



THE GOODSYARD

Environmental Statement Addendum Volume 2

September 2019 – Chapter 15 of 21

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CHAPTER 15: ARCHAEOLOGY

15.1 INTRODUCTION	
15.1.1	The Applicant has carefully reviewed the issues raised by the Mayor of London, the Boroughs and other stakeholders and consultees and is now submitting amendments to the Applications to address their feedback.
15.1.2	This has resulted in minor changes to size and location of basements and buildings however the plots remain largely unchanged please refer to ES Addendum Chapter 1: Introduction and Chapter 5: The Revised Scheme and Construction Overview , for the detailed explanation of the Revised Scheme.
15.1.3	<div>In broad terms, the proposed amendments for the Revised Scheme that may affect the archaeology assessment undertaken for the 2015 Proposed Development include:<ul style="list-style-type: none">the proposed basements are the same size and depth as previously assessed.basements for Building 1 and 2 and underground sitewide infrastructure have roughly the same footprint as Buildings F and G and A and B; andthere are no longer any basements proposed under Plots 4, 5 and 6 (C, D and E previously assessed).</div>
15.1.4	The assessment has been subsequently updated to reflect the above Proposed Amendments.

15.2 SCOPE OF ASSESSMENT	
15.2.1	This chapter of the Environmental Statement Addendum (ES Addendum) reports the findings of an assessment of the likely significant effects on buried heritage assets (archaeological remains) as a result of the amended scheme for the proposed Goodsyard Planning Applications (hereafter referred to as the 'Revised Scheme') in the London Borough of Hackney (LBH) and the London Borough of Tower Hamlets (LBTH).
15.2.2	This ES Addendum Chapter has been produced by Temple and draws heavily on the previous assessment and ES chapter produced by Museum of London Archaeology (MOLA). The chapter summarises the heritage planning policy context and the methods used in the assessment. It describes the baseline historic environment currently existing at the site and in its immediate vicinity; provides a statement of significance of known or possible buried heritage assets (sensitive receptors); evaluates the likely significance of environmental impacts on such heritage assets; identifies the mitigation measures required to prevent, reduce or offset any likely significant adverse environmental impacts and concludes the residual effects of the Revised Scheme.
15.2.3	The assessment has been informed by the results of previous archaeological investigations on the northern half of the site for the London Overground development in 2005–2007, and by a 2008 watching brief on geotechnical investigations in the southern half of the site. Archaeological building recording in 2003 recorded the main Bishopsgate Goodsyard railway buildings prior to their demolition.
15.2.4	This assessment deals solely with the archaeological implications of the development and does not cover possible built heritage issues, except where buried parts of historic fabric are likely to be affected. The chapter does not assess issues in relation to the setting of above ground assets (e.g. visible changes to historic character and views and of the townscape). Refer to ES Addendum Volume 2 Chapter 16: Built Heritage for a full assessment of built heritage assets.
15.2.5	As the operational (completed) development would not involve any activities that would cause additional ground disturbance, an assessment of operational impacts has been scoped out of this assessment. Consequently, this assessment is limited to impacts on buried heritage assets during the demolition and construction phases of the Revised Scheme.
15.2.6	The potential for archaeological impact interactions impact (Type 1 impacts) are discussed in Volume 2, Chapter 20: Effect Interactions of this ES Addendum. Combined cumulative archaeological impacts (Type 2 impacts) of the Revised Scheme with other development schemes are discussed later in this chapter.
Legislation and Regulations	
15.2.7	This assessment takes into account the following legislation:

- Town and County Planning (Environmental Impact Assessment) (England) Regulations 2011;
- The Ancient Monuments and Archaeological Areas Act 1979; and
- The Planning, Listed Buildings and Conservation Areas Act 1990.

Planning Policy

National Planning Policy Framework (2019)

15.2.8	This assessment has been compiled in accordance with the Revised National Planning Policy Framework (NPPF) 2019. Chapter 16 of the NPPF concerns the conservation and enhancement of the historic environment.
15.2.9	The NPPF requires heritage assets to be conserved “in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations” (para 184). It recognises that heritage assets are an irreplaceable resource and requires the significance of heritage assets to be considered in the planning process, whether designated or not (para 197). The contribution of setting to asset significance needs to be taken into account (para 189).
15.2.10	The NPPF states that local planning authorities should “require an applicant to describe the significance of any heritage assets affected”, and where heritage assets with an archaeological interest might be affected, “should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation” (para 189), taking this assessment into account when considering the impact of a proposal, “to avoid or minimise conflict between the heritage asset’s conservation and any aspect of the proposal” (para 190). It states that “a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset” (para 197). Developers should be required to “record and advance understanding of any heritage assets to be lost (wholly or in part)” and make the evidence publicly accessible (para 199).

