Archaeological Field Evaluation

Standards & Guidance

Contents

1 Requirement for Archaeological Field Evaluation

1.1 An archaeological field evaluation is undertaken where there is reason to believe that archaeological remains may exist on the site, or where the significance of known remains is inadequately understood, such that the implications of a planning or other proposal cannot be adequately assessed.

1.2 SYAS should be consulted in advance of any field evaluation to agree a methodology.

1.3 Note: All references are correct at time of publication, and it is the responsibility of the undertaking body to review the guidance and ensure that they refer to the most current.

Professional Standards

1.4 Archaeological work should be carried out using appropriate expertise and the archaeologists undertaking the work should be adequately qualified. It is good practice to use professionally accredited experts such as a CIfA Registered Organisation[1]. SYAS also maintain an open list of archaeological contractors who operate in the region.[2]

1.5 All archaeological work needs to comply with:

1. the Regional Statement of Good Practice for Archaeology in the Development Process;[3]
2. the Chartered Institute for Archaeologist's (CIfA) standards and guidance;[4]
3. Historic England's guidance on managing archaeological projects (MoRPHE)[5]
4. Historic England's best practice guidance relevant to the project.[6]

Written Scheme of Investigation

1.6 The undertaking body may be required to provide a Written Scheme of Investigation (WSI) to set out a proposed scheme of archaeological investigation in sufficient detail that all relevant parties can understand and agree what will be done.

1.7 The requirement and contents of a WSI on any given site should be confirmed with SYAS.

1.8 The WSI should be formed in reference to relevant standards, and as a minimum contain:

1. Site location (illustrated on OS MasterMap or similarly detailed survey showing National Grid Coordinates);
2. Context of the project (including planning background and consultations);
3. Project timetable/ work stages;
4. A strategy for seeking preservation in-situ of identified features of importance;
5. Monitoring arrangements;
6. A description of the site identifying its geology, topography, condition etc.;
7. Brief summary of the archaeological and historical background of the site and its environs;
8. Detail the implications (of 6 & 7 above) for archaeological and palaeo-environmental potential (of both buried and standing remains);

[1] A register of Registered Organisations is available online: https://www.archaeologists.net/lookingforanarchaeologist
[2] Available online: https://www.sheffield.gov.uk/home/planning-development/south-yorkshire-archaeology-service
[3] SYAS 2018
[4] CIfA 2023a & b
[5] Historic England 2015a
[6] Available online: https://historicengland.org.uk/advice/find/a-z-publications/

9. Aims and objectives with reference to the South Yorkshire Historic Environment Research Framework and other period specific or thematic research frameworks/strategies, as applicable;
10. A table listing the rationale behind the location of each trench and their dimensions and a plan that clearly shows their location within the site;
11. A summary of the specific outputs of the project (e.g. report, archives etc);
12. Methodology for site investigation, sampling, assessment, analysis and reporting.
13. A strategy for the deposition of the project archive (including a selection strategy and data management plan produced in accordance with CIfA guidance);
14. A strategy for publication and dissemination of the results;
15. Details of the competent person/persons or organisation undertaking the works.

1.9 Appropriate specialists, including the Historic England Science Advisor, should be consulted in formulating sampling strategies and methodologies specific to the site and project objectives. This should include an outline sediment sampling strategy based on deposit modelling, suspected archaeology, and previous nearby discoveries. Provision should be allowed to revise this strategy during the fieldwork, as appropriate, to account for initial results and unexpected discoveries.

1.10 A template Written Scheme of Investigation covering intrusive archaeological investigations is available[7], providing additional guidance and allowing any deviations from these standards to be identified and justified.

Selection Strategy & Data Management Plan

1.11 A proposed archive selection strategy must be included with the WSI, detailing the project-specific selection process, agreed by all stakeholders, for all records and materials arising from the work in creating the Archaeological Archive.

1.12 Where digital data is anticipated as an output of the project, the selection strategy must include a data management plan, setting out the methodology for data management from acquisition to deposition.

1.13 This should be produced in accordance with CIfA guidance.[8]

Monitoring

1.14 SYAS will be responsible for monitoring the contractor's work. The contractor must give a minimum of one week's notice of the commencement of fieldwork in order that arrangements for monitoring can be made.

1.15 Minor changes to an agreed WSI must be submitted to SYAS for written approval. Major changes will require the preparation of an updated WSI for submission to the approving body (SYAS or planning authority as appropriate).

[7] See guidance for archaeological projects, available online: https://www.sheffield.gov.uk/syas
[8] Available online: https://www.archaeologists.net/selection-toolkit & https://www.archaeologists.net/digdigital

2 Aims

2.1 The purpose of field evaluation is to gain information about the archaeological resource within a given area or site (including its presence or absence, character, extent, date, integrity, state of preservation and quality), in order to make an assessment of its merit in the appropriate context, leading to one or more of the following:

1. the formulation of a strategy to ensure the recording, preservation, or management of the resource.
2. the formulation of a strategy to mitigate a threat to the archaeological resource.
3. the formulation of a proposal for further archaeological investigation within a programme of research.

