geoarchaeological trial pits and/or long sections, stepped trenches (*Sondage Profond*) will be needed to determine if deeper sedimentary contexts underlie the site with potential to preserve lithic artefacts and associated archaeological material/features. The scale and scope of these geoarchaeological interventions will be determined through discussions between the curatorial archaeologist, geoarchaeologist and lithic specialist. These interventions should be placed at intervals adequate to investigate the full range and relationship of sedimentary contexts underlying the site and they should purposively sample for the presence of lithic artefacts e.g, through sieving for artefacts (including microdebitage) or through hand excavation of sediments considered to have potential for high resolution archaeological signatures.

10 The evaluation report will describe any lithic artefacts recovered specifically in terms of sedimentary context, sedimentary history, age, and resolution in addition to statements about raw material, technology and typology. The evaluation report should contain a self-critical assessment of the limitations of the study and the impact these limitations may have had on the interpretation of the archaeological material and sedimentary context.

Dealing with High Resolution Signatures: Suspected primary context *In Situ* Lithic Scatters

11 Whether lithic artefacts are preserved in primary context on indeed *in situ* can often only be determined after post-excavation analysis. Consequently where lithic artefacts with the potential for a high-resolution archaeological signature are encountered, a record should be made which allows for this analysis and preserves the maximum information regarding their position and context.

12 Potential high-resolution signatures need to be defined spatially in three dimensions to determine the limits of the scatter within the area of investigation. Sites should be gridded to at least 1m resolution.

13 All lithic artefacts over an agreed size should be recorded three dimensionally by survey using a total station or GPS. This agreed size might be as small as 5mm Maximum Linear Dimension (MLD) for a site where microlith manufacture is prevalent, or as high as 30mm for a Neolithic axe production site. Generally 10mm or 20mm are appropriate for X,Y,Z recording. All lithic artefacts recorded in this manner will be individually bagged and recorded as small finds. Tools/tool fragments less than the agreed MLD can also be recorded in this manner as considered appropriate, for example where microlith fragments or micro-burins are identified.

14 Where lithic artefacts have a definite long axis (defined by maximum length of the artefact being at least twice that of the maximum width), the orientation of the artefacts long axis to north should be recorded. The proximal end of the artefacts should be taken to indicate the direction of orientation. An artefact with a proximal end pointing to the north east would have an orientation of 45 degrees. An artefact with a proximal end pointing to the south west would have an orientation of 225 degrees. Where a lithic artefact is not resting flat on or within a sediment body, the degree to which it dips should be measured with an inclinometer. An artefact encountered on its edge within a sediment body would have a dip of 90

degrees. Unless encountered directly on end or on edge the surface of the artefacts which faced uppermost at discovery (ventral or dorsal) should be recorded.

15 Non-tool fragments of less than the agreed MLD (which can be referred to as small debitage) should be bagged according to an appropriate spatial recording system consistent with context. With potentially high resolution sites this should be no coarser than to within a spatially defined spit within a site grid square.

Dealing with Medium-Low Resolution Signatures: Lithic artefacts suspected as being disturbed or within a secondary context

16 If after initial assessment by a geoarchaeologist and lithic specialist it is considered highly likely that the lithic artefacts encountered are preserved within a secondary context or otherwise disturbed, the necessity to undertake three dimensional recording can reasonably be dispensed with in most cases.

17 Scatters, where disturbed or distributed within a sediment body are unlikely to yield high resolution archaeological signatures, should still be recorded to the nearest metre square or discrete context (e.g. feature fill). Consequently any area excavation where lithics are found within the sediment body under excavation should be gridded, generally to at least 1m square resolution. A decision can then be made whether to investigate the sediment body in it's entirely or to excavate a sample of 1m squares (e.g. as an alternate, chequer board arrangement).

18 Excavation of sediment bodies containing lithic artefacts in suspected secondary context should be excavated in spits of appropriate but consistent depths dependent on the intensity of lithic material. Spits will generally be in the order of 0.05-0.1m but may reduce in thickness under exceptional circumstances. It is important to survey in the height of each new spit within each metre square as a check on possible errors or inconsistencies.

