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Managing Archaeology in London

guidance for developers, archaeologists and planners

to promote the understanding and enjoyment of our historic environment

Part 2 Appendices – Practical Considerations

2024

Greater London Archaeology Advisory Service

Historic England

Historic England

MOLA

Contents

A Evidence for archaeology in London

A.1 Archaeological and historical sources

Research

Each phase of the archaeological process should be informed by desk-based research which may involve multiple sources including historical records and oral histories as well as more familiar archaeological sources, books and publications. The selection of appropriate sources will depend on the type of site under consideration (see A.2) and research should aim to establish the following about features or remains of archaeological interest on the site.

- Presence: how likely are they to occur on the site.
- Condition: how well might they survive, considering structural features, artefacts and environmental/scientific evidence;
- Significance: what level of significance can be attributed to known or potential remains
- Vulnerability; what changes could harm the assets. Are they stable or robust, visible or deeply buried? Are waterlogged organics present? Are they likely to be harmed by the specific development proposals, either directly or indirectly?
- Opportunities: what public heritage benefit opportunities might arise (e.g. from improved conservation of, access to or interpretation of heritage assets, or related public engagement activities).

GLHER data

The GLHER should be the first point of call for all research prior to archaeological work in London. Search fees are applicable for commercial purposes.

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It comprises information on various aspects of London's historic environment; sites and finds, including buildings and landscapes, AND supporting spatial or location data

Where new data is created it should be supplied to the GLHER and ADS as appropriate to enhance the ability of the datasets to inform future investigation.

See **Appendix D** for how to make best use of GLHER data and submitting the results of investigation.

Collections and archives

The following provide access to primary and secondary sources to inform archaeology in London:

- The London Museum (for past site archives and other relevant information)
- London and Middlesex Archaeological Society (LAMAS) journals and transactions
- Greater London Industrial Archaeology Society (GLIAS) resources
- *London Archaeologist* (including period based updates published in 2018-19)
- Other County Archaeological Societies' journals, such as those for Kent, Essex, Surrey and Hertfordshire, which cover parts of Greater London;
- Guildhall Library;
- London Metropolitan Archives;
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- The National Archives

- Diocesan archives;
- The Survey of London
- The RIBA Library and collections
- British History Online – a collection of nearly 1300 volumes of primary and secondary content, from local and regional publications such the Victoria County History to images and historic maps.
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Local sources:

- APA appraisal documents
- Conservation Area Appraisals
- Local Lists of historic assets held by most London boroughs
- Local museums, studies libraries and archives such as Vallance House, HADAS, ODAS, EAS
- Local society
- web pages.
- Southwark's online guidance.

A simple internet search for the site name/address can give useful results not always found elsewhere, such as local society web pages, or blog posts.

Maps and plans

All historic maps available should be reviewed, but do not all need to be included or described in the DBA unless show something useful.

For the City of London and adjacent areas, maps from the 16th century onwards are available, with coverage expanding to a wider area in the 18th century. The full range of Ordnance Survey maps and the London bomb damage maps should also be consulted.

Other sources include:

- Goad Fire Insurance Plans;
- Tithe maps and apportionments
- Layers of London a map based history website developed by the Institute of Historical Research, including period specific maps;
- Londinium: a new map and guide to Roman London (MOLA, 2011);
- Colouring London.
- Aerial photos; see London Study for example
- LiDAR (for open areas).
- British Geological survey (BGS)

If maps at a scale illustrating the site in appropriate detail are not available online, mapping should be sourced from Local Studies libraries, archives, or the British Library.

For inner London there are also interpretation maps reconstructing the layout of settlement and land use in the Roman Londinium and early medieval Lundenwic (MOLA), the medieval and Tudor cities (Historic Towns Trust) which should be consulted and plans included showing the location of the site .

A.2 Site types and sources

The following are the main types of archaeological site that may be encountered when working in Greater London, and key sources relating to them. This list is not intended to be exhaustive or a period-based summary and some sites combine several types of archaeological remains.

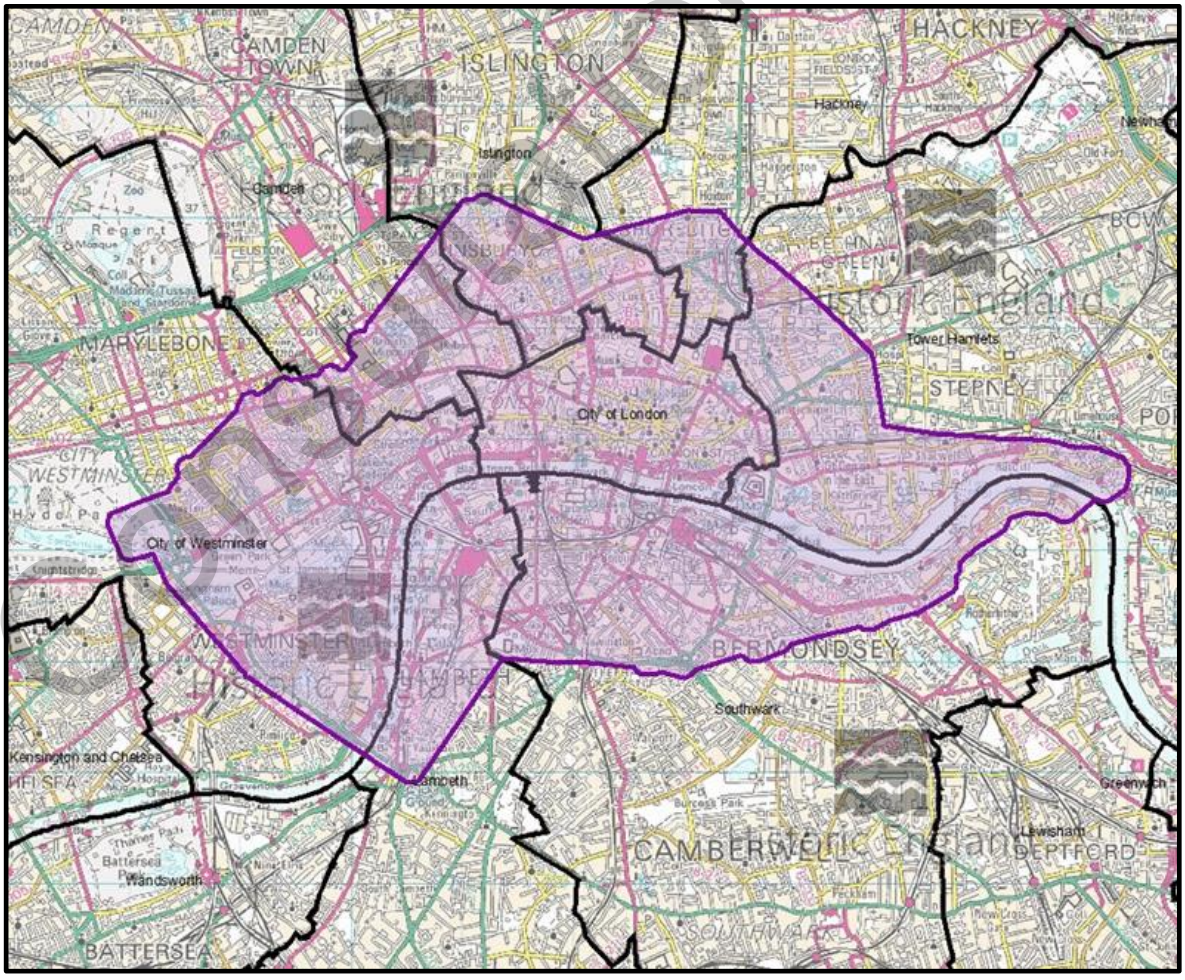
This section has been included to help archaeologists focus on sources of information and approaches to investigations which are most relevant to any particular type of site, and the specialist expertise that may be required.

Deep urban stratigraphy

Character

The long history of the City of London, and adjacent areas such as north Southwark and parts of Westminster, has resulted in a unique depth of archaeological deposits. Roman remains in the City and Southwark can extend to between 3m to 7m below modern ground level, and in some places to even greater depths. Subsequent development leads to complex stratigraphy with unpredictable levels of intercutting or truncation that makes generalisation of archaeological character difficult. These sites are also typically exceptionally rich in artefacts and environmental remains.

These areas have a long and intense history of archaeological investigation and research. They are broadly represented by the extent of the London Urban Archaeological Database (LUAD):



Implications

Assessment should pay specific attention to historical research and the wealth of information available from historical sources and archaeological records for initial desk-based research that should not be overlooked. The depth of existing basements should also be considered when assessing survival potential, and the potential for deep waterlogged deposits should also be recognised.

Deep stratigraphy requires different fieldwork strategies, depending on the impact of development. Archaeological deposits are often hand excavated in their entirety and appropriate recording techniques such as single context planning should be used. The potential for nationally significant discoveries is often high and provision may be required to preserve remains in-situ and/or lift them for future display. Excavation results in larger finds assemblages and documentation that will require significant resources for post excavation and archiving.

Deep stratigraphy comes with its own health and safety risks. The work area is often restricted or confined, and deep trenches need to be shored. Archaeological investigation may have to be coordinated with concurrent programmes of demolition and groundworks.

Sources

- Geotechnical data: new and historic geotechnical logs (available from BGS) should be reviewed.
- Historic England (2019) *Piling and Archaeology: guidance and good practice;*
- Historic Town Trust – Interpretive Historical Maps
- Londinium: a new map and guide to Roman London

London Urban Archaeological Database (LUAD)

Riverside

Character

River traffic on the Thames and its tributaries from the earliest periods has been significant for London's growth, economy and society. Riverside sites have the potential for revetments and wharves, mills, riverside activity and trade, along with evidence of the use (and disposal) of river vessels. Preserved timber structures may survive well, in addition to alluvial deposits, and the influence of changing river levels should also be considered. The landfill deposits behind the advancing riverfronts provide a valuable resource for dating which can be linked to absolute dates from dendrochronological dating of timbers. The Thames foreshore, exposed at low tide, is the local manifestation of coastal archaeology which contains timber structures associated with river activity as well as eroding and shifting deposits and artefacts from prehistoric to modern periods.

The distinction between navigable and non-navigable waterways should be recognised, as should the difference between natural rivers and artificial channels,

Implications

Riverside sites can combine elements of the alluvial, deeply stratified, and industrial sites discussed separately in this section. Managing water ingress into excavation areas is normally a key consideration, requiring appropriate pumps, sumps and facilities for cleaning/drying muddy archaeologists.

These sites will need a strategy for managing potentially large quantities of waterlogged timbers, other organic materials and environmental evidence, with access to appropriate specialist advice. Due to the high potential and logistical difficulties of evaluation, contingencies for unexpected discoveries will be particularly important.

Development on the banks of Thames may give rise to changes in future river traffic, as such as faster vessels or more frequent docking. Archaeological mitigation may be required where these will alter the fluvial regime in terms of localised silt accumulation (which can bury nearby archaeology on the foreshore) or scouring (which can expose features, leaving them vulnerable to damage).

Construction work on the Thames foreshore, for new moorings, foundations or repairs to river walls may require walkover surveys. The Inspector of Ancient Monuments' remit covers the Thames foreshore and should be consulted when appropriate. Working on the foreshore requires a Port of London Authority licence and could also need a licence from the Marine Management Organisation (MMO). It also has its own Health and Safety considerations.

The foreshore is used by a number of community groups and individuals to access archaeology. The Thames Discovery Programme aims to communicate understanding and informed enjoyment of the historic Thames to the widest possible audience, and is a recommended partner for investigations on riverside sites.

Sources

- *Greater Thames Estuary Research Framework* for sites close to the Thames.