2.2 The work will be undertaken in reference to general aims and specific objectives formulated with reference to the South Yorkshire Historic Environment Research Framework[9] and other period specific or thematic research frameworks/strategies, as applicable.

2.3 The level of detail included should be proportionate to the importance of any heritage assets affected, and no more than is sufficient to understand the potential impact of the proposal on archaeological significance.

2.4 All archaeological field evaluations will result in a report, published accounts where appropriate, and a stable, ordered, accessible archive.

[9] Available online: https://researchframeworks.org/syrf/

3 Scope

3.1 The field evaluation should investigate the whole of the proposal area, including those areas affected by temporary works such as construction compounds.

3.2 The evaluation strategy chosen will represent the best means for evaluating the site, establishing the importance and significance of any remains present, and will be selected to cause the minimum impact to archaeological remains present, operating with due regard to health and safety regulations.

3.3 The most common forms of field evaluation employed in the region include:

1. Geoarchaeological investigations and deposit modelling;
2. Geophysical survey;
3. Evaluation trenching;

3.4 Additionally, other evaluative techniques including shovel/test pitting, fieldwalking and metal detecting may be used, to address the issue of finds present in topsoil.

3.5 Field evaluation is often an iterative process, and a combination of strategies may be required dependent on the site and project objectives. For example, after a geophysical survey, trial trenching is usually required.

3.6 Field evaluation should be undertaken at a stage when it can inform the design of appropriate mitigation measures, i.e., before the finalisation of any detailed designs and in advance of a planning application being made.

3.7 The Historic England Science Advisor can be consulted in respect to advice on appropriate approaches to fieldwork, sampling strategies and any archaeological science components.

Recommended Contingencies

3.8 Contingencies should be budgeted for and identified in the WSI, including, where relevant:

Geoarchaeological Investigations and Deposit Modelling

1. Further field survey, up to 10% of the total original boreholes and/or test pits;
2. Specialist analysis and scientific dating

Archaeological Geophysical Survey

1. Additional survey with a complementary technique, up to 10% of the original survey area.

Archaeological Evaluation Excavation

1. Additional trenching or trial pitting, up to 5% of the original sample area;
2. Additional specialist sampling and scientific dating;
3. Conservation of artefacts;
4. For the preparation and submission of a report including the results of post-excavation analysis, in the event that further archaeological fieldwork and follow-on reporting is not required;
5. Publication of results.

4 Geoarchaeological Investigations & Deposit Modelling

4.1 Geoarchaeological investigations and deposit modelling will be undertaken in accordance with standards and guidance published by Historic England.[10]

4.2 Deposit modelling is best deployed early in the planning process as it can be beneficial in identifying areas of archaeological interest/sensitivity; improving cost estimation through determining the depth and range of deposits anticipated at the site; and developing mitigation strategies.

4.3 Deposit models can be applied in any landscape where sediments accumulate, either through natural or anthropogenic processes, including sites of:

1. natural Quaternary (superficial) sediments;
2. deep urban stratigraphy;
3. other deep anthropogenic deposits, e.g. mining waste.

4.4 It is appropriate for the model to be constructed by a geoarchaeologist for large sites or those with complex, deep or significant deposits. On deeply stratified urban sites, they should work in partnership with an experienced urban archaeologist.

4.5 Deposit modelling is an iterative process and should be enhanced as additional data is collected during subsequent project stages.

Desk-Based Deposit Modelling

4.6 Geotechnical borehole logs for a site and its environs should be obtained from existing sources, with readily accessible information including:

1. British Geological Survey geotechnical data (via Geoindex);
2. Previous planning applications for the site and land around it which may include geotechnical surveys (via local authority planning portals);
3. Archaeological reports and archived data for the site and land around it held by the Historic Environment Record and the Archaeological Data Service;
4. Quaternary Research Association's regional field guides;
5. Relevant published literature.

4.7 Data should be collected beyond the site boundary to reduce discrepancies in the model and contextualise the site.

4.8 All data should be reviewed, cleaned, and standardised prior to creating the deposit model. The quality of the data, and its spatial distribution, should be assessed to determine whether a model can be constructed or whether additional field survey (see below) is needed before modelling can take place.

4.9 The South Yorkshire Historic Environment Research Framework and other relevant period-specific and thematic research frameworks and strategies should be consulted in developing research questions for the deposit model.

[10] Historic England 2011, 2015e & 2020

Field Survey

4.10 Where gaps exist or questions remain unanswered in any desk-based model, targeted geoarchaeological boreholes and/or test pits and/or deep geophysical survey should be undertaken as an early stage of evaluation.

1. enhance coverage of existing surveys and target areas of uncertainty
2. enable inspection by a geoarchaeologist to enhance interpretation
3. enable recovery of finds and samples, enhancing dating

4.11 The method of survey will be dependent on the aims of the survey, estimated depth of the sedimentary sequence, the likely sediment characteristics, and the nature of any sampling required. In developing the survey methodology, advice should be sought from appropriate specialists such as a geoarchaeologist and the Historic England Science Advisor.