19 A decision should be made on the size cut off for collection. For example a policy of total collection of all identifiable lithic artefacts could be made, but it might be considered practical to collect only those over 10mm and to take samples of sediment for bulk sieving to achieve a representation sample of smaller debitage.

20 Every attempt should be made to keep excavation and collection/sampling methodologies consistent across the site and during the excavation process. If methodology is changed during the course of an excavation the implications for consistent assessment of the site should be carefully considered and an explicit record of the reason and the nature of the change in methodology made.

21 Flints can work their way down a soil profile to a considerable degree and can in areas of peat formation be dragged upwards into the peat. Such flints still belong to a scatter even if they now occur in three or more geoarchaeological contexts.

Sediment Sampling

22 The level of sampling will be dependent on the nature of the sediment body and the character of the lithic artefact scatters encountered. This will vary between no or very perfunctory sampling where lithic artefacts are encountered in a surface deposit through to 100% sampling by grid square/spit for the densest self-contained scatters or within features. Bulk samples may be taken primarily for

artefact recovery and these will not be put through flotation. But secondary samples from each context should also be retained for full flotation. The level of such sampling will be determined in the field dependent on the quality of preserved environmental remains.

Dating Considerations

23 Dating of lithic artefact scatters can be problematic but every effort should be made to obtain datable material from each sedimentary context preserving lithic artefacts or to date the sediment body itself.

24 Specialist advice will be sought for applicable dating methods. Arrangements will be made for dating specialists to visit the site to and assess the potential for dating techniques through consultation with the geoarchaeologist and other relevant specialists.

25 Dates should be obtained for sediment bodies preserving lithic artefacts. Silts and sand deposits associated with a flint scatter may be suitable for OSL. Sampling of organic sediments or soil horizons (e.g. peat) associated with lithic artefact scatters may also yield radiocarbon dates. For Early or Middle Pleistocene contexts palaeo-magnetic dating techniques might be considered.

26 Dates may be directly obtained for burnt lithic artefacts through Thermoluminescence or associated organic ecofacts or artefacts might be directly dated by radiocarbon techniques.

Features Associated with Lithic Artefact Scatters

27 If cut (e.g. pits) or positive (e.g. hearths) features are shown to be present on or during the removal of lithic-bearing deposits, then these will require investigation. Initially, the area will then be extended by removal of the lithic-bearing deposit(s) from adjacent squares so as to expose and define the features. It will be the intention to reveal any features or feature-complexes in their entirety, if possible. For example, a structure, such as a building with a hearth, would be exposed and excavated as a discrete entity. Pre-excavation photographs will be taken using both digital and analogue cameras, and any feature complexes will be photographed from overhead.

28 The features will be 100% excavated by context in spits of between 0.02-0.05m. At least one section will be drawn and photographed to record the stratigraphic sequence of deposits within the feature. Normally, the feature will be excavated in two halves or by quadrants, with half the deposit being removed, the section(s) recorded, and the remainder of the deposit excavated. However, if complex elements such as *in situ* hearths are found within features, consideration will be given to excavating these in plan.

29 Any finds within the features will be given a unique identifying number and recorded in three dimensions. The spoil generated by excavation will be collected by context and intervention, although in certain circumstances it may also be appropriate to differentiate the arisings from individual spits. These samples will be wet sieved through a fine mesh for retrieval of finds and environmental remains.

Annex G: Metal detector survey

1.0 The specific aims and objectives of a metal detecting survey are:
A) To recover and record all metal items of archaeological and historical importance that would otherwise be destroyed by the development.
B) To inform the placing of evaluation trenches by identifying possible settlement and activity sites within the development area.