Thick alluvial deposits

Character

The former marshlands along the River Thames and its larger tributaries such as the Lea are characterised by deep alluvial sequences over river gravels. Pre modern use of these landscapes has typically been sparse but where archaeology is found there is often good preservation of waterlogged wooden structures, buried occupation surfaces (of all periods), environmental evidence, particularly in peat deposits, and palaeochannels. Such remains are often overlain by consolidation or ground raising deposits, or demolition and other waste from subsequent land uses.

Archaeological remains may be encountered on buried land surfaces, former channel edges or sunk into deep channels. In most places these remains are likely to be sporadic and relatively low density but can be exceptionally well-preserved and fragile when encountered. Sea level has risen such that land which is currently below 0m OD could have been habitable in prehistory.

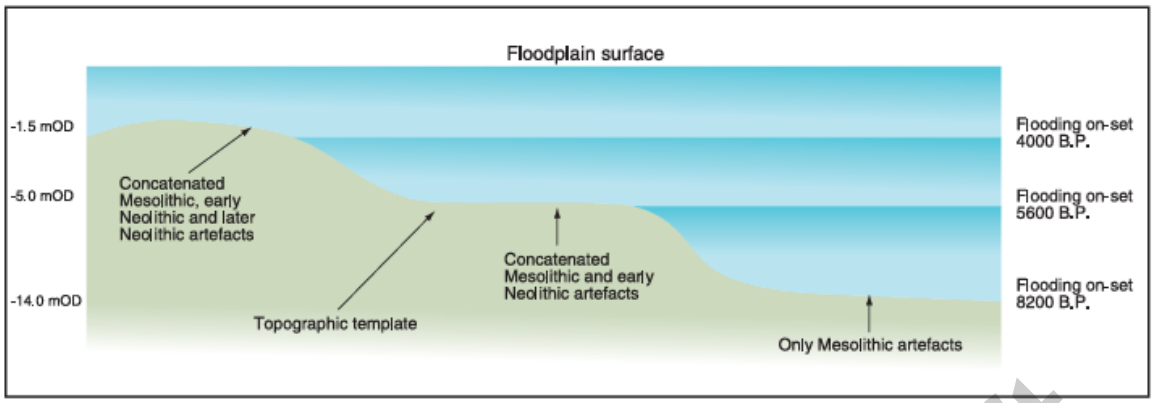


Fig. 8.5 A model for temporal separation of artefact assemblages below the floodplain surface, after URN and URS (1999)

Reproduced from Stafford et al, 2012 © Oxford Archaeology

Implications

Most buried alluvial archaeology is as yet undiscovered. Geoarchaeological deposit modelling is essential to understand the buried topography and archaeological potential, the likely depth of remains and how construction would affect them. Deposit modelling should be carried out at an early stage of the assessment process by specialist geoarchaeologists and may require bespoke boreholes to supplement data from existing (non-archaeological) borehole logs. As more deposit models are created it is important to take account of and refine pre-existing models.

Desk based assessment (DBA) should use the deposit model to correlate the likely depth of archaeological or paleoenvironmental remains against the depth, scale and nature of the impacts of the development proposals. Consider the potential for the preservation of organic archaeological remains throughout the alluvial sequence, particularly in peat deposits, and the possible impact of changes in hydrology or dewatering due to development.

Excavation of trial trenches can be challenging due to depth, water ingress and (on former industrial sites) land contamination. It may therefore normally preferable to create a predictive model based on knowledge of former land surfaces, in order to target evaluation and mitigation strategies such as trench locations.

Evaluation and mitigation strategies balance archaeological potential and likely harm to significance. Where only shallow groundworks or low-density piling is proposed, the likely harm to deposits might be adequately offset by geoarchaeological sampling rather than deep archaeological excavation. See Historic England guidance on Geoarchaeology.

Where deep construction groundworks are covered by a watching brief it will be essential to have adequate provision for safe working in the deep excavations and contingencies of both time and resources to investigate discoveries. Expertise in waterlogged wood will be necessary.

Sources

Sites with potential for alluvial deposits can be identified from British Geological Survey (BGS) mapping and an initial indication of their depth and character made using publicly available BGS borehole data, geotechnical reports and previous archaeological interventions or local deposit models. Shallow alluvium can be evaluated using conventional test pits or trenches but for deep deposits, a geoarchaeological deposit model is likely to be required.

- Corcoran, J. (2011) 'Late Quaternary environments in the lower Lea', in *Mapping past landscapes in the lower Lea Valley: A geoarchaeological study of the Quaternary sequence*. London: MOLA (MOLA Monograph, 55), pp. 140–190;
- London's lost river: the Tyburn. Geoarchaeology in action: the story of the River Tyburn from 11,500 years ago to the present https://brewminate.com/londons-lost-river-the-tyburn
- Historic England (2019) *Piling and Archaeology: guidance and good practice;*
- Historic England (2020) *Deposit Modelling and Archaeology. Guidance for Mapping Buried Deposits.*
- For Holocene sea level change: Stafford, E, Goodburn, D and Bates, M. 2012. Landscape and prehistory of the East London Wetlands: investigations along the A13 DBFO Road scheme, Tower Hamlets, Newham and Barking and Dagenham, 2000-2003, Oxford archaeology monograph No. 17 Oxford.

Suburban

Character

Outer London has developed from medieval hamlets and villages that grew in the post-medieval period, with meadows and cultivated land becoming market gardens to feed the expanding capital. The greatest speed of development occurred in the late 18th century and throughout the 19th century. Many of the settlements expanded into the gardens or landscapes of great houses. Elements of these landscapes can survive in the form of veteran trees, avenues and road alignments following the forms of historic gardens and landscapes. On sites nearer to the locations of former historic houses, or within the gardens of these properties garden archaeology may also be present.

The former villages have potential for evidence of medieval occupation, and manorial houses or other historic building evidence may be hidden behind more recent facades or renders which conceal earlier fabric.

Suburban sites may also contain evidence of prehistoric occupation, often associated with water sources, topography and surface geology.

Quarrying was commonplace across the brickearth and gravels around the expanding city. Pre medieval sites scattered across the former countryside are occasionally indicated by antiquarian records and finds made during the urban expansion.

Implications

Typically, surviving archaeological remains are likely to be close to the surface and may be fragmented by modern disturbance. As these areas are primarily residential in nature, public engagement is important to ensure public benefit and as a way of place making.

Desk based assessments should establish land use history from maps and aerial photographs, topographic data, geotechnical investigations, settlement patters and the results of previous archaeological investigation. Suburban sites are rarely suited to geophysical survey.

Trial trenching may be required to establish if significant remains are present,

Sources

Land use history can be established from historic maps and aerial photographs to identify post medieval features and structures and likely modern disturbance.

Borough archives, historic estate records, local historical societies and the internet can prove

very useful as can local lists in helping establish local significance. However, lengthy expositions of local history unrelated to the site itself are not helpful.

Maps of estate sales, or development and marketing publicity can be useful.

Industrial, transport, infrastructure and military

Character

This site type covers the often substantial and large-scale specialised structures and operations associated with the various manifestations of the post-medieval and modern world encompassed by the term 'Industrial Archaeology'. Archaeological evidence of London's industry and infrastructure is widespread and potentially very significant. Conventionally the First Industrial Revolution in England is dated to the late 18th century although around London some earlier features, such as the 17th century New River water supply system, can display precocious aspects of this nature. Examples range from early potteries and canals, through gas production and storage, to textiles and furniture production. In addition to revealing how these industries and infrastructure developed, investigation shows their influence on many aspects of the lives of Londoners – for example, noxious processes such as tanning were located in less wealthy areas, and housing schemes were associated with the Docks, and major manufacturers such as Ford at Dagenham.

Post-medieval military sites share some characteristics with contemporary industrial and infrastructure sites. This is most evident at sites such as Woolwich Arsenal, Deptford Dockyard and at the Royal Air Force stations located in outer London. Site types are varied ranging from large facilities to smaller structures such as anti-aircraft gun emplacements, barrage balloon mounts,air raid shelters, and prisoner of war camps.

Post-medieval industrial, transport, infrastructure and military sites are typically characterised by standing buildings, substantial above ground and buried structures and complex mechanisms. Historical documentation is often extensive, and some sites will have operated within living memory.

Implications

Buildings, below ground archaeology and documentary/oral history need to be combined with specialist knowledge of the historic activity to fully understand these sites. Industrial and military heritage is poorly represented in the GLHER and historic research is essential to recognise and provide an understanding of this site type. Desk-based assessments perhaps triggered by earlier archaeological potential may identify heritage assets not yet recorded on the GLHER. Once an asset of this type is identified bespoke research should be carried out on the particular processes or features known or anticipated on the site, and what form archaeological evidence might take. Appropriate specialist expertise may be required for some projects.

Enhancements to a DBA may be required for topics such as railways and London's docklands, which are the subject of numerous specialist publications and have their own interest groups and archives.

Industrial remains can provide a valuable contribution to the character of the development that replaces them. They could influence new design, while some features may be worthy of retention either for re-use or historical display, for example bricks or cobbled road surfaces could be salvaged for re-use and retained cranes or chimneys contribute to a sense of place.

Military archaeology can relate to any of the services (army, navy and air force) and to a wide range of supporting services, military production and civil defence. There is likely to be

considerable historical interest and personal stories attached to many of these sites, varying from local interest to a national or even international dimension. Preservation and/or commemoration of key sites or features should be considered.

Land contamination is frequently encountered on these brownfield sites and may pose a significant challenge: see Historic England Good Practice Guidance on Land Contamination and Archaeology. Techniques for recording may include 3D photogrammetry or low flying drone surveys to capture the layout of a complex of structures.

Many industrial sites in London, including the docks, are located near to rivers or in former river valleys on floodplains and former marshlands, because of the ability to develop this land from the 19th century and the need to build large footprint, flat industrial developments for particular processes. These sites often overlie alluvial deposits with potential for earlier archaeology.

Sources

The starting point should be to identify the activities, processes and features known or anticipated in the site, and what form archaeological evidence might take. Some topics such as London's docklands are well served by specialist publications whilst others such as railways have their own interest groups and archives which need to be consulted.

Historic England publishes advice and guidelines on industrial heritage, including specialist studies on topics such as gasworks.

The Greater London Industrial Archaeology Society (GLIAS) is a useful resource for background information on London's industry, as well as publications and advice.

Historic England Guidelines for the Investigation of 17th to 19th century industries

- Historic England has published extensively on military topics such as civil defence, Cold War sites and munitions production.

- The Defence of Britain Project.

Burial grounds

Character

Large Roman burial grounds were established in the areas immediately beyond the City boundaries and south of the Roman settlement in Southwark. From the medieval period onward, the City and its surrounding villages had many small churchyards. These were supplemented by new burial grounds on undeveloped land outside the City as the suburbs expanded in the post medieval period. Urban churchyards were closed and large extra mural cemeteries established in the 19th century.

Unusual burial grounds include plague cemeteries, short-lived nonconformist burial grounds, and those associated with specific communities, historic hospitals and workhouses. Burial grounds are either extant or built over, so may be recognisable or unrecognisable in the modern townscape. Post medieval burial grounds can contain very large numbers of burials in deep stacks. Extant burial grounds are also likely to have associated built structures and memorials.

Note: this category does not cover isolated or small groups of burials or human remains found away from demarcated historic burial grounds.

Implications

While the presence of a burial ground can be obvious, it is not always so - lost burial grounds may be associated with churches or chapels, only evident on historic maps or indicated by archaeological records.

Development that will result in disturbance to human remains should be avoided where possible. Developers should be advised of the legal requirements, potential high cost and logistical challenges of building on burial grounds and large-scale burial ground excavation. The best option will almost always be to minimise groundworks as small-scale disturbance is usually much more straightforward to manage.