4.12 Borehole should be drilled to the top of the bedrock (i.e., the full Quaternary sequence). Cores can be recorded on or off site, although all samples of potential further research interest should be retained for later project stages and stored in appropriate conditions.

4.13 Boreholes are also required to ground truth the results of deeply penetrating geophysical surveys, and to aid in its interpretation.

4.14 Where geotechnical site investigations are planned ahead of development, it is encouraged that they are designed in consultation with a geoarchaeologist in order to determine whether the surveys can be integrated, and/or whether they can be monitored by a geoarchaeologist.

Data Processing

4.15 Depositional sequences from investigations within and around the site should be reviewed, and interpreted based on physical characteristics, and laterally equivalent deposits linked to identify stratigraphic layers across the site.

4.16 The surfaces of deposits derived from geophysical survey should be corroborated by ground truth boreholes.

4.17 The method used to prepare the deposit model will be based on the aims of the project, the desired graphical outputs, data distribution and quality, and the size and complexity of the site and depositional sequence. For small or simple sites, a 2D diagram can be produced by hand or computer software. For complex sites, or where more sophisticated graphical outputs are warranted, such as 3D models, specialist software will be required. In either case, the key aim of any deposit modelling exercise is to generate outputs that are clear and informative for all end-users. Guidance from SYAS or Historic England's Science Advisor should be sought on the most appropriate outputs for any given site.

Report

4.18 A report will be produced, containing:

1. Non-technical summary;
2. Site location and description of geology and topographic setting;
3. Aims and objectives of the deposit modelling exercise;
4. Justification and rationale for the survey methodology;
5. Data sources, distribution, and assessment of quality;
6. Methods used to build the model;
7. Chronological control;

8. Statement of reliability of the model and the confidence that can be placed in it;
9. Interpretation of the site-wide deposit sequence and supporting illustrations;
10. Preservation assessments (including characterisation of the environmental conditions of the deposits) should be included where retention within the development is likely to be a mitigation outcome;[11]

11. Recommendations for how the model should be used and archived;
12. Recommendations for further archaeological work, to be determined in consultation with SYAS;
13. Relevant illustrations which should, as a basic minimum, include appropriate annotations and explanations, be clearly related to base mapping, and might include:
    (a) site location plan;
    (b) distribution of data points;
    (c) location of transects (schematic cross-sections);
    (d) one or more transects, selected, and prepared to address the model objectives
    (e) key surface plot (eg top of bedrock or pre-Holocene surface);
    (f) isopach maps showing extrapolated thicknesses of key units;
    (g) zones of different archaeological potential (character maps).
14. Index to and location of digital archive
15. References
16. Acknowledgements identifying those involved in the project, including SYAS

Dissemination & Archive

4.19 The final report and results of the survey should be disseminated in accordance with the standards and guidelines set out in Section 7 below.

4.20 A project archive should be maintained and prepared in accordance with the standards and guidelines set out in Section 8 below.

[11] Historic England 2016

5 Standards for Geophysical Survey

5.1 Archaeological geophysical survey will be undertaken in accordance with standards and guidance published by European Archaeological Council (EAC) and CIfA.[12]

5.2 The choice of geophysical technique should be formulated in consideration of a deposit model derived from a bespoke borehole survey/ test pitting, or from the desk-based analysis of the topographic and geological context of the site, its past and present land use, and the anticipated form of archaeological remains present. The Geophysical Survey Database[13], in combination with the British Geological Survey Soil Parent Material Model[14], should be consulted to determine effectiveness of specifical techniques on local geology.

5.3 Where magnetometry is the chosen technique, a cart mounted system is preferred over a handheld system where terrain allows.

5.4 The survey area should be determined in consideration of the aims of the project, and in consultation with SYAS. Where magnetometry is the chosen technique 100% of the suitable area will be surveyed.

5.5 Where there is insufficient information to determine the effectiveness of a given technique (including where depth or type of sediment may prevent identification of features) then it may be necessary to trial several strategies.

5.6 The geophysical survey report should record the rationale for the survey area, choice of geophysical technique/s employed, and review the success of the methodology.

Survey

5.7 The surveyed areas will be accurately tied into the National Grid to enable the surveyed area to be independently relocated by a third party.

5.8 For most sites, where a phased investigation is not proposed, the survey should be of sufficient resolution to enable the delineation of individual archaeological features. An appropriate resolution for most such investigations is:

1. For magnetometry, a survey resolution of 0.5m x 0.25m;[15]
2. For earth resistance, a survey resolution of 0.5m x 0.5m.[16]

5.9 Wherever possible, traverses should be oriented perpendicular to any known linear archaeological features (such as those identified from aerial photos) or else to the direction of recent ploughing.