The London Plan (2016)¹

15.2.11	<div>The London Plan (2016) is the strategic plan for London. Policy 7.8 - Heritage assets and archaeology states: <i>“Boroughs, in consultation with English Heritage, Natural England and other relevant statutory organisations, should include appropriate policies in their Local Development Frameworks for identifying, protecting, enhancing and improving access to the historic environment and heritage assets, memorials, and historic and natural landscape character within their area”.</i></div>
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The Draft London Plan (2018)²

15.2.12	<div>The Draft London Plan will be the strategic plan for London. Policy HC 1 - Heritage conservation and growth states that: <i>“Development proposals should identify assets of archaeological significance and use this information to avoid harm or minimise it through design and appropriate mitigation. Where applicable, development should make provision for the protection of significant archaeological assets and landscapes. The protection of undesignated heritage assets of archaeological interest equivalent to a scheduled monument should be given equivalent weight to designated heritage assets.”</i></div>
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Draft LBTH Local Plan 2031 (2017)³

15.2.13	The new Local Plan sets out how the Borough of Tower Hamlets will grow and develop over the next 15 years. It outlines how and where homes, jobs, services and infrastructure will be delivered to meet future needs and the type of places and environments we want to create. The Tower Hamlets Local Plan has now been submitted to the government to undergo an independent examination.
15.2.14	<div>This assessment also takes into account the following policy of the Draft Local Plan Policy S.DH3: <i>The Historic Environment</i> <i>“Development is required to conserve and enhance the Borough’s designated and non-designated heritage assets and their settings, this includes:</i></div>

¹ GLA (2016) The London Plan. Available at: <https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan/london-plan-2016-pdf>

² GLA (2018) New London Plan. Available at: <https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/download-draft-london-plan-0>

³ LBTH (2017) Tower Hamlets Local Plan 2031. Available at: http://towerhamlets-consult.objective.co.uk/portal/planning/newlp/new_local_plan_reg_19/local-plan-reg-19

- *World Heritage Sites;*
- *Conservation Areas;*
- *London Squares;*
- *Historic Parks and Gardens;*
- *Archaeological Remains;*
- *Archaeological Priority Areas;*
- *Scheduled Ancient Monuments;*
- *Statutory Listed Buildings;*
- *Locally Listed Buildings;*
- *Local Landmarks; and*
- *Strategic and Local Designated Views.*

Development for the alteration, extension, change of use, or development within a designated and non-designated heritage asset or asset of community value will only be permitted where:

- *they do not result in an adverse impact on the character, fabric or identity of the heritage asset or its setting;*
- *they are appropriate in terms of design, scale, form, detailing and materials in its local context;*
- *they enhance or better reveal the significance of assets or their settings;*
- *opportunities to mitigate or adapt to climate change through the re-use or adaptation are maximised;*
- *in the case of a change of use, a thorough assessment has been carried out of the practicability of retaining existing use and outlining the wider public benefits of the proposed use; and*
- *they preserve views identified in the updated Character Appraisals and Management Guidelines and additional locally important views.*

Proposals for the demolition of a heritage asset will only be considered under exceptional circumstances where substantial public benefit outweighs the substantial harm of demolition. Where exceptional circumstances require demolition to be considered, applications will be assessed on:

- *the significance of the asset, architecturally, historically and contextually;*
- *the adequacy of efforts made to retain the asset in use; and*
- *the merits of any alternative proposal for the site.*

Development that lies in or adjacent to Archaeological Priority Areas, the Council will require the proposal to include an Archaeological Evaluation Report and will require any nationally important remains to be preserved permanently in site, subject to consultation with Historic England.”

LBTH Core Strategy (September 2010)

- 15.2.15 The LBTH Core Strategy⁴sets out the key elements of the planning framework for the borough up to 2025. The relevant aims, policies and paragraphs in relation to archaeology within the Core Strategy are set out in Objective SO22 Part 2 as follows:

“Protect and enhance the following heritage assets and their settings: World Heritage Sites; Statutory Listed Buildings; Conservation Areas; London Squares; Historic Parks and Gardens; Scheduled Ancient Monuments; Archaeological Remains; Archaeological Priority Areas; Locally Listed Buildings; Local Landmarks; Other buildings and areas that are identified through the Conservation Area Character Appraisals and Management Guidelines.”