Desk based assessments should locate former burial grounds and their maximum extent using map and documentary sources supplemented where necessary by trial pits. Sites of post medieval churches and chapels should be researched to establish if burials took place there. Records of burial grounds being cleared can be misleading and often relate only to monuments and gravestones so field evaluation may be required to confirm the absence of human remains. The DBA should set out the relevant consent regime applicable to the burial ground (usually either a Church of England Faculty or Ministry of Justice licence). The level of detail required in a DBA should be appropriate to the significance of the burial ground and impact of the proposals. For schemes impacting on large numbers of post-medieval burials, consult burial registers and other archive material from local or national archives in order to clarify the significance of the burial ground and that of the inhumations, in accordance with national guidelines (APABE, 2015).

Due to the complexity of the post-medieval diocesan structures within much of London, records may be held at a number of different locations, according to the time a parish was located within that diocese.

When a burial ground would be significantly impacted, a detailed assessment of the date range, number, depth, condition and significance of the inhumations will be required. APABE guidance (see below) provides a series of questions to be addressed in a DBA.

Cultural sensitives around burial grounds should be recognised. For example, there is a presumption that Jewish Cemeteries will never be directly impacted by development proposals. Piling through any burial grounds is not usually permitted. Sensitive treatment of the dead is expected, including recognition of characteristics such as faith and ethnicity, as well as the age of the cemetery.

Where consent for burial ground excavation is granted, specialist osteological expertise will be required and appropriate analysis of the remains should be undertaken. Early discussions with the London Museum should be carried out to establish if they will be able to retain the human remains long term.

Retention or reburial should both be considered at project planning stage and should be discussed with the Archaeological Adviser and the London Museum at an early stage of any project involving large-scale or potentially sensitive burial ground excavation. .
The London Museum considers the retention of all remains excavated in London, selecting those that fit into their Collections Policy. They are likely to favour the deposition of human remains with high research potential or from unique or ‘important’ contexts (e.g. Great Pestilence burials), as these contribute to our understanding of London’s past populations.

Despite these sensitivities, burial grounds present an opportunity for engaging the public with displays and an opportunity to explore the living conditions of London in the past and people of note. Historic England guidance on human remains should be consulted.

Sources

Many of London's burial grounds were documented by Mrs Basil Holmes in 1897 https://www.londonburialgrounds.org.uk/bgpage2.htm

National guidance on burial grounds and archaeology published by the Advisory Panel on the Archaeology of Burials in England (APABE) should be followed.

For context and research questions Historic England's *Draft Agenda for the Archaeological Study of Historic Burials in Greater London* and the Archaeological Audit of Historic Burial Grounds should be consulted.

Greenfield sites

Character

Greenfield developments are less common in London than elsewhere but where they do occur. DBAs can generally follow established approaches applied elsewhere. Greenfield sites in this context include parks and playing fields, farmland and woodland. They will often be designated as Greenbelt or Metropolitan Open Land and can be on the list of registered Parks and Gardens. Many are publicly accessible making them suitable for community engagement.

Greenfield sites cover a range of non-built land uses and generally have fair to good archaeological preservation conditions, sometimes including visible earthworks. They often have potential for medieval and earlier archaeology, including prehistoric remains that have been lost elsewhere. Farmland and ancient woodland survives on the fringes of Greater London and many large open areas which originated as gardens or parks are now significant communal spaces.

What are now public parks in many cases are former parks around historic houses that may retain archaeological remains from the use of the park, or even earlier archaeology that might be preserved below established, long-lived open spaces. Particular consideration should be made for works within historic commons, or village greens, where there has potentially been no development for a very long period of time, other than use to grow food in WW2.

Some greenfield sites were locations for events whose physical remains are primarily artefactual, such as hunter-gather camp sites, battlefields or the various gatherings on Blackheath. For other sites like medieval deerparks both structues and artefact distributions will be significant.

Implications

Greenfield sites will often not have been subject to intensive archaeological investigation or survey so have high potential for new discoveries. The archaeology of London's open spaces requires many of the techniques applied in rural settings, such as the inclusion of aerial photography and Lidar in desk based assessment, and, or evaluation techniques such as fieldwalking, geophysics, measured survey and trenching. Extant historic landscape features such as roads and hedgerows can be considered heritage assets in their own right and be associated with archaeological remains.

It should be noted that geophysical survey is generally unreliable on most London geologies

and because of recent urban-fringe activities. Where geophysics is being considered, it is essential to review the site's geology and land use history and the technique's track record on similar sites bearing in mind the likely targets. Negative geophysics results should not be relied on without testing by evaluation trenches.

Garden archaeology studies how designed landscapes have changed over time and specialist input is advisable on sampling for environmental material and evidence of garden features, including lakes and water features. Origins as deer parks or formal gardens should be investigated, along with their changing use as surrounding populations grew.

Historic landscape features such as routeways, hedgerows and woodlands should be identified and assessed for heritage significance, with reference to Historic Landscape Characterisation where appropriate. Earthwork or historic landscape survey may be necessary in such cases.

Sites characterised in part or whole by artefact distributions should be considered for fieldwalking, test pitting and/or systematic metal-detecting surveys as appropriate.

Sources

Aerial photographs and Lidar should be assessed. Walkover surveys may trigger more detailed studies. A useful function of DBA is to establish land use history from historic maps and aerial photographs to identify post medieval features and structures and likely modern disturbance.

Information gathered by the DBA should also be used to assess suitability for geophysical, fieldwalking or metal detecting survey. Assessing potential for medieval or earlier periods requires a consideration of topography and settlement patterns as well as individual sites and finds. Fieldwork evaluation may be required to establish if significant remains are actually present.

- The National Heritage List for England is the first port of call for research on designated parks and gardens; local societies and local lists can be useful for those that are not designated.
- The London Squares Preservation Act (1931) protects certain squares, gardens and enclosures in Greater London.
- The London Parks and Gardens Trust has undertaken surveys of designed landscapes https://londongardenstrust.org/.
- Historic England guidance on lakes and water features
- Woodland Archaeology in London – English Heritage and the Forestry Commission
- Historic England 2020 Mineral Extraction and Archaeology, Swindon.
- Hedgerow Regulations
- The London Squares Preservation Act (1931)
- The commons act 2006
- Understanding the Archaeology of Landscapes | Historic England

Palaeolithic

Character

Greater London includes well known areas of Pleistocene geological deposits associated with the palaeo Thames River system. These deposits, typically brickearths, sands and gravels interspersed with finer grained alluvial lenses, may hold remains of Palaeolithic date. Deposits

of this age are significant for understanding palaeoclimate and habitat through the Pleistocene and early Holocene, associated with the various human activities in Britain over the past 800,000 years.

Pleistocene deposits and landforms are natural deposits which act as indicators of Palaeolithic archaeological potential. Archaeological Priority Areas (APAs) highlight places where previous discoveries suggest there is high potential but new discoveries could be made almost anywhere where geological deposits of a suitable age are found.

Implications

Desk-based assessments should identify where Pleistocene deposits are likely to be disturbed and the potential for them to contain significant Palaeolithic archaeology or Pleistocene environmental evidence (including faunal remains). Projects involving large-scale deep groundworks (e.g. quarries or infrastructure) typically provide the best opportunities for understanding the geological context within which Palaeolithic archaeology is found.

The potential for Palaeolithic archaeology on sites investigated for other reasons should not be ignored – the generic term 'natural' is unhelpful is such situations if applied uncritically to Pleistocene geology.

For sites with significant potential, assessment by a Palaeolithic or Pleistocene specialist and field evaluation may be required.

'Primary context' Palaeolithic sites are rare nationally but are of exceptional significance so the potential for such discoveries may warrant special contingency arrangements.

Sources

- Geotechnical mapping and published regional/national syntheses indicate likely depth and character made using publicly available BGS borehole data, developer geotechnical reports and previous archaeological interventions or local deposit models.
- Bridgland, DR (1994) 'The Pleistocene of the Thames', in Bridgland, DR, Bowen, DQ, and Wimbledon, WA (eds) *Quaternary of the Thames*. Dordrecht: Springer Netherlands (The Geological Conservation Review Series), pp. 1–31. Doi: 10.1007/978-94-011-0705-1_1;
- Corcoran, J (2011) 'Late Quaternary environments in the lower Lea', in *Mapping past landscapes in the lower Lea Valley: A geoarchaeological study of the Quaternary sequence*. London: MOLA (MOLA Monograph, 55), pp. 140–190;
- English Heritage (2012) *Designation Scheduling Selection Guide: Sites of Early Human Activity*;
- Historic England (2019) *Piling and Archaeology: guidance and good practice;*
- Historic England (2023) *Curating the Palaeolithic*
- Juby, C (2011) *London before London: Reconstructing a Palaeolithic Landscape*. Royal Holloway, University of London;
- Wymer, J (1999) *The Lower Palaeolithic occupation of Britain*. Salisbury, England: Wessex Archaeology : English Heritage.

Buildings and above ground

Character

Many structures, whether earthworks, buildings or monuments have archaeological value. The

significance of historic buildings, particularly listed buildings, might be harmed by changes proposed as part of development. Studying upstanding fabric informs us about its construction, use and evolution.

Implications

Any building or structure which is nationally or locally listed or a positive contributor to a conservation area or recorded on the GLHER should be considered of potential archaeological interest, as should historic structures observed during walkover survey. Non designated buildings are also the subject of archaeological research and investigation. It is as necessary to gain information from upstanding remains as those that are buried.

The scope and purpose of desk based archaeological assessment in relation to buildings should be clarified as the project scoping/design stage. The practice of descoping all buildings regardless of archaeological interest/potential is not acceptable. The DBA should consider whether all standing buildings and structures have archaeological interest and, if so, what that is. Historic building investigation and/or earthwork survey may be required in addition to archaeological excavation. Historic Building Recording may be required by Conservation Officers as well as by Archaeological Advisers. If historic building recording is required by the Archaeological Adviser, they will be able to provide advice on which Historic England building recording level should be used (Understanding Historic Buildings | Historic England).

Structural remains can form a focus for public engagement, presentation and display in conjunction with the archaeological and built heritage investigations. Drone survey should be considered for structures that are unsafe to enter.

It is not necessary to duplicate work undertaken by conservation architects or historic buildings specialists, but their reports should be consulted and ideally the two written in collaboration.

Sources

- The Survey of London is a long running series of volumes documenting the buildings of London past and present, their development, architecture, history and associations. It currently covers much of inner London.
- British History Online
- Pevsner volumes
- Conservation Area Assessments/ Local Lists
- Local heritage publications.
- London Picture Archive
- Online picture collections of local authorities
- Online art sources, such as ArtUK or Watercolour World Historic England provides extensive guidance on Understanding Historic Buildings.
- Local archives (and planning application on line records);
- RIBA archives.
- Understanding the Archaeology of Landscapes | Historic England

B Sustainable development and public benefit

B.1 Sustainable development and archaeology

The increasing focus on sustainable development and Social Value in legislation, policy and guidance (See Part 1), supports archaeologists in having early conversations with project teams about how archaeological work can make positive contributions to developments and benefit communities. This includes input to design and placemaking and programmes of engagement that make lasting contributions to targeted audiences. Sustainability also includes efforts to minimise the impact of development on the environment and to support measures that reduce carbon emissions, which will be relevant to archaeological work.

There is a growing body of guidance on sustainable development and public benefit in relation to Archaeology.

- CifA's *Delivering public benefit from archaeology*
- Historic England
  - Future Strategy 2021 focuses on thriving places, connected communities and active participation.
  - Our Wellbeing and Heritage Strategy 2022
- *Local Authority Strategic Framework* prioritises community engagement, highlighting the need to support good practices in knowledge exchange, engagement and co-creation.
- Association of Local Government Archaeological Officers' (ALGAO) *Delivery of Public Benefit and Social Value Guidance for Archaeology in the Planning Process*
- CIRIA, The Construction Industry Research Association (CIRIA) has published *Archaeology and construction: good practice guidance* (2021), which demonstrates how commercial and social value is generated by integrated teams working collaboratively towards shared goals.
- The London Sustainable Development Commission's *Delivering Social Value through Development and Regeneration: An approach for London*

All DBAs should include a section which assesses the potential for archaeological understanding to contribute to good design of the proposed development, deliver public engagement and contribute to carbon reduction. Proposals for such positive heritage benefits should be proportionate to the scale of development and significance of the heritage assets affected. Where appropriate these ideas will need to inform the Design and Access Statement, WSI or other planning documentation.