Data Processing

5.10 An unaltered copy of the raw data will be retained. A minimal amount of visual processing may be applied to a copy of the data, such as destaggering, in accordance with best practice guidance. [17]

[12] EAC 2016 & CIfA 2020b
[13] Available online: https://archaeologydataservice.ac.uk/archives/view/ehgsdb_eh_2011/
[14] Available online: https://www.bgs.ac.uk/datasets/soil-parent-material-model/
[15] EAC 2016, 13 & 64
[16] EAC 2016, 13 & 72
[17] EAC 2016

Report

5.11 A report will be produced, containing:

1. Non-technical summary
2. Introductory statements
3. Aims and purpose of the evaluation
4. Methodology
5. Survey conditions
6. Results
7. Discussion of results
8. Conclusion
9. Plans/plots, including:
   (a) a survey location plan demonstrating relationships to other mapped features and indicating the position of individual data grids (minimum scale 1:2500);
   (b) a greyscale plot of minimally enhanced survey data (minimum scale 1:1000);
   (c) a greyscale plot of improved survey data (minimum scale 1:1000);
   (d) a greyscale plot of processed survey data (minimum scale 1:1000);
   (e) a X-Y trace plot of improved magnetic data (for large sites a sample of the data might be plotted instead); and
   (f) an interpretative plan and plans of results superimposed over first edition Ordnance Survey mapping and aerial imagery (minimum scale 1:1000).
   (g) An interpretative plan showing results on a topographic map with contours and graduated colours at a suitable scale.
10. Index to and location of digital archive
11. References
12. Acknowledgements identifying those involved in the project, including SYAS

Dissemination & Archive

5.12 The final report and results of the survey should be disseminated in accordance with the standards and guidelines set out in Section 7 below.

5.13 A project archive should be maintained and prepared in accordance with the standards and guidelines set out in Section 8 below.

6 Standards for Archaeological Evaluation Excavation

6.1 Archaeological excavation will be undertaken in accordance with CIfA standards and guidance.[18]

6.2 Detailed procedures for excavation and recording will be undertaken in accordance with professional best practice, such as that established in Historic England's *Excavation Recording Manual*.[19]

6.3 All records, finds and samples generated during the programme of works should be safely stored as part of a Working Project Archive (see Section 7).

Evaluation Strategy

6.4 The form of evaluation should reflect the expected nature of the archaeological evidence, and it may be necessary to deploy several strategies. For example, trial trenching for large linear features, shovel testing for flint scatters.

6.5 For trial trenching, the location and amount of trenching required will be dependent upon the nature of the site and the amount and quality of data from any previous investigations:

1. Where non-intrusive investigations have been carried out, an appropriate level of trenching will be targeted to test anomalies, apparently blank areas, and any areas un-surveyed.
2. Where no such work has been carried out, a minimum 5% sample of the site will be tested.[20]

6.6 Where there is potential for spreads of finds or deposits within the topsoil or subsoil, a programme of shovel/test pitting will be required. A suggested approach would comprise:

1. Shovel pits are to be set out across a 10m survey grid;
2. Pits are to measure 0.25m x 0.25m and hand excavated to a depth of 30-50cm;
3. Spoil is to be sieved and finds recorded by pit.

6.7 The rationale for the chosen strategy will be set out in the written scheme of investigation.

Groundworks

Staking Out

6.8 Archaeological trenches/pits will be staked out using a real-time kinematic global navigation satellite system (RTK GNSS), or other suitably accurate survey method of equivalent accuracy, in accordance with the agreed locations set out in the WSI.

6.9 Minor adjustments may be undertaken to avoid previously unknown obstacles such as vegetation or services, or to enable machine manoeuvring. Trenches or trial pits located to target specific features should not be moved without prior agreement of SYAS.

[18] CIfA 2023a&b

[19] Available from Historic England's website: https://historicengland.org.uk/content/docs/research/historic-england-archaeological-recording-manual-2018/

[20] Research suggests this is the optimal minimum percentage to guarantee confidence in identifying archaeological remains across all periods (Hey & Lacy 2001, 55).

Machine Excavation

6.10 All machine excavation should be undertaken by adequately qualified and experienced operators, under the supervision and direction of an archaeologist, and cease at the first archaeological horizon or when the natural geology is exposed.

6.11 Breaking ground, whether topsoil or hardstanding, should be undertaken with care, mindful of the potential presence of archaeological deposits.

6.12 Machine excavation will be undertaken by backactor excavator, using a toothless bucket of appropriate width, to reduce ground levels in level spits of no more than 0.20m. Excavated areas should not be smoothed with the back of the bucket. Under no circumstances will the machine be used to cut arbitrary trenches down to natural deposits.

6.13 Toothed buckets are only to be used in exceptional circumstances, and where express permission has been given by the archaeologist.

6.14 Care should be taken when excavating onto suspected occupation sites, or entranceways, in order that subtle features or deposits are not machined off. After the depth of the archaeological horizon has been established, it may be appropriate to machine to just above it to enable hand excavation to establish potential before further machine stripping.