2.0 Method Statement

2.1 The archaeological work will be carried out in accordance with the Chartered Institute for Archaeologists' *Code of Conduct* (December 2014) and *Standard and Guidance for an Archaeological Excavation* (2014); the *Sussex Archaeological Standards* (2017); and the *Treasure Act* (1996).
2.2 The survey will be carried out by an ESCC and Portable Antiquity Scheme registered local metal detecting group under the supervision of the archaeological contractor. Each volunteer will be required to complete the following disclaimer "I also confirm that I have no personal interest in any finds that I recover during my work at the site and acknowledge that all such finds belong to the landowner."
2.3 The survey will be carried out in a methodical manner to ensure that the entire area of the development has been covered. The make and model of each detector used will be recorded for the site archive records. After the recovery of an artefact any hole made shall be filled in and any turf reinstated. The size of any holes excavated will be kept to a minimum to enable the safe recovery of the artefact.
2.4 If it is clear that an archaeological deposit is being disturbed, or if the artefact is associated with other artefacts, excavation will cease and advice will be taken before attempting any further recovery. This may involve the excavation of a larger test pit to confirm the context of the artefact prior to its recovery.
2.5 Each artefact will be allocated an individual unique reference number. It will be entered onto the Metal Detecting Record Form (Appendix 1), along with its NGR and a record of the depth at which it was found. The record form will also record the finder, the field in which it was found and a brief description of the artefact. Each artefact will be individually bagged, with the reference number, site code and NGR written on the bag. Any non-metallic artefacts found during the survey will be recorded in the same manner.
2.6 Each artefact will be located using GPS to provide an accurate NGR location. This information will be fed into an excel spreadsheet which will form the basis for a database of the artefacts recovered during the survey, and will form part of the archive.
2.7 The Client shall give the archaeological contractor safe access to the site to undertake the survey, and will provide information regarding access and any existing services.

3.0 Post-survey Analysis and Report

3.1 All artefacts will be appropriately cleaned and packaged in accordance with current guidance. They are to be suitably bagged, boxed and marked in accordance with the *United Kingdom Institute for Conservation, Conservation Guidelines No 2* and on completion of the archaeological post-excavation programme the Client will arrange for them to be deposited in the agreed museum store.
3.2 Each artefact will be identified by an appropriate specialist and the identification added to the spreadsheet. Iron artefacts may be submitted for X-ray to aid identification, and provision should be made for XRF analysis of any important metal artefacts to aid their identification and analysis. An interim report summarising

the results of the metal detecting survey will be published within 90 days of the completion of the survey. The report will include distribution plots of the artefacts.
3.3 Any artefacts of local or national significance will be reported to the County Archaeologist at the earliest opportunity. All finds that fall under the definition of the *Treasure Act* will be reported to the Coroner's Office and to the Sussex Finds Liaison Officer.
3.4 The site archive will be created in accordance with the requirements of the Recommended Standards, and will be deposited at the agreed museum store or such other repository as agreed with the County Archaeologist within five years from the date of completion of the investigation.

Appendix 1: Metal Detecting Record Form

Ref No.	NGR	Field	Depth (mm)	Finder	Artefact

ANNEX H: Post-Excavation (fieldwork) Assessment: preparation of report and discussion of potential for analysis

1. A review of the results of fieldwork will indicate whether the Site Archive contains material which has the potential to contribute to the pursuit of local, regional or national research priorities. In such cases the Archaeological Contractor may, as soon as possible after completion of fieldwork on site, be required to prepare a written assessment of the potential of the data from the site to contribute to archaeological knowledge, and identify the further study and analysis necessary.

2. The assessment shall be carried out in accordance with Chapter 6 and Appendix 4 (assessment report specification) of the English Heritage publication The MoRPHE Project Managers' Guide (https://content.historicengland.org.uk/images-books/publications/morphe-project-managers-guide/HEAG024-MoRPHE-Managers-Guide.pdf/) and where applicable any variations set out in the English Heritage Management of Research Projects in the Historic Environment (MoRPHE, 2016 and PPN3 2008 (https://content.historicengland.org.uk/images-books/publications/morphe-project-planning-note-3/morpheprojectplanningnote3.pdf/).

3. Where there is uncertainty about the scope of work necessary to assess a particular aspect of the archive, for example because the archive is very small or very large and complex, the Archaeological Contractor should raise this with the Planning Archaeologist.