Social value, public benefit and sustainability should be core considerations from project inception through to completion starting with assessment of potential and then moving through a series of steps ..

Step 1: what are the public benefit opportunities arising from a project, based on scale of development and the heritage significance?

Step 2: what audiences have been identified to focus benefits?

Step 3: what activities or outputs will deliver positive outcomes for target audiences?

Step 4: prepare delivery plan

Step 5: delivery

Step 6: outcome evaluation and reporting

Sections B2 to B4 provide advice on incorporating archaeology and heritage within design, on public engagement and carbon reduction measures.

Living memory and intangible heritage

Where sites such as workplaces, accommodation or social venues have recently changed or closed, there is the opportunity to collect social histories. Techniques may include building recording, oral history and photography. Oral history collection and archiving requires specialist techniques and partnership with a local organisation such as the museum is advisable. Oral history and social history collecting currently fall outside the archaeological archive's remit but is a core collecting area for the London museum more broadly. Museums may already have recordings relevant to the site.

Representation, Engagement and Inclusion

"Handled intelligently, with all the benefits explained well and acknowledged, development-led archaeology is potentially a very positive force that can contribute immeasurably to communities by providing a powerful and visceral sense of place and identity". (EAC Guidelines p2)

Archaeological evidence demonstrates that London has always been a diverse city. Development-led archaeological discoveries can provide opportunities for London's communities to engage with both the tangible and intangible aspects of our shared past. Some sites may have links to difficult stories, or contested heritage such as the homes of former slave owners, sugar factories, children's homes and workhouses etc. Other sites may demonstrate links to important underrepresented stories. Sites such as these should be acknowledged within archaeological DBAs and are potential sources for public benefit.

Contested Heritage

England has a very rich but complex history. Our buildings, monuments and places sometimes bring us face to face with parts of our history that can be painful for members of our community, invoking strong and sometimes conflicting views. Historic England has produced guidance on contested sites, and case studies to support good practice and inform the process of research, consultation and reinterpretation.

Underrepresented histories and opportunities for engagement

The ways we mark and recognise the past in our public spaces are a powerful and emotive tool for understanding and interpreting history, but not everyone's stories are told and not everyone's history is remembered. Archaeological projects with links to both difficult and celebratory stories, or people and places that are often overlooked or underrepresented will help us to further our collective understanding of the past.

Inclusion

Heritage is for everyone. At Historic England, we believe that the historic environment in England should be accessible and relevant to everyone who lives and visits here, whatever their

socio-economic background, race, religion, age, sexuality, gender, disability, or health. The GLHER is a public resource as well as a repository for archaeological research and advice. Due consideration should be given to use of appropriate and up to date information and terminology when compiling research, and how best to undertake work with diverse audiences and participants where appropriate.

Inclusive Heritage Advice Hub | Historic England

Finding the words - Collections Trust

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B2 Design and Placemaking

Planning policy values local distinctiveness and character, which creates a sense of place and local identity; see Historic England's *Places Strategy*.

By working closely with designers, archaeological remains may influence or be incorporated into a development scheme. Temporary or permanent displays of artefacts and other material from the project can be hosted in foyers, meeting rooms, staff canteens and other areas. For proposals of this kind, the London Museum should be consulted early in the process to ensure the displays are in line with the Museum's standards and to establish responsibilities relating to legal, maintenance, conservation and security checks.

Acknowledgement or reference to the archaeology of the site within the public realm can also be successful and reach a wider audience.

Place making and design is linked to regeneration and creating a sense of place (see Historic England's *Support for Place Making and Design*). It is rooted in community participation, bringing together diverse people to improve a community's cultural, economic, social and environmental situation.

There are some good case studies of archaeological remains and displays which have been thoughtfully incorporated into new developments. Where assessment indicates a site has (or may have) opportunities for design and placemaking initiatives ideas should be discussed with the Archaeological Adviser at an early stage.

B3 Public Engagement

Audience research

Public engagement strategies should be grounded in audience research. There is no such thing as 'the general public' and using this term can mean that the needs and interests of underserved groups are overlooked. The development and presentation of audience research will vary depending on the size of the project but could range from several paragraphs in the WSI summarising research on the audiences surrounding a site (for example local primary schools and local businesses), to a detailed audience mapping report, drawing on Local Authority information on demographics and social and economic factors. Audience research

will sometime be required at an earlier stage in a project and included in the DBA. The GLA and other bodies publish demographic information on social and economic factors , which can inform audience mapping, targets and evaluation strategies for archaeological engagement.

Often, the client will have already undertaken a consultation exercise with local communities and may have established relationships with a wide range of groups that could benefit from engagement with archaeology.

As a result of the Social Value Act 2012, public sector developments will include a Social Value Statement for each project, including a detailed response to local needs, ideally incorporating feedback from communities. The developer may have conducted a Social Impact Assessment as part of their assessment procedure which will have identified the key local beneficiary groups, and how to contact them. If not, these should be agreed with the developer, and how to make contact (e.g. via client neighbourhood team/local NHS/schools etc).

The important point is that audience research should identify the target audiences for engagement and then shape the activities and methods of delivery.

Where possible the design of activities should be collaborative, audience-informed and led. This is easier to achieve where there are existing groups involved with a scheme or local archaeological societies who can engage. These types of audience-led initiatives can deliver long-term benefits to communities.

Accessibility

Accessibility should be considered in a broad sense and informed by audience research and analysis for a specific project. This could include making considerations for audience groups with:

- Neurodiverse needs
- Physical needs
- Needs related to sight (i.e.. Colour blindness)
- Childcaring responsibilities
- Needs linked to faith (e.g. Dietary requirements)
- Accessibility should also consider aspects such as varying reading ability, audiences for whom English is not their first language, and the financial circumstances of individuals.

Engagement Proposals

Imaginative proposals for involving local communities from both the developer and innovative, creative means of disseminating results are welcomed. Providing public-facing experiences will benefit all stakeholders, with the public at the forefront. The form this takes will depend upon the audiences, type of site, and the type of archaeology expected/encountered. The process of archaeology (including boreholes, historic building recording, artefact analysis, working on construction sites) can be as interesting to non-practitioners as the results.

An Evaluation Strategy for engagement should be created as part of the project design stage. It should include an understanding of the current situation as a baseline against which SMART targets can be measured.

Opportunities might include learning, employment, skills, place shaping and community networks – see Table B1 below.

Learning for all ages

Working with nurseries, schools, colleges, further education providers and adult learners is strongly encouraged, particularly when there is a nearby education provider or the archaeological work is taking place on school grounds.

The Greater London Authority supports various initiatives including supporting young people with digital upskilling and its London Schools Atlas has useful information about attainment and attendance, as does Historic England's heritage schools programme. Relevant consent and ethical considerations should be developed before working with young people.

It is vital to establish working relationships with teachers prior to the development of educational packages, so that they can be engaged in that process. Key to this is identifying areas within the national curriculum that can be linked to the archaeological work – not just history, but maths, science, art, citizenship and many other subjects can be relevant at all levels of the curriculum.

Local groups, museums and libraries will have links with education providers or have education officers that can be utilised. The Council for British Archaeology provides useful guidance for working with groups.

Table B1: Opportunities for delivering and evaluating public benefit

No	Public Benefit and Social Value	Activity Options	Measuring Success/ Performance Indicators
1	Supporting wellbeing through participation in archaeology	Identify beneficiaries & establish community focus groups Identify local needs through consultation with local people Enable people to share their stories, memories, images and videos Create wellbeing activities (walks, handling sessions) Engage public via site visits or interactive activities	An Evaluation Strategy should be created as part of the project design stages. It should include an understanding of the current situation as a baseline against which SMART targets can be measured. This may include information such as demographic data from existing surveys, the Census and local authorities. Evaluation reports should include aims and objectives and methodology, such as where and how events were advertised. The results should combine qualitative and quantitative information, some examples of which are provided below. The conclusions and recommendations should include lessons learned and recommendations for further actions. What is the legacy of the project? Short case studies with images are useful. The results should be shared with participants and potential participants eg with a 'You Said, We Did' web page. Do not undertake a survey or ask for feedback unless the results will actually be used and ideally fed back to participants. **Quantitative** Contacts database of individuals/groups Number and type of events Number of individual participants Number of groups involved Outputs, eg amount of materials made accessible **Qualitative** Collate feedback Type/demographic of participants – eg students, specialists, cultural background Survey participants / potential beneficiaries Ascertain outcomes – short/medium/long term eg how participants have benefitted Media coverage / awards
2	Enhancing a sense of place, local identity and social cohesion	Engage community members by hosting events, exhibitions or other activities Produce printed or digital info sheets to summarise details of the project for the community	
3	Supporting growth to the local community including creative industries	Work with developers and designs to explore ways to promote heritage in the development Provide work experience, mentoring and trainee roles in heritage and associated occupations	
4	Placemaking	Plan performances, workshops and talks to promote and interpret knowledge of the local heritage	
5	Supporting individual and community education and skills	Provide participation opportunities or workshops that help identify, engage with and interpret the historic environment Consultation over research design, and outputs Provide educational materials for schools and colleges	
6	Supporting low carbon economies, health and wellbeing	Develop a CRP Use the archaeology to discuss climate change in the past and present Support staff to avoid single use plastics Realise if the heritage asset can contribute to low carbon strategies	
7	Widening cultural participation	Develop a series of activities to improve promote participation through heritage based activities Add informative displays or graphic panels around site Focussing on diverse stories through heritage; providing accessible content	
8	Partnerships across sectors	Provide an accessible platform for enhancing communication and accessibility to information Organise events e.g. online briefings, meetings, or other focus group activities	

During fieldwork

Involvement in the archaeological process can help people develop a sense of stewardship with an area. This contributes to social cohesion and is an opportunity for people to develop new skills and abilities. Opportunities for involvement in fieldwork projects should be explored where practical and Health and Safety obstacles that could be overcome should not be used as an excuse.

One of the easiest and most cost-effective means of engaging the public is to allow people the opportunity to observe excavation areas during open days or invitation to events. Sufficient written information and explanation by archaeologists should be available.

Advance publicity and signage are essential. Links to project websites, blogs and social media are strongly encouraged, updated to show the evolution of the project and significant finds. Accessibility is a key consideration.

Means of on-site viewing could include the following:

- Viewing platforms;
- Viewing windows in fences;
- Interpretation cabins;
- Illustrated hoardings to engage passers-by;
- Artefact and environmental displays;
- Photographic displays;
- Explanatory panels;
- Explanatory leaflets;
- Site lectures;
- Site tours;
- Open days
- Live video feeds

Some projects have the potential to involve participants directly in the fieldwork. This could involve digging test pits, survey, or building recording. Care should be taken to ensure that volunteer engagement is appropriately managed and does not supplant professional archaeologists. CIfA's Policy Statement The Use of Volunteers and Students on Archaeological Projects should be consulted beforehand.

Hands on activity does not need to be confined to work on site; for example, artefact handling, pot washing, environmental sorting and archive preparation can all be adapted to support wider activities for community participation.

Training programmes and apprenticeships that bring groups not well- represented in the sector are also encouraged.

Publicity and communication

While an appropriate level of reporting should be the result of any investigation, there is much to be gained through the immediate communication of fieldwork. Discoveries made during post-excavation and analysis may also be of public interest, as well as the final conclusions and interpretation of a project. Local press and borough websites or letter-drops to residents can be an excellent way of distributing news and event invitations.