Spoil

6.15 Spoil should be scanned for metal artefacts using a metal detector capable of discriminating between metals, and operated by an experienced user, to enhance recovery of artefacts.

Deep Excavations

6.16 Where necessary to execute the objectives of the project, trenches or trial pits may need to be stepped or shored to reach their final depth. The potential for deep excavation should be identified from geotechnical data, where available, at the outset of the project and appropriate measures included in the WSI.

6.17 The base of the excavation will reflect the size specified for the trench/pit.

Removal of Bulk Deposits and Obstructions

6.18 With the prior agreement of SYAS, bulk deposits of limited archaeological interest may be machine excavated in spits (such as homogenous deposits of made ground or demolition material).

6.19 Large obstructions, such as boulders or engineering structures, will be left *in situ* where it is safe to do so. Removal of such structures by machine will be undertaken where they are assessed to cover archaeological deposits, and only where a strategy has been agreed with SYAS on how disturbance of surrounding deposits or structures will be avoided.

Removal of Contaminated Deposits

6.20 The risk of contamination should be established prior to work commencing, and appropriate measures implemented to reduce or avoid risks in accordance with Historic England best practice guidance.[21]

[21] Historic England 2017a

6.21 If excavation needs to cease due to the discovery of contaminated deposits, then guidance should be sought from the appropriate specialist/agency to establish risks and design a forward strategy for safe excavation.

6.22 Where hand excavation is not possible, machine excavation should be undertaken under the direction of an archaeologist. An appropriate strategy for recording will be agreed on a case-by-case basis with SYAS.

Investigation of Archaeological Features

6.23 Archaeological deposits will be cleaned and excavated by hand, using appropriate tools, according to accepted principles of stratigraphic excavation. The stratigraphy of the area is to be recorded, even when no archaeological deposits have been identified.

6.24 All features will be investigated sufficient to determine its nature, extent, and significance:

1. discrete features will be half-sectioned in the first instance;
2. linear features will be sampled a minimum of 20% along their length (each sample section to be not less than 1m), or a minimum of a 1m sample section, if the feature is less than 5m long;
3. the deposits at junctions or interruptions in linear features will be sufficiently excavated for the relationship between components to be established. All termini will be investigated.

6.25 No archaeological deposit will be entirely removed unless this is necessary to meet the aims of the project.

Weathering-out, Drying and Wetting

6.26 Depending on the conditions of the site and geology, particularly on Sherwood/Bunter Sandstone sands and gravels, it may be necessary to allow a minimum of one week following stripping to improve visibility of archaeological deposits.

6.27 In dry conditions or on clayey soils it may be necessary to spray the site to show up changes in the composition of soils and identify features.

6.28 Waterlogged and organic-rich deposits should be kept covered and damp to reduce degradation once exposed.

Features of Unexpected Importance

6.29 Should features of unexpected importance or complexity be identified that would warrant special measures to record or protect them, then the supervising archaeologist should notify SYAS at the earliest opportunity to discuss an appropriate strategy for their management.

Recording

6.30 A standard single context recording system will be used to keep a documentary record of all archaeological remains that are encountered. The individual contexts will be cross-referenced as appropriate to associated features that are exposed.

6.31 Stratigraphy will be recorded in all areas of monitoring, even where no archaeological deposits have been identified, and a Harris Matrix diagram compiled.

6.32 All records will be checked for consistency and stratigraphic relationships.

Drawn Record

6.33 A range of survey methods may be applied depending on the nature of the archaeology encountered, including survey by hand, by total station, real-time kinematic global navigation satellite system (RTK GNSS), or photogrammetry. All measured survey will be undertaken in accordance with relevant guidelines.[22]

6.34 Hand-drawn and digital surveys will be annotated in the field to produce interpretative drawings with relevant context numbers and boundaries between features.

6.35 A drawing register will be maintained, recording the scale, location, date, subject, levels, and surveyor.

6.36 The extent of the excavated areas and archaeological features will be recorded in plan at an appropriate scale (1:500, 1:1250 or at most 1:2500), including the position of section lines, and tied into the National Grid.

6.37 All archaeological features will be drawn in plan and section at an appropriate scale (no less detailed than 1:50 for plans and 1:20 for sections) with Ordnance Datum heights on each drawing. At least one representative long section of each trench or trial pit will be drawn, from ground surface.

Photography

6.38 Photographic recording (film or digital) will be required showing the site in context, all excavated trenches and individual archaeological features, and including shots of work in progress.

6.39 Film photography will be undertaken using panchromatic black and white film no faster than ISO400, supplemented with colour slide film.

6.40 Digital photography will be undertaken in accordance with standards set by Historic England and the recipient archive.[23] All digital photography will be undertaken using a high-quality camera recommended to have no less than an APS-C or DX size sensor of 10 megapixels and to be capable of generating images in TIF (v6) or unprocessed RAW format.

6.41 A tripod will be used to allow stable longer exposures in low light conditions.

6.42 Metric scales of appropriate size will be discreetly placed in photographs to preserve a sense scale. Where colour is an important factor, colour control patches will be used.