4. The post-excavation assessment report will include the following:

   Contents

   Summary

   Introduction
   - *Scope of report*
   - *Site Location*
   - *Background to project – project outline*
   - *Fieldwork methodology and strategy*
   - *Archaeological and historical background*
   - *Original research aims and objectives*

   Summary of excavation results by phase using initial evidence for dating based on artefacts and stratigraphic relationships (*include chronological phases for which no evidence found).*

   Quantification of data and records

   Assessment of finds and environmental samples (artefacts and ecofacts)

   Statement of potential and significance
   - *Results measured against the original project aims*
   - *Local, regional and national research context*

   Revised aims and objectives

   Method statement including tasks, named specialists, time and costs to achieve publication, dissemination and archiving (including):

- *Stratigraphy*

GeoarchaeologyArtefacts and Ecofacts

- *Historical research*
- *Illustration*
- *Outreach*
- *Archive deposition and quantification*

Confirmation of programming and resources

- *Personnel*
- *Task Lists*

Bibliography

HER and OASIS summary sheets

Appendices - specialist tabulated data

Illustrations – site location plans, area phase plans, sections and photographs

Annex I –Digital data and report submission to East Sussex HER

The table below sets out the requirements regarding submission of digital data and reports to the East Sussex Historic Environment Record. Please refer to this for all projects in East Sussex and Brighton and Hove.

Please submit digital data and reports in the format described below. Please note, both digital data and reports for a project should be submitted to the HER on the same CD.

Digital Data submission

Type of Application	Urban	Rural
Large Major (e.g. road scheme)	n/a	By agreement with the County Archaeology Team
Major (1000m2)	By agreement with the County Archaeology Team	GIS shapefiles of trenches/survey area and features (e.g. for multi-period sites broken down by period)
Full	GIS shapefiles of trenches unless agreed otherwise by County Archaeology Team	GIS shapefiles of trenches/survey area and features (e.g. for multi-period sites broken down by period)
Householder	Good resolution drawings with grid reference provided by the contractor in .dwg format	Good resolution drawings with grid reference provided by the contractor in .dwg format

Digital report submission

Type of Project	Requirements to be sent on CD
Desk-based assessment	PDF(A) report.
Watching Brief	PDF(A) report and a selection of extra photographs.
Evaluation excavation	PDF(A) report, a selection of extra photographs and GIS shapefiles of trenches/survey area and features
Geophysical reports	PDF(A) report and AutoCAD or equivalent figures separately. Please

	provide raw survey data in both the original software based files ie. TerraSurveyor, Geoplot, InSite, Contours and xyz format ASCII files along with a short description such as a .txt file with a list of details including Instrument type, traverse separation, reading interval, sampling position, grid size, line sequence (zig-zag or parallel), dummy value and where appropriate probe configuration and probe spacing
Historic Building Report	PDF(A) report and a selection of extra photographs.
Post-Excavation Assessment	PDF(A) report, a selection of extra photographs and GIS shapefiles of site plans with phasing.
Final excavation report (Publication)	PDF(A) report, a selection of extra photographs and GIS shapefiles of site plans with phasing (if not already supplied at the PXA phase)

The above may be subject to alteration in agreement with the County Archaeology Team.

At the present time we are asking for these digital files to be sent to the HER on CD until we have a long term digital storage solution.

Please can the CD's be sent in clear plastic cases (to avoid damage in the post) to:

FAO: HER Officer

The Keep

Woollards Way

Brighton

BN1 9BP

Sussex HER summary sheet

HER enquiry number						
Site code						
Project code						
Planning reference						
Site address						
District/Borough						
NGR (12 figures)						
Geology						
Fieldwork type	Eval	Excav	WB*	HBR*	Survey	Other
Date of fieldwork						
Sponsor/client						
Project manager						
Project supervisor						
Period summary	Palaeolithic	Mesolithic	Neolithic	Bronze Age	Iron Age	
	Roman	Anglo-Saxon	Medieval	Post-Medieval	Other	
Project summary						

(100 word max)	
Museum/Accession No.	

*WB – Watching brief; HBR – historic building recording

Finds summary

Find type	Material	Period	Quantity

Figures



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Figure 1
Site Location
1:2,000,000, 1:250,000, 1:25,000 at A4



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Figure 2
Detailed Site Location
1:625 at A4