Media coverage of archaeological findings is encouraged, as this has the potential to reach a large audience quickly and easily. The potential for positive public relations for the developer should not be discounted. Outputs should be discussed with the planning applicants/owners/developers in advance to ensure content has been approved.

Social Media campaigns are an easy and effective way to ensure information about archaeological projects is reaching wider audiences. There are a range of platforms that may be more suited to specific audiences identified through the audience mapping exercise. The GLHER/*Arches* front pages can also be used for dissemination of stories and finds.

B.4 Environmental policy and carbon reduction

The Climate Change Act 2008 state that the UK should be net zero by 2050. The UK's *Net Zero Strategy: Build Back Greener* outlines ways in which each sector can transition to a low carbon economy for a greener, more sustainable future. This includes supporting local climate action and empowering the public and businesses to make green choices, aiming to achieve net zero by 2050. The GLA also sets out Pathways to Net Zero Carbon by 2030 | London City Hall and energy hierarchy terms through its Be Lean, Be Clean and Be Green initiative.

Archaeological deposits contain embodied carbon whilst archaeological work generates greenhouse gas emissions. Archaeological organisations should work closely with planning applicants/developers to ensure environmental impact is minimised where possible. Examples of steps to reduce carbon emissions include identifying if buried deposits (e.g. peat or wood) containing embodied carbon would be affected and if so, reducing impact on these soils, using public transport or low/no emission vehicles, selection of materials, waste management, use of non-fossil fuel plant, storage of digital data and energy efficiency. Retention and discard policies for collecting and storing finds and data are applicable.

Within CIfA's *Standards and Guidance*, planning applicants/developers and archaeological organisations should have a Carbon Reduction Plan (CRP). CRPs are completed in compliance with PPN06/21 as published by the Cabinet Office and DCMS (2021). The UK Government has guidance for the *Technical standard for Completion of CRPs* to detail 'high level information that demonstrates your compliance with the measure'. CRP templates are available.

We encourage archaeological organisations to contribute to their client's carbon management strategies and to use the CIfA Carbon Reduction Table January 2024 (archaeologists.net) and sector-specific archaeological carbon measurement tools as they become available (CIFA Carbon calculator, FAME Carbon Calculator (in prep)). Where appropriate (usually for larger/higher impact projects) GLAAS may request evidence this has been done.

C Archaeological investigation and dissemination

This section provides further detail relating to Section 4 of Part 1 – Archaeological interventions.

C.1 Assessing archaeological potential and significance

Scope of the Desk Based Assessment (DBA)

The DBA should cover the elements listed in CIfA Standard and guidance for historic environment desk based assessment tailored to the site as set out below.

Central London contains a high density of archaeological sites and a more tightly focused study area is often applicable than in Outer London The online GLHER may be used to get a preliminary understanding of the character of the historic environment, but this should never be a substitute for a full GLHER search.

As a minimum, the GLHER should be searched for known archaeological sites and findspots – See **Appendix A** for sources for specific site types and **Appendix D** for GLHER data.

Where early consultation concludes that a site has little or no archaeological interest, the scope of the DBA may be reduced to a simple Archaeological Statement complying with the NPPF's minimum requirement to consult the local historic environment record.

Early consultation can also help define the scope and focus of a DBA so that it provides the information required for planning decision-making. Consideration of published Archaeological Priority Area descriptions, the London site-types described in Appendix A, and other online sources combined with professional expertise and judgment should enable DBA's to be tailored to the site rather than generic.

Where relevant, a DBA should:

- Refer to Appendix A which provides guidance and sources for researching specific site types.
- highlight at an early stage elements of the historic townscape or landscape that are significant so that they can influence design; and
- identify local stories and themes that are relevant to local communities, heritage, cultural and planning policies and archaeological research frameworks. See steps 1 & 2 in Project Stages for Engagement above.
- Given the variety of geology encountered across London, both the surface and drift geology should be considered, and how this may affect archaeological potential and survival. Discuss the drift geology layers and the implications both for the associated archaeological chronologies and for preservation. This will inform an assessment of whether environmental and other remains will be present and their significance. Include relevant information available from on site and/or nearby archaeological and geotechnical investigations and BGS online borehole logs.
- Reference should be made to relevant national, regional and local planning policies to demonstrate how the archaeological assessment engages with them but there is no need for long verbatim transcriptions of published policy (and if provided such transcriptions are best placed in an appendix).
- DBAs should consider other relevant documents to be included in a planning submission such as drainage proposals, contamination and cultural plans.

- Assess the likely impact of modern groundworks (e.g. basements, quarries, major service runs etc.) mapping their extent and depth wherever possible.
- A site visit should always be undertaken unless in exceptional circumstances such as where there are safety concerns or security restrictions. The DBA should include relevant photos and a short description of the current condition of the site and nature of any buildings, and the topography of the surrounding area. It should be used to confirm any physical features which may have compromised archaeological survival and check any constraints on the scope of subsequent fieldwork. The depth and extent of basements should be established.

Building assessment

A historic building assessment should provide a description of the building or structure and assess its significance and value by understanding its character, history, dating, use, form and development. An assessment should also consider context and setting along with any ancillary buildings, external spaces and buried components relating to the building. Fixtures and fittings, such as machinery on industrial sites, may also be significant and should be noted where relevant.

Any need for Historic Building Recording should be identified in the DBA.

If buildings are de-scoped it should be because they are clearly not of archaeological interest rather than simply because they are above-ground structures.

Assessing significance and potential

Information on undesignated archaeological assets should be sought from the GLHER and local planning authority, such as local heritage lists and archaeological priority areas (APAs). Information on statutorily designated conservation areas is available from the local authority. The National Heritage List for England is a register of all nationally protected historic buildings and sites in England - listed buildings, scheduled monuments, protected wrecks, registered parks and gardens, and battlefields.

Assessments of significance should have regard to Historic England's *Conservation Principles,* and are covered in *National Planning Policy Guidance*, *Managing Significance in Decision-Taking in the Historic Environment* (GPA2) and *Planning and Archaeology: Historic England Advice Note 17* (HEAN 17). National designation criteria set out in a DCMS statement 'Scheduled Monuments & nationally important but non scheduled monuments' and Historic England's scheduling selection guides should be used to consider whether an undesignated heritage asset is or could be of demonstrably equivalent significance to a scheduled monument.

For judging regional and local significance, *A Research Framework for London's Archaeology 2002* (MoLAS, 2003) should be considered, and any relevant APA description. Any local research aims as well as those for the surrounding administrative areas may be relevant as may research frameworks for neighbouring regions for London's outer borough. Thematic Research Frameworks that can reflect national topics may also be relevant: The historical character of an area would incorporate intangible heritage as well as tangible assets. For sites close to the Thames, the *Greater Thames Estuary Research Framework* will also be of use.

Local archives and research frameworks should be consulted, and for sites in APAs and nearby, the provide useful background. In some locations, the Archaeological Adviser may

require additional information or focused specialist research.

The term 'potential' is used to refer to the likelihood that as yet unidentified heritage assets are present. The concept combines the probability of occurrence with the significance if found (e.g. on a deep alluvial site a prehistoric timber trackway might be considered possible - not probable – but of high significance if present). Scale of development is another factor because generally larger sites will be more likely to encounter previously unidentified assets – this is a reason they more often need pre-determination evaluation.

Assessing impact

Discuss the impacts of the scheme on the significance of archaeological remains. Assessment of harm is defined in the NPPF as substantial harm, total loss or less than substantial harm. Less than substantial harm is a broad category that is sometimes divided by degree. Developments are expected to avoid or minimise harm to significant heritage assets. In these cases it will be necessary to explore design options to avoid, reduce and, if possible, offset adverse impacts.

The report should assess the likely depth of stratigraphy (shallow or deep) and the extent of archaeological survival, which may vary across the site: On urban and brownfield sites, modern intrusions may have truncated earlier deposits. Plans or section drawings should be used to illustrate this. Include levels in both metres below current ground level and m OD. For large areas, the London Urban Archaeological Database (LUAD) survival characterisation typology may be helpful.

The impact on the asset as a whole[1] should be assessed, not simply the archaeology within the site. Impacts beyond the site area may include demolition, preliminary and enabling works, new services and drainage (including attenuation tanks), heat pumps, underground bins, remediation works, landscaping and public realm works, energy and refuse strategies in addition to new foundations and basements.

Consider the likelihood of alterations to drainage patterns that might lead to in situ decomposition or destruction of archaeological remains not directly affected by construction but which are reliant on moisture levels for their survival. Mention any impacts on the setting of nearby heritage assets, and the historic character of the area of the site as appropriate.

[1] Identifying the 'whole heritage asset' will not always be obvious if it is only partially understood. Reference to national designation guides and local APA descriptions may help as will consultation with the Archaeological Adviser. Some sites will affect multiple assets with different degrees and types of significance.

Illustrations

All desk-based assessment reports should be accompanied by the following:

- a site location plan, indicating site north and based on current Ordnance Survey large-scale mapping, clearly showing the site boundary, National Grid References should be included on detailed location maps;
- GLHER data as a map;
- Relevant sequence of historic and Roman/medieval reconstruction maps at appropriate scale;
- Early prints, paintings and photographs with views of historic buildings and streetscapes that may complement map evidence, and could also be useful for public engagement;
- bespoke indicative plans and/or sections to illustrate higher or lower archaeological survival or potential, and impacts of development;
- a deposit model with OD levels where relevant, and/or plans showing natural topography and channels/high points;
- Planning applicant/developer's proposal plans and sections, engineering drawings as appropriate.

Stakeholder engagement

When public-facing aspects of a project are proposed, it is suggested that end-users and other stakeholders are consulted early in the development process, and. developers and site contractors should also be engaged in this process. The London Museum is also a stakeholder for long term engagement and should always be consulted early in the process where proposed public benefits may affect them, as required by the CIFA toolkit. See Appendix B3 on Public Engagement.

Conclusions and recommendations

Summarise the results of the assessment and outline any likely requirements for further investigation with justification. Additional information from the results of field evaluation may be necessary prior to the determination of planning consent. Consultation with the Archaeological Adviser will confirm what is likely to be required to inform decision-making, and what can be carried out under a planning condition.

Identify potential social value and public engagement opportunities in connection with the development and/or the archaeological fieldwork which may help to offset the loss of archaeological remains, including the benefits of archiving the site. Note where heritage benefits may contribute to any relevant Culture Strategy or Plan.

C.2 Designing archaeological fieldwork

Evaluation strategies should be based upon the desk-based assessment of archaeological potential, development impact and the type of site involved (deep urban, industrial, greenfield etc.). They should be tailored to provide the information required for decision-making.

Post-consent mitigation strategies should cover both preservation and investigation with related public engagement as appropriate. Investigation strategies should be tailored to achieve research objectives, not simply 'preservation by record'.

All archaeological projects should be designed and undertaken by a named competent person or organisation. This will normally mean a Member or Registered Organisation of the Chartered Institute for Archaeologists and may also cover recognised or qualified experts in specialist fields.

All written schemes of investigation (WSI) should be agreed with the Archaeological Adviser prior to implementation. WSI's prepared to comply with planning conditions must be formally approved by application to the local planning authority.

Initial non intrusive investigations

Non intrusive investigations such as geophysical survey or fieldwalking can form an initial stage of evaluation and it will usually be sufficient to agree the methodology rather than needing a full WSI.

Types of investigation and activities detailed in a WSI

Evaluation and excavation trenches should be designed to cover a sufficient sample of the site to answer the research questions. A simple percentage sample is often not appropriate, especially on deep urban or alluvial sites. Where the potential and extent of surviving archaeology is poorly understood, the trench plan can be designed to cover an even spread of available site area – this strategy is most common on greenfield sites. Where the potential location of archaeological features has been identified, trenches should target these features. A combination of these two approaches may be appropriate.

Monitoring of geotechnical works can inform and/or complement archaeological evaluation.

A project design for a large-scale development taking place over several phases and/or a long period of time, may benefit from an overarching WSI, followed by site specific WSIs for the different phases.