LBTH Managing Development Document (MDD) (April 2013)

- 15.2.16 The Managing Development Document (MDD)⁵ was adopted in April 2013 and provides the planning policies and site allocations required to achieve the objectives set out in the Core Strategy. The relevant policy for archaeology and heritage is Policy DM27: *Heritage* and the Historic Environment Part 4 as follows:

“For proposed development that lies in or adjacent to Archaeological Priority Areas, the Council will require the proposal to include an Archaeological Evaluation Report and will require any nationally important remains to be preserved permanently in site, subject to consultation with English Heritage.”

The Draft Hackney Local Plan 2033 (2019)

- 15.2.17 The new local plan 2033⁶ was submitted in 2019 for examination in public.

Policy LP3

“Development that leads to substantial harm to or total loss of significance of a designated heritage asset will not be permitted unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

- *the nature of the heritage asset prevents all reasonable uses of the site; and*
- *no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and*
- *conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and*
- *the harm or loss is outweighed by the benefit of bringing the site back into use.*

Development that leads to less than substantial harm to significance of a designated heritage asset will not be permitted unless the public benefit of the proposal, including securing the optimum viable use of the site, outweigh the harm.”

Policy LP6

Archaeology

All new development must protect, enhance and promote archaeological heritage (both above and below ground). The interpretation and presentation of archaeological heritage to the public will be encouraged. Proposals that would adversely affect archaeological remains or their setting will be refused.

Where development is proposed on sites of archaeological significance or potential significance, desk based assessments and, where necessary, archaeological field evaluation, will be required before development proposals are determined.

Scheduled Monuments

Works affecting Scheduled Monuments (including repair works) are subject to a statutory consent regime administered by Historic England on behalf of the Secretary of State.

Scheduled Monuments are also Designated Heritage Assets and the Council will apply the relevant national planning policies, particularly in relation to development affecting the setting of a monument.

Undesignated Heritage Assets

Where non-designated heritage assets of archaeological interest are demonstrably of equivalent significance to Scheduled Monuments, the Council will regard them as Designated Heritage Assets and apply the relevant national planning policies.

⁴ LBTH (2010) Core Strategy. Available at: <https://www.towerhamlets.gov.uk/Documents/Planning-and-building-control/Strategic-Planning/Local-Plan/Core-Strategy-and-MDD/Core-Strategy-low-resolution.pdf>

⁵ LBTH (2013) Managing Development Document. Available at: <https://www.towerhamlets.gov.uk/Documents/Planning-and-building-control/Strategic-Planning/Neighbourhood-Planning/Managing-Development-Documents-Setting-the-scene-and-Development-Management-Policies.pdf>

⁶ LBH (2019) Hackney A Place for Everyone – Proposed Submission Local Plan (LP33) Available at: <https://hackney.gov.uk/media/12597/Proposed-submission-local-plan-2033/pdf/proposed-submission-local-plan-2033-part-1.pdf?m=636778895536570000>

15.2.18 The site is currently located within Tier II Archaeological Priority Areas as defined by LBTH (Spitalfields and Brick Lane) and LBH (Shoreditch). The Spitalfields and Brick Lane APA has been classified as Tier II because of its potential to contain multiperiod remains peripheral to the Tier 1 remains of St Mary Spital and also Roman burials from the Ermine Street cemetery and evidence of London’s urban and industrial development. The Shoreditch APA has been classified as Tier II because it is a historic settlement and also contains archaeological remains relating to Roman settlements and roadside activity and London’s English Civil War defences.

LBH Core Strategy (November 2010)

15.2.19 The Core Strategy and Proposals Map⁷ were approved by Cabinet and Council in November 2010. Policy 25 Paragraph 8.20 states:

“The archaeological heritage of Hackney is considerable and includes finds from the Palaeolithic era near Stoke Newington, and medieval and Elizabethan remains, including the site of the Globe Theatre in South Shoreditch, together with the remains of the early village settlements. The most tangible remains are the two Roman roads, which today can be traced along Kingsland Road and Old Street. Archaeological Priority Areas have been established on the advice of English Heritage and they can advise the Council that archaeological work should be undertaken in other locations where they consider that such remains may be affected.”

LBH Development Management Local Plan (2015)

15.2.20 The Development Management Local Plan⁸ contains development policies that elaborate the Core Strategy. Policy DM28 Managing the Historic environment contains the following paragraph relating to archaeology:

“Developments must not adversely affect important archaeological remains or their