6.43 A register recording the details of each image will be maintained, including subject, location, date, and photographer.

Finds and Samples

6.44 Provisions should be made for relevant specialists to visit the site where required.

6.45 The Historic England Science Advisor can be consulted for advice on appropriate approaches to sampling and other archaeological science components.

[22] Including Andrews *et al* 2015 and Historic England 2017b.
[23] Historic England 2015c. and Archaeological Data Service 2009

Artefact Recovery

6.46 All stratified archaeological finds will be collected, except those from modern contexts (mid-20th century or later). Unstratified finds will be collected where they may be of archaeological interest. All collected finds will be bagged and labelled by context.

6.47 Removal, packaging, and labelling of finds will be undertaken in accordance with 'First Aid for Finds'[24] and specific Historic England guidance as required.

Environmental/Sediment Sampling and Scientific Dating

6.48 All sampling must be undertaken to a bespoke strategy to be set out in the project WSI. It is to be produced in consultation with specialist advice, and in accordance with best practice guidance (including specific guidance on industrial residues, geoarchaeology, animal remains and dating, where appropriate).[25]

6.49 The classes of material to be sampled, and the methodology for collection and assessment, will be dependent on:

1. The nature of past environments, landscape processes and activities;
2. The types of material to be recovered to address the objectives of the project;
3. The types of material likely to survive given anticipated ground conditions.

6.50 The sampling strategy should also identify a process for determining when scientific dating will be considered, and the most likely forms appropriate to the site (such as radiocarbon dating, luminescence dating, archaeomagnetic dating, or dendrochronology).

6.51 Provision should also be made in the WSI for the sampling strategy to be refined at suitable stages during the fieldwork programme, utilising appropriate specialists where necessary including the Historic England Regional Science Advisor.

Human Remains

6.52 Should any inhumation or cremation burials be encountered, their extent, number and state of preservation will be established and SYAS will be notified to discuss an appropriate strategy for their management. Remains should not be removed or chased beyond the existing limits of excavation prior to agreement with SYAS.

6.53 Where it is deemed necessary, a licence for removal will be requested from the Ministry of Justice, and SYAS notified, and no development should take place until burials are removed or alternate arrangements made.

6.54 The treatment of human remains will be in accordance with the requirements of Civil Law and all relevant best practice guidance.[26] The remains will be recorded in-situ before lifting in accordance with best practice guidance.[27]

Treasure

6.55 Written agreement must be sought from the landowner to confirm that they waive their right to receive a reward under The Treasure Act 1996 should eligible finds be made.

[24] Watkinson and Neal 1998
[25] Historic England 2011, 2015d, 2018b, 2019 and 2022.
[26] APABE 2017
[27] Brickley, et al., 2004 and 2017 & Historic England 2018c

6.56 Artefacts defined as treasure under the Treasure Act 1996 (as supplemented by the Treasure (Designation) (Amendment) Order 2023) will be treated in accordance with the Treasure Act 1996 Code of Practice.[28] All finds of treasure must be reported to the local coroner within 14 days of discovery. In the first instance, it is recommended that details of the find are provided to the local Portable Antiquities Scheme Finds Liaison Officer to confirm that it constitutes treasure; they will be able to apply for a Treasure Reference Number and declare the find to the coroner on your behalf. SYAS should also be notified.

6.57 A short Treasure Report will be compiled for submission to the coroner.[29]

6.58 Where recovery of treasure cannot be undertaken on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.

Post-Excavation

6.59 All finds are to be treated in accordance with current best practice guidance. Finds are to be cleaned and marked, according to accepted principles and in line with appropriate period/material guidelines.

6.60 For all categories of material recovered, including finds, palaeo-environmental, industrial and other specialist samples, an assessment by an appropriately experienced specialist will be undertaken in accordance with best practice guidance, including relevant CIfA Toolkits.[30]

6.61 Basic stratigraphic information will be supplied to the project specialists.

6.62 All sediment samples collected in accordance with the project sampling strategy should be processed, sorted, and assessed (excluding samples form obviously mixed deposits, etc.).

6.63 Scientific dating of suitable material should be undertaken during the evaluation phase where it would assist with meeting the aims of the project.

6.64 Advice from appropriate specialists should be sought on the storage and conservation of unstable artefactual remains (e.g. metallic, wood or leather).

6.65 Ferrous objects, and a selection of non-ferrous objects (including all coins), will be x-radiographed in accordance with Historic England guidance.[31]

6.66 The specialists will provide assessment reports describing the material, proposing selection for the permanent archive, and identifying recommendations for further detailed analysis and illustration in consideration of the project research objectives and any unanticipated research potential.

6.67 For ceramic assemblages, recording shall be carried out in a manner compatible with existing typological series in local pottery reference collections, e.g. the South Yorkshire / North Derbyshire Medieval Ceramics Reference Collection.[32]

6.68 The guidelines for handling Post Roman Ceramics produced by the Medieval Pottery Research Group are also to be followed, for relevant material: MPRG, 2001 "Minimum

[28] DCMS 2008
[29] A template treasure report can be requested from the Finds Liaison Officer
[30] Watkinson and Neal 1998, Historic England 2011, Barclay *et al.* 2016 & CIfA Toolkits: https://www.archaeologists.net/work/toolkits

[31] Historic England 2006
[32] Available online: http://archaeologydataservice.ac.uk/archives/view/ceramics_eh_2003/

Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics" Medieval Pottery Res Group Occ Paper 2.

Reporting

6.69 As a minimum, an evaluation report to post-excavation assessment level will be produced. This will provide sufficient objective data to describe and document the results and an assessment of their importance including the research potential of the project archive.

6.70 Where, in consultation with SYAS, further investigation and specialist analysis is necessary to achieve the aims of the project, and this will not form part of a follow-on mitigation phase, then an updated written scheme of investigation (sometimes referred to as an updated project design) will be produced. This update will describe the additional work required and how it will be undertaken.

Evaluation Report

6.71 An evaluation report shall contain:

1. An introduction including background information (with planning application details, where appropriate);
2. The original research aims and objectives and rationale for selected area of investigation;
3. An archaeological and historical baseline;
4. A description of results;
5. A report of all find and sample categories to assessment level, by appropriate specialists, including their research potential;
6. The results of any scientific dating;
7. A discussion of the results including a phased interpretation of the site;
8. A summary of the results in their local, regional, and national context, and the extent to which the work has addressed the project aims and objectives;
9. An assessment of the effectiveness of the evaluation strategy, including earlier stages of work (including geophysical survey);
10. Preservation assessments (including characterisation of the environmental conditions of the deposits) should be included where retention within the development is likely to be a mitigation outcome;[33]
11. Recommendations for any further investigation, specialist analysis, conservation recording and/or preservation of in situ archaeological remains, to be determined in consultation with SYAS;
12. Supporting illustrations, including as a minimum:
    (a) A detailed location map;
    (b) A detailed site plan showing all trenches or trial pits, as excavated;
    (c) Plans for all trenches where archaeological features were identified;
    (d) Detailed plans of archaeological features;
    (e) Detailed sections of archaeological features;
    (f) An overall (phased) site plan showing all archaeological features recorded;
    (g) Selection of photographs of work in progress;
    (h) Select artefact illustrations and/or photographs.
    (i) Supporting tables of data, as relevant.
13. A detailed context index;
14. An archive index;

[33] Historic England 2016

15. Acknowledgements identifying those involved in the project, including the support of SYAS.

Updated Written Scheme of Investigation

6.72 An updated written scheme of investigation shall contain:

1. Any changes to the aims and objectives of the project;
2. Schemes of further investigation, conservation or specialist analysis;
3. The requirement and content of the final analysis report;
4. Any changes to the archive arrangements, including details of proposed specialist conservation.
5. Any updates to the Selection Strategy and Data Management Plan.

Dissemination and Archive

6.73 The reports and results of the evaluation should be disseminated in accordance with the standards and guidelines set out in Section 7.

6.74 A project archive must be maintained, prepared, and deposited in a publicly accessible repository in accordance with the standards and guidelines set out in Section 8.

7 Standards for Public Engagement, Dissemination & Publication

Public Engagement & Outreach

7.1 Archaeological work is undertaken for public benefit and SYAS encourage opportunities for public engagement to be integrated from the outset.

7.2 As a minimum on all trenching/test pitting evaluation, the WSI will set out the steps taken towards establishing an engagement and outreach strategy. Where no measures are proposed, then the reason why must be clearly stated.

7.3 Measures to be considered include:

1. Illustrated notices displayed during fieldwork around the site (with the client's agreement), explaining what work is in progress and why, to keep members of the public informed (minimum of A3 size, with font at a minimum size of 16 point);
2. Social media or newspaper updates;
3. Site tours and public talks (e.g. by presenting a paper at South Yorkshire Archaeology Day and talking to local societies);
4. Digital interpretation;
5. Popular publications;
6. Permanent public information board; and
7. Any other opportunities that might be relevant for a given site.

7.4 A bespoke strategy shall be produced for each site.

Dissemination of Results

7.5 Digital and physical copies of the report must be supplied to SYAS for incorporation into the South Yorkshire Historic Environment Record. Copies of select digital data must also be provided, including geophysical results (GeoTIFFs and shapefiles of interpretative plots) and trench/pit locations (shapefiles of extents and features).

7.6 Printed copies of reports will be included with the physical archive to the recipient museum.

7.7 Copies of the report, or details on where it can be accessed, should be provided to all external specialists involved in the project and, where relevant, the archaeologist responsible for any previous geophysical surveys at the site. This is to assist in the design and implementation of future projects.

7.8 The archaeological contractor should initiate or update an online OASIS form[34] at commencement of the project. Details of the results and archive are to be added, along with a copy of all formal reports, upon completion of the project.