Format of a WSI

The WSI should be relevant and proportionate to the scale of the fieldwork, comprehensive and accessible; everyone involved in the project, the client, main works contractor, the archaeological site team and the Archaeological Adviser, should be clear on the requirements outlined.

The WSI should include the planning context for the work noting if it is being undertaken pre-determination or to address planning conditions, or in response to other regulatory regimes such as Scheduled Monument Consent.

The WSI should be prepared in accordance with Historic England's Good Practice Advice and CIfA Standards and Guidance. Each of the CIfA universal guidance for fieldwork documents include recommendations for the contents of the WSI in the project design section - for excavation, field evaluation and monitoring and recording.

A site-specific environmental sampling policy, and/or finds collecting policy should be included in WSIs where appropriate, and particularly important of site where lithic scatters are expected, for example.

The WSI should contain figures showing locations of archaeological evaluation or mitigation areas and any known site constraints, such services information, which may affect the location of evaluation or mitigation areas. Contingency arrangements should be specified if necessary.

The WSI should reconcile constrains due to Health and Safety considerations and the need to address archaeological aims and objectives. Where practicable, safe systems of work should be put in place to facilitate archaeological investigations.

A Data Management Plan should also be included in the WSI following *Dig Digital guidance*.

For London, there is the additional requirement to include the following as appropriate, although these elements should still align with the CIfA Standard:

The Cover and title page should include:

- Site/Project name;
- Location/Address and postcode;
- London Borough;
- Site code (obtained from London Museum);
- Planning application reference and condition number if relevant.

An executive summary will outline the key elements of the investigation. It should make reference to any consultation which has taken place with the Archaeological Adviser and the advice given.

The Methodology should consider the following in relation to archaeological characteristics that are often encountered in London, building on the results of any DBA:

- Contamination of former industrial land: see Historic England guidance on archaeology and land contamination;
- Working in or near derelict buildings;
- High water tables;
- Weathering of deposits and detail on hand cleaning;
- Environmental sustainability of large scale excavations;
- Preservation in situ;
- Engagement with local interest groups;
- Proposals for delivering public benefit
- Early and enabling works/temporary works.
- Depth and stabilisation of trenches - whether unsupported, stepped or shored. For deep trenches, water removal may be needed to sample the lowest deposits.
- Health and safety issues - confined spaces for example

- Geoarchaeological boreholes for deep alluvial deposits, where a sampling strategy for environmental deposits and ecofacts should be prepared by the relevant specialist.
- For sites with Palaeolithic potential, consult a Palaeolithic/Pleistocene specialist and refer to relevant Historic England guidance.

Site preparations by the Principal Contractor should be restricted to above ground demolition of non-significant structures only – protective measures (fencing, signage etc) may be required to protect significant structures or locations.

Enabling works such as slab removal, foundation grubbing out, contamination remediation, test pitting, are subject to archaeological monitoring unless otherwise agreed in the WSI. Groundwork associated with underpinning, piling and installation of other foundations would normally also be monitored, although monitoring piling is generally not required. On some sites, archaeological excavation may be required prior to groundworks which might normally only be monitored.

Preservation in situ

Preference will be given to preservation *in situ* for archaeological remains, particularly when of national or international significance.

Where archaeological remains are to be preserved *in situ,* a specification will be drawn up in order to adequately protect the remains from deterioration, for example from changes to groundwater levels or load impacts. The Archaeological Adviser, the Historic England Science Advisor and where appropriate the Historic England Inspector of Ancient Monuments should be consulted on the methodology. The London Museum should also be consulted and responsibility for long term maintenance considered. If remains to be preserved in situ also form part of the archive, discussions with the London Museum should be carried out in order to reconcile the records to reflect this situation.

Consideration should also be given to the provision of monitoring for conservation purposes and to prevent harm during construction works.

In the case of exceptional remains, provision for public viewing or access should be part of the development proposals. Where remains are displayed, interpretive planning, site interpretation and exhibition design should be considered.

Where the archaeology has been removed, or remains reburied, the use of graphic panels, mobile downloads or other forms of display can be used to communicate research findings, new discoveries and/or archaeological understandings of the local area. Archaeological organisations are urged to seek advice from specialist heritage interpretation groups if such facilities are not available in house.

Refer to Historic England Guidance on preservation in situ and the need for a preservation assessment.

Post excavation reporting

The need for post excavation reporting and archiving within a specified timeframe should be made clear in the WSI.

The requirement for a formal stage post-excavation assessment to be followed by analysis and archiving within a specified timeframe should also be stating in WSIs for excavation and watching briefs where appropriate. Post-excavation assessments should normally be specified as being completed within 12 months of the completion of fieldwork, except for large—scale projects where a somewhat longer timeframe may be agreed with the Archaeological Adviser.

Specific provision for finds or environmental specialist, or conservation work, should also be included in the WSI when necessary

C.3 Types of archaeological work

CIfA guidance

The following needs to be born in mind both when designing and when undertaking fieldwork projects in London. This list is not exhaustive and site-specific liaison with the Archaeological Adviser is advisable.

See **Appendix A** to assist with planning works on specific archaeological site types most commonly encountered in London.

Table C1 references the relevant CIfA guidance for each phase of works. Each of the CIfA guidance for fieldwork documents includes recommendations for the contents of the WSI in the project design section.

Table C1 Types of archaeological intervention and CIfA guidance

Intervention	Programme	Purpose	Relevant CIfA guidance
Evaluation	Pre or post planning application	To assess the archaeological resource and inform decision making, including the need for further fieldwork	Standard and guidance for archaeological field evaluation
Historic building, structure or earthwork survey	Prior to planning or listed building / scheduled monument consent	To assess the archaeological resource and inform decision making, including the need for any recording and intrusive investigation	Standard and guidance for the archaeological investigation and recording of standing buildings or structures
Geophysical survey	Pre or post planning application	To assess the archaeological resource and inform decision making, including the need for any archaeological fieldwork.	Standard and guidance for geophysical survey
Archaeological monitoring and recording (watching brief)	During enabling or development works, as condition of planning consent	To mitigate the impact of development on significant archaeological remains, by providing a record in accordance with research aims.	Standard and guidance for an archaeological watching brief
Excavation	Prior to development works, as a condition of planning consent	To mitigate the impact of development on significant archaeological remains, by	Standard and guidance for archaeological excavation

		providing a record in accordance with research aims.	
Historic building recording	Prior to demolition or change, as a condition of planning permission or listed building consent.	To mitigate the impact of development on structural remains, by providing a record in accordance with research aims. May include intrusive works.	Standard and guidance for the archaeological investigation and recording of standing buildings or structures
Post excavation assessment	Following completion of one or more phases of archaeological work.	To quantify and present the results of one or more phases of work at a site/s, to assess the results against research aims.	Standard and guidance for the collection, documentation, conservation and research of archaeological materials
Updated project design	Usually as part of the Post Excavation Assessment report, but in some cases may be a standalone report.	To identify the significance of the results and recommend a programme of further research and analysis, leading to dissemination, engagement and archiving.	Standard and guidance for the collection, documentation, conservation and research of archaeological materials

Geoarchaeological sampling and analysis

In some areas, geoarchaeological investigation is required to sample and map the deep peat and alluvial deposits of the Thames floodplain and London's historic rivers, identifying Palaeolithic and Pleistocene gravels within the Greater London landscape. This contributes to the interpretation of the archaeological record by describing site formation processes, and the creation of deposit models.

Geoarchaeological sampling and analysis can be used as mitigation in some circumstances where there is palaeoenvironmental potential. It can also take place alongside other archaeological interventions which facilitate geoarchaeological sampling.

Geoarchaeological site sampling can consist of:

- Geoarchaeological boreholes; depending on the depth and purpose of sampling, consider what drilling rig is most appropriate. It is necessary to determine whether samples can be opened or remain closed for example if Optically Stimulated Luminescence dating is to be considered;
- Bulk sampling;
- Section recording with monolith tins;
- Deposit sieving.

The Archaeological Adviser and the Historic England Science Advisor should be consulted regarding the quantity of samples and methodology for sampling, and to confirm whether the following apply:

- Geoarchaeological samples taken from evaluation boreholes are sufficient and need to be taken forward to post excavation, analysis and subsequent publication;
- In addition to the geoarchaeological samples taken as part of the evaluation, further trenches, test pits or boreholes need to be carried out to complement or enhance the data from the evaluation sample;
- A full geoarchaeological sampling strategy needs to be outlined for the site where

no previous geoarchaeological investigation was done; this may include boreholes, trenches and test pits.

Geoarchaeological sampling will lead to a palaeoenvironmental assessment, analysis and publication. There are multiple analytical methods that can be used to answer geoarchaeological research questions. The Historic England Science advisor should be consulted at an early stage to confirm what methods are required to guide the geoarchaeological sampling process on site and processing in the laboratory. In the event that cores are lost or damaged before assessment/analysis can be undertaken/completed, replacement cores may be required. Wet samples cannot currently be stored at the London Museum and so any proposed archiving should be carefully considered.

Common sampling and analytical methods are:

- Carbon 14 dating;
- Optically Stimulated Luminescence dating;
- Insect analysis;
- Diatom, ostracod, pollen, mollusc, foraminifera analysis;
- Plant macro assessment;
- Wood identification;
- PH measurements.

Geoarchaeological investigation, sampling and analysis is not limited to the above and Historic England has issued geoarchaeology guidance providing greater detail.

Where there is a high potential for paleoenvironmental remains, such as where deposits of alluvium are present, geoarchaeological boreholes may be a stand-alone evaluation method where geoarchaeology is the only interest. This method is, however, often used in conjunction with (or prior to) archaeological trial trenching.

The borehole locations will be planned to form a transect across the site and tie in with any other historical boreholes recorded in the vicinity of the site.

Palaeoenvironmental or geoarchaeological boreholes will be monitored by a suitable trained and qualified geoarchaeologist or an experienced archaeologist with demonstrable geoarchaeological training and knowledge.

The Archaeological Adviser, Historic England guidance on mapping buried deposits, and the Historic England Science Advisor should be consulted on the appropriate borehole methodology and scientific sampling strategy for the site, and these should be specified in the WSI.

A deposit model for the site will be produced using the results of the geoarchaeological borehole logs and any historical borehole data available. Results should be clearly illustrated using transect diagrams and contour maps.

Geophysical survey

Geophysics has limited application and reliability on London site types (see Appendix A). Where used, the geophysical survey method and survey area should be agreed in the WSI

with the Archaeological Adviser before commencement. A survey report will be produced including suitable illustrations which can be used to inform future archaeological fieldwork, in accordance with European Archaeological Council (EAC) guidance.

A geophysical survey report alone is unlikely to be sufficient to complete evaluation requirements.

Geotechnical investigations

Archaeological monitoring of geotechnical test pits and boreholes dug for non-archaeological purposes can rapidly assess the potential of archaeological deposits at an early stage, and may inform future work but are rarely sufficient to complete an evaluation.

Geo-technical investigations do not normally require planning permission nor do they constitute commencement of development so it is usually neither necessary or appropriate to submit a WSI for monitoring geo-technical pits only to the local planning authority for condition approval.

Trenches and trial pits

Where there is potential for archaeological deposits, a trench or trial pit evaluation is usually appropriate.

The investigation will not be at the expense of any structures, features or finds which might reasonably be considered to merit preservation in situ (or be in any way prejudicial to the protection of such remains), and where potential mitigation, including preservation, is still being considered. If necessary, it should be agreed with the Archaeological Adviser what archaeology can be removed in order to access earlier remains.

If using a mechanical excavator, use a wide blade, toothless ditching bucket capable of producing a clean and level surface. The machine will remove regular small spits, until the archaeological horizon is reached.

Deep trenches or trial pits are often required, especially in areas with deep urban stratigraphy or think alluvial deposits. Excavations will have to be made safe by either installing shoring or stepping in, although the latter is rarely viable option in an urban environment.

The Archaeological Adviser and the Historic England Science Advisor should be consulted if the sampling techniques divert from those agreed in the WSI.

Once trenches have been opened up and recorded, the Archaeological Adviser should be notified before backfilling.

Excavation

Archaeological excavation is particularly appropriate for sites in Greater London with high archaeological significance and potential; this is due to the complex stratigraphy often encountered in an urban environment.

No development activities should be allowed within areas designated for archaeological

excavation unless in accordance with an approved WSI.

For an archaeological excavation in an urban environment, consider the following:

- The use of single context recording to map complex stratigraphy;
- A sampling and recording strategy specific to the site i.e. burial excavation, palaeoenvironmental and Palaeolithic site etc.;
- Working with the contractor to design temporary works to allow safe excavation to depth and spoil removal;
- Decision making on processing and conservation on or off site;
- Procedure for preservation in situ of highly significant remains;
- Provision for monitoring exposed archaeological features as they weather out;
- Using paperless recording to reduce physical paperwork on site and make data integration more efficient at post excavation stage;
- Devising a public outreach and media strategy

Monitoring and Recording (Watching Brief)

Archaeological monitoring and recording, or a watching brief, is conducted during any operation carried out for non-archaeological reasons.

Monitoring and recording may be appropriate for a range of circumstances, such as very localised preliminary works in larger projects, or where a low potential for significant remains has been established through DBA and/or evaluation, in order to make a basic record during general ground works of any remains and deposits that are encountered. Archaeological attendance may be continuous or intermittent, as necessitated by the timing of operations on site, and may include specialist machine watching. Regular contact with the developer should be maintained to ensure appropriate coverage.

Monitoring and recording does not reduce the requirement for detailed archaeological recording or preservation in situ, should significant remains be discovered. Therefore, the project design should include a methodology for where and how further investigation would take place. If unexpected significant discoveries are made, the Archaeological Adviser should be notified.

If the research potential and likelihood of discovering significant archaeological remains is low, archaeological monitoring and recording should not be specified.

In some cases, monitoring and recording may be carried out on sites with known significant archaeology in order to safeguard its preservation, by:

- Monitoring a contractor’s work to ensure preservation *in situ* of an asset;
- Monitoring the removal of archaeological assets from site by another contractor, such as the deconstruction and removal of building remains by heritage conservation specialists, removal of burials by exhumation contractors, removal of archaeology from deep water, confined spaces, or contaminated deposits that require specialist training.

Monitoring and recording should be informed by research questions and objectives to focus the investigation. A clear scope enables the archaeologist on site to record and intervene with confidence where required, especially where works are intermittent.

When undertaking monitoring and recording:

- Clearly identify the extent and levels of the deposits that require recording and/or sampling;
- Determine how relevant deposits, finds and features are located/surveyed such as regular visits by a surveyor, using the contractor's surveyors etc.;
- Formulate research questions and aims
- Establish if there needs to be clear provision for excavation/preservation as part of the scope;
- Establish contingency arrangements in the event of significant discoveries;
- Identify any specialisms that may be required i.e. geoarchaeology, palaeolithic specialist, osteologist etc.;
- Provide specifications for the contractor such as use of a blunt edge bucket, lighting, water removal etc.;
- Put agreements in place with the client/contractor regarding the programme and areas of the watching brief.

Monitoring and recording will require a fieldwork report. Should significant remains with further potential be discovered, a Post Excavation Assessment and Updated Project Design may be required.

Strip, map and sample

Strip, map and sample excavations are beneficial to excavate and record wider archaeological landscapes and establish relationships between features and finds in a larger area and is often used on greenfield sites.

This mitigation methodology is appropriate for large sites without complex stratigraphy and where an extensive area can be stripped for archaeological recording. This method is therefore more commonly used in the outer boroughs or on urban sites with one main phase of archaeological interest where the relationship between features is key.

No development activities can take place in the area of a strip, map and sample excavation until archaeological work has been completed in a defined area. If phasing of the archaeological works is required to facilitate construction works, the Archaeology Adviser should be consulted on the size of the proposed mitigation areas and phasing.

The following should be considered for a strip, map and sample exercise:

- Use of single or multi context recording;
- Preparing and rolling out a sampling and recording strategy for features, structures, find scatters etc.;
- Working with a contractor to coordinate the strip, avoid tracking over archaeology, spoil mounting and backfilling;
- Avoiding the stripping of wet deposits;
- Weathering of sites for an appropriate period can help reveal features;
- Procedure for preservation in situ of highly significant remains;
- Using paperless recording to reduce physical paperwork on site and make data integration more efficient;
- Devising a public outreach and media strategy for sites that can generate public interest.

Environmental Sampling

Environmental evidence can be found in archaeological deposits and features on most site types and sampling strategies should follow published Historic England guidance on Environmental Archaeology. Additional site-specific advice is available for Historic England's regional Science Advisors.

Scientific Dating

There are many established techniques for scientific dating or absolute dating which should be identified in WSIs and used where appropriate. There are several types of Scientific Dating techniques available for particular types of deposits or features which the Historic England Science advisor and provide advice. Techniques include:

- Radiocarbon dating
- Dendrochronological dating
- Luminescence Dating
- Archaeomagnetic Dating

Human Remains

On sites where human remains are anticipated, appropriate permissions should be put in place to allow disarticulate human remains to be lifted during evaluations to enable the archaeological objectives to be achieved. Any articulated human remains encountered should normally be left in situ, covered and protected, although it may sometimes be necessary to excavated articulated human remains to achieve the objectives of an evaluation. The excavation of articulated human remains during an evaluation should only be done by agreement with the archaeological adviser, and with relevant permissions in place. Unexpected human remains encountered during excavations can only be removed once the relevant permissions have been received and the Archaeological Adviser notified.

Excavation of human remains can only take place under relevant Faculty jurisdiction, Ministry of Justice licence, environmental health regulations and, if appropriate, in compliance with the Disused Burial Grounds (Amendment) Act 1981 or other local Act. Adequate screening and security should be provided. A strategy for the removal, assessment, analysis and reburial/retention for human remains should be agreed with the Archaeological Adviser, Science Advisor and the London Museum and included in the Written Scheme of Investigation. Obtain relevant permissions before works commence. The Church of England archaeologist should be consulted where necessary.

Metal detecting

Metal detecting can be useful during fieldwork on many site types and a structured approach is expected on sites where significant metalwork is likely to be found, particularly Roman sites and medieval waterfront sites.

Specialist metal detector input should be obtained for battlefields and comparable historical event sites. Scanning and record taking should be undertaken in liaison with archaeologists.

The metal detecting strategy will assess the potential for metal finds and ensure adequate opportunity for their recovery by:

- Regular scans over exposed areas or spits within the areas of controlled

excavation, with more focused attention as appropriate.

- Concentrated scanning where rapid excavation (hand and mechanical) of large deposits is taking place. Metal detectors may be used over the exposed soil horizons and/or the spoil arisings from excavations. Spoil should be placed on boards for scanning.
- A systematic record of recovered metal finds should be made during the scanning process, identify the context number from each relevant deposit, and the basic location of each find and its height (m OD). This data should be cross-referred with the relevant site records.
-

A finds retention policy should be agreed with the Archaeological Adviser and the London Museum. Detected finds should be labelled appropriately and bags/boxes clearly marked in order to clarify what proportion of finds was found through detection and what proportion by hand collection. Context sheets should also be noted whether metal detecting has taken place.

The latest Treasure Act Code of Practice (3rd Revision) includes an expanded definition of treasure; details of procedures and responsibilities on those undertaking professional archaeological work; the fact that anybody working on a formal archaeological project (including volunteers) automatically loses any claim to a reward under the Act.

All finds identified in the Treasure Act (1996) and the Treasure (Designation) Order (2002) as being treasure will be recorded, removed to a safe place and reported to the local Finds Liaison Officer or Coroner. If the finds cannot be removed from site the same day as discovery, provision against theft should be undertaken.

Building recording

Building recording is undertaken to mitigate the loss of historic fabric or character resulting from approved demolition or alterations. The scope of recording work (Level 1, 2, 3 and 4) should be based on the assessment of the building and will be recommended by the Archaeological Adviser or Conservation Officer.

Intrusive investigation may be required, e.g. to determine construction phases or for paint analysis.

Recording should follow the same processes and produce the same outputs as other forms of archaeological fieldwork, for example, an ordered archive and a report, leading to publication if appropriate.

The recording methodology should be derived from Historic England guidance and set out in a WSI approved by the Archaeological Adviser.

Survey of heritage assets

Examples of surveys of visible (unburied) heritage assets include foreshore surveys, gravestone recording, earthwork surveys, and recording of assets in the public sphere such as plaques, railway sidings, statues, fences etc. These would normally be non intrusive.

The methodology should be set out in a WSI or project design approved by the Archaeological Adviser. Methodologies that can be considered include:

- Photogrammetry;

- Laser scan point cloud model;
- Drone recording;
- Community crowdsourcing such as foreshore projects, gravestone recording, local heritage asset recording.

C.4 Post excavation, Reporting and Archiving

Evaluation reports should include the results of all relevant fieldwork and draw on the results of desk-based assessment to provide sufficient information for decisions to be made during the planning process. An evaluation report should enable an appropriate archaeological mitigation strategy to be designed for the implementation of a consented development scheme.

Provision for a post excavation assessment (PXA) report should be made in all WSIs for mitigation fieldwork, although a simple post excavation report rather than a PXA is all that will be required of most watching brief and small excavations with results of low significance. For watching briefs or excavations with significant results, a PXA will be required that assesses the significance of archaeological remains and the potential for further analysis to contribute to the project's research aims following principles established in MoRPHE guidance and technical notes. The report should also identify any new research or other public benefit aims which the assemblage has potential to address. Opportunities to synthesise information from nearby or comparable sites, including previously unpublished data, should be identified. Statements of significance and potential at this stage should relate to the site archive, rather than to the site. Completion of the PXA is expected within 12 months of fieldwork unless an alternative timetable is agreed (normally for large, complex or multi-phase projects).

Specialist reports for ceramics should use London standard fabric codes to enable future analysis across mutable sites.

The Updated Project Design should propose any further analysis required to meet the updated research aims and how the results will be disseminated, including publication and archiving. For publications, a synopsis including an approximate word count should be included. Opportunities for public benefit, such as collaborations with academic and community partners and creative forms of dissemination, should also be explored. The Updated Project Design should include details of all tasks and resources required to carry out the project together with a programme.

There is an expectation that the organisation that undertook the field investigation will continue to see a project through to the final stages of reporting, dissemination and publication. For any variation, a revised WSI should be submitted to the local planning authority. An exception may be for large multi-phase or multi-site projects where a single, combined or synthesised post excavation programme would be more informative and cost effective. Such cases should be agreed with the Archaeological Adviser.

The Archaeological Adviser and/or the Science Advisor may monitor analysis and research at any point. It is recommended that monitoring points are tied into the work programme at appropriate stages within an agreed overall timetable. Archiving and accessioning to the museum will also be monitored by the Archaeological Adviser to ensure accessibility of the

archive to the public. Resources should be provided to cover the archiving and deposition of the site.

The Archaeological Adviser will only recommend the discharge of archaeological conditions once the Updated Project Design and programme for implementing the works have been agreed and written assurances that resourcing has been provided to complete the publication and archiving/deposition work.