Formal Publication

7.9 A summary report of an appropriate length, accompanied by illustrations (at 300dpi resolution), must be prepared and submitted in digital format, for publication in *Archaeology in South Yorkshire* or an equivalent SYAS publication.

7.10 Where results warrant it, and following discussion with SYAS, formal publication in the form of a journal article or monograph should be produced

[34] Via the OASIS online portal hosted by the Archaeological Data Service http://ads.ahds.ac.uk/project/oasis/

Furthering Research

7.11 Provision must be made for updating the South Yorkshire Historic Environment Research Framework where the results of a fieldwork project contribute towards agenda topics. This is to be achieved by adding 'comments' to relevant research questions briefly summarising the results and providing a bibliographic reference to the relevant report[35].

[35] The research framework is accessible online: https://researchframeworks.org/syrf/ - new users must register for a new account to add comments.

8 Standards for Archaeological Archives

General

8.1 In accordance with regional policy,[36] the archaeological contractor must notify the relevant museum at project initiation, mid-point review and completion stages to discuss archaeological archiving requirements. The relevant form (Project Initiation Form/ Mid-point Review Form/ Completion Form) will be filled out and sent to the museum with a copy provided to SYAS. Template forms are available for download from the SYAS website.[37]

8.2 Details of archiving arrangements should be confirmed with the client and landowner at the outset, and a budget allowed for to cover the museum's expected deposition charge.

Working Project Archive

8.3 All material (whether digital or physical) recovered or generated through the duration of the field evaluation project will be appropriately and securely stored in a working project archive. This will be undertaken in accordance with the selection strategy and digital data management plan set out at the commencement of the project (see paragraphs 1.11-1.13).

Physical Records

8.4 Any physical documents or drawings will be indexed, collated, and stored in a secure location when not in use.

8.5 Film photography will be processed at regular intervals throughout the duration of a project.

8.6 Digital security copies will be made of physical records at regular intervals, to be stored and backed up in a secure location. Documents and drawings will be scanned at an appropriate resolution (no less than 300dpi for documents and drawings, 600dpi for photographic prints, and 4000dpi for negatives or slides) and to an appropriate format (e.g. a lossless format, such as TIF, for scale drawings), and scans checked for quality.[38] Standards adhered to should be included in the Data Management Plan. If digitised data is to form part of the final digital archive it should be treated as set out for Born Digital Records below.

Born Digital Records

8.7 All digital records will be treated in accordance with a project data management plan.[39]

8.8 Digital records will be routinely downloaded, stored, and backed up in a secure location.

8.9 All digital records will be consistently labelled, files logically structured, and embedded with appropriate metadata (or have their metadata stored in an accompanying spreadsheet).[40]

[36] Turnpenny 2012
[37] See guidance for archaeological projects, available online: https://www.sheffield.gov.uk/syas
[38] For further guidance see: Digitisation at The National Archives
[39] CIfA guidance available online: https://www.archaeologists.net/digdigital
[40] Archaeological Data Service 2009

Final Archaeological Archive

Selection Strategy

8.10 On the completion of fieldwork, the relevant specialists and recipient museum will be consulted to update the selection strategy set out in the WSI in accordance with best practice guidance.[41]

8.11 This should consider all documents, finds, samples, and digital files generated during the project, including illustrations.

8.12 The aim of this process is to produce a project archive that allows a full re-examination and interpretation of all the results of the project whilst avoiding replication, repetition, or the retention of materials not considered germane to future analysis.

Archive Deposition

8.13 The final archive will then be assembled in accordance with Archaeological Archives Forum, CIfA, and museum guidelines.[42]

8.14 Agreement in principle for full transfer of title of finds to the recipient museum needs to be obtained at the outset. Confirmation of transfer of title from the landowner and confirmation of assignment of copyright, along with a full archive inventory, will be submitted with a project completion form[43] to the recipient museum. SYAS will be provided with a copy of the completion form, including the assigned accession number.

8.15 The recipient archive will be licensed to use the deposited material, in perpetuity, without restrictions; this licence will allow the archive to reproduce material, including for use by third parties, with the copyright owner suitably acknowledged.

8.16 It is preferred practice for generated material to be archived in its original medium (i.e. physical or digital). Digitising of physical records will only be considered where it retains the same level of accessibility and information as the original medium.

8.17 The physical archive will be deposited with the appropriate museum. A copy of the archive receipt will be provided to SYAS.

8.18 The digital archive will be deposited with a Trusted Digital Repository (CoreTrustSeal certified). For archaeological archives this is presently limited to the Archaeology Data Service (ADS) at the University of York. A link to the final digital archive will be provided to SYAS.

[41] AAF 2011, SMA 2020 & CIfA toolkit for selection archaeology: https://www.archaeologists.net/selection-toolkit
[42] AAF 2011, CIfA 2020e & Turnpenny 2012
[43] Utilising the proforma agreement available online: https://www.sheffield.gov.uk/home/planning-development/south-yorkshire-archaeology-service/guidance-for-archaeological-projects

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