Publication and dissemination

- The level and outlet for publication and dissemination should be agreed with the Archaeological Adviser. The results of the project should be published in a manner appropriate to the significance of the archaeology. Sites of significance should also be archived promptly in order to enable public access to the archive as soon as possible.
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- Careful consideration should be given to the scope of the publication and to ensuring that the results reach interested audiences. For some sites, more than one publication might be warranted. Publication may include articles in regional or other academic journals, standalone monographs and books. Journals which regularly publish the results of archaeological work in Greater London include *London Archaeologist*, *Transactions of the London and Middlesex Archaeological Society* and *Surrey Archaeological Collections*.
-
- Other forms of dissemination and engagement, which expand the audience for the project should also be considered. These may include web-based publications, social media, physical and digital exhibitions, talks, events and collaborative projects. Many of the local archaeological and historical societies have lecture series where the results could be presented. Site summaries must be submitted to the annual round up of the *London Archaeologist* and any appropriate county and period based national journals.
-

Submission of data to the Greater London Historic Environment Record

The results of all archaeological work will be made available to historic environment colleagues and the general public through inclusion in the GLHER. See **Appendix D** for further guidance on this requirement.

Archiving

The London Museum emphasise that they encourage contractors to have a continuous relationship with them throughout archaeological projects. Open communication with the archive should be carried out during all relevant stages of the work, not just at the end.

There are three levels of archiving:

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1. Sterile projects[2]: acceptance of the report by the Archaeological Adviser, the

[2] Archaeological archives from sterile projects | Chartered Institute for Archaeologists

GLHER and OASIS is sufficient. No further archiving necessary

2. Minor positive projects (most evaluations and watching briefs, small excavations producing results of low significance): No PXA needed. Acceptance of the report by the Archaeological Adviser, GLHER and OASIS. Deposit paper context archive plans and supporting documentation at the London Museum Stores or relevant local museum. Finds may be accepted by the London Museum if they match the museum's retention policies.
3. Positive projects (most excavations plus a few watching briefs with results of moderate to high significance). PXA required with updated digital and physical archive selection and deposition strategy. Deposit paper context archive, plans, finds and supporting documentation at the London Archaeological Archive. Deposit digital archive at a trusted digital depository – normally Archaeological Data Service.

CIfA provides a Toolkit for use by all archaeological practitioners who create, work with and care for archaeological archives.

The integrity of the physical site archive should be maintained. All finds and records should be curated by a single organisation, and all elements of a site (for example different evaluation and mitigation stages) should be fully integrated, even when the works have been carried out by different archaeological organisations.

The archaeological organisation will be expected to have the resources required for temporary storage of collections prior to their transfer to the recipient museum. This storage should be secure and appropriate to the material within the site's archive.

The physical site archive should be generally be deposited with the London Museum Stores within the timescales specified in the WSI and in accordance with current deposition guidelines. Valance House Museum should be considered for projects in the London Borough of Barking and Dagenham. Only in exceptional circumstances will other repositories be considered if they have suitable arrangements and will accept the archive. Archaeological organisations should adhere to the General Standards for the Preparation of Archaeological Archives Deposited with the Museum of London.

The relevant museum should be contacted to ensure they will accept the archive and the standards of the London Museum should be used for all museums in case they need to transfer the archive to the London Museum at a later stage. If an archive is to be sent to a different museum than the London Museum, the London Museum should be notified.

Arrangements for the curation of the archive, including a transfer of title or deposit agreement, should be agreed with the developer and London Museum prior to starting fieldwork.

An Archive Selection Strategy should be set out in the WSI for each project and updated in the post excavation assessment where one is prepared. Each strategy will need to be agreed with the Archaeological Adviser and the receiving museum. The Archaeological Advisers expect Archive Selection Strategies to follow a significance led model in accordance with the NPPF definition of significance as:

- Archaeological: retained material has evident potential for future research
- Architectural: retained material relates to significant aspects of buildings or

structures of recognisable interest
- Artistic: retained material displays artistic aspects (including as 'folk art')
- Historic: retained material is illustrative of past events, themes, social groups or particular individuals.

Options are for complete retention, selective retention, discard or dispersal. Dispersal involves handing materials over to other non-museum organisations for use in their work, for example education, public realm or art projects.

A statement should be made regarding the archive selection strategy, with input from specialists and other key stakeholders, in line with CIfA's *Archive Selection Toolkit*. Specialist reports should identify any material which has been discarded and that may be suitable for discard, subject to discussion with key stakeholders.

Human remains.

The WSI and burial excavation licence/approval should specify the intention to fully or selectively retain or rebury excavated human remains. Human remains less than one hundred years old are covered by the Human Tissue Act 2004 and are not treated as of archaeological interest. Ancient non-Christian burials should be retained in museum storage if they have evidential value. There is no presumption that historic Christian human remains will be reburied rather than retained for scientific study but the legal context, ethical/cultural sensitivity and practicality (for large collections) needs to be balanced with the scientific value of retention (see APABE, 2017: Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England) Other burial grounds (e.g. Jewish, secular etc) will require bespoke assessment of options.

The London Museum should be involved at an early stage if excavation and retention of large numbers of burials is being contemplated.

Digital archiving

Digital data forms a key element of modern archaeological project archives alongside and subject to the same professional standard as the physical archive. Properly managed and maintained it provides accessible information for education and research. An updated data management plan should be included, in line with CIfA's *Dig Digital guidance*. The digital archive should be deposited with a Trusted Digital Data Repository such as ADS. Trusted repositories can be found at CoreTrustSeal-AMT – it should be noted that the London Archaeological Archive is not a Trusted Digital Data Repository

D GLHER data sharing

D.1 Accessing GLHER data

The GLHER is available to view online but this is NOT a comprehensive dataset nor is it licenced for commercial re-use.

GLHER information is provided following the determination of an adequate study area. The study area size is dependent on the scale and nature of the proposed development and can be confirmed by The Archaeological Adviser. For sites in inner London the radius from the centre of the site would typically be between 150–300m. In outer London the radius is more likely to be of 250m–750m, or larger in areas where data is sparse. The Archaeological Adviser should always be consulted to agree a search radius for sites in the City of London or adjacent areas such as north Southwark.

Please note the following for the presentation of GLHER data:

- The GLHER search should be 6 months old or less, and the date of the search and licence details should be included;
- The GLHER data should be consistently referenced within the text and clearly displayed in an appendix table, or preferably a gazetteer incorporating the GLHER and other data relevant to the assessment. The gazetteer should use GLHER reference numbers and Site Codes for fieldwork. The full GLHER data need not be appended, since this is not a useful substitute for a gazetteer; Any new site identified during the research phase must be clearly marked as such.
- Present the GLHER data on a plan or plans showing the results of the search (events and monuments shown as polygons where practical), including the relationship of the site to APAs, along with any other features referred to in the gazetteer. In areas with large quantity of GLHER data, Consideration should be made to the most effective form of presentation which may involve separate plans for events, monuments, and even separation by period to help clearly present the data.
- Historic Landscape Characterisation coverage included in the GLHER data should be referred to.

The GLHER can supply GIS mapping of most archaeological interventions. Comparing the levels of archaeological deposits to the known and proposed basements and other major groundworks help to predict archaeological survival and the potential for waterlogged remains.

Reports and further information on archaeological interventions are available via the Archaeology Data Service (ADS), the GLHER officers and/or the archaeological unit that undertook the work.

If additional detail is needed on past investigations, published reports/grey literature on nearby excavations should be consulted from the archaeological archives of Historic England,ADS, and/or the archaeological archives held by the London Museum, and the archives of Barking, Redbridge or Newham for work in these Boroughs.

The GLHER for inner London is enhanced by the London Urban Archaeological Database (LUAD) which provides site and trench outlines/polygons for archaeological interventions. The UAD methodology is used to characterise urban time depth and survival/condition of deposits.

D.2 Submitting the results of investigations to the GLHER

The results of all archaeological work will be made available to historic environment colleagues and the general public through inclusion in the Greater London Historic Environment Record (GLHER).

Digital Reports

Provide all digital copies of reports as PDF/A documents, as this makes them suitable for long term archiving. PDF/A comprises two levels: PDF/A-1a (fully compliant with the ISO standard 19005-1) or PDF/A-1b (minimal compliance). Either level of PDF/A is acceptable for deposition with the GLHER. PDF/A files can be created by a number of commercially available software packages. Further information can be found on the website for the PDF/A Competence Centre http://www.pdfa.org.

Spatial Data

It is expected that the GLHER will be provided with Geographic Information System (GIS) files for the project showing the site outline, and trench/test pit location(s). Files can be submitted in.shp or GeoJSON formats. Ensure that the file contains, or indicates:

Attribute Field	**Notes**
Shape	Shape of spatial object – polygon, point, etc.)
OBJECTID	Data file number, next in sequence, 1,2,3…etc.
HER Event number	HER Event/Activity Record ID, where known and if applicable
Site code	Activity site code as issues by the MOLAA
Accuracy level	Accuracy level of recording 1-3 1: Outline derived largely from a digital source, i.e. CAD or GIS image, 2: Outline digitised from a hard copy or screen image, or 3: Site address/estimated extent for sites where no or poor mapping survives or where only a site address is available
Accuracy description	More information about accuracy, examples: *trench outline derived from CAD, or pit outlines digitised from a screen image.*
Scale	Scale at which the feature was digitised *1:2,500*
Date of entry	Date record created
Date of update	Date record updated, where necessary
Notes	Where additional description about the digitising is needed
SHAPE Leng	Spatial length of feature
SHAPE Area	Area of feature
Event Type	Type of activity undertaken, evaluation, test pitting, etc.
Comp Name	Name of organisation undertaking the work
Arches Link	The GLHER Online url to the HER record for the work undertaken

Images

The GLHER is not an archive, but may request a selection of digital exemplar images to illustrate work undertaken and help users of the GLHER to better understand the site(s) investigated.

Where possible, the TIFF file format is preferred for image creation, although if this not possible then high quality, with the lowest compression, JPEG files can be used, or RAW files converted to TIFF.

Images should be accompanied by metadata in the form of a csv, or MS excel file. As a minimum this file should contain the following information: • Author (the organisation or individual, if applicable) • Project Name • Site Code (if relevant) • Context No (if relevant). • Site/Monument Name • Feature Name (if relevant) • Short description of what the photograph shows • Date when photo was taken • Direction of view (indicate if view “From” or “Facing”) • Location of master/original photograph. • Copyright/Access Conditions.

Increasingly 3D models are being used by archaeologists to study, inform, and help protect heritage through sites such as Sketchfab, MediaGoblin, or Verge3D. Guidance on using and creating 3D models in archaeology has been produced by the Archaeological Data Service.

Where 3D models, scans, have been created of sites, features, or objects, and published online, the GLHER should be informed of the location of these images so the GLHER can link to them.

E Acknowledgements & Abbreviations

Acknowledgements

MOLA was commissioned by GLAAS to help update its archaeological guidance.

This draft guidance document draws on previous GLAAS guidance in the context of the National Planning Policy Framework and policy and guidance issued by the London Boroughs.

MOLA is grateful to GLAAS and other consultees for their advice and comments on previous drafts.

Abbreviations

ALGAO	Association of Local Government Archaeological Officers
APA	Archaeological Priority Area
BGS	British Geological Survey
CAD	Computer Aided Design
CIfA	Chartered Institute for Archaeologists
DBA	Desk based assessment
DCMS	Department for Digital, Culture, Media and Sport
DEFRA	Department for Environment, Food and Rural Affairs
GLAAS	Greater London Archaeology Advisory Service
GLHER	Greater London Historic Environment Record
GLIAS	Greater London Industrial Archaeology Society
GNSS	Global Navigation Satellite System
GPA	Good Practice Advice (planning advice series published by Historic England)
GPS	Global Positioning System
HEAN	Historic England Advice Note
HER	Historic Environment Record
ISO	International Organisation for Standardisation
LPA	Local Planning Authority
MCIfA	Member level Chartered Institute for Archaeologists
m OD	meters relative to Ordnance Datum
NPPF	National Planning Policy Framework
PPN	Procurement Policy Notes
RAMS	Risk Assessment Method Statement
WSI	Written Scheme of Investigation, better referred to as the Project Design although WSI appears in many planning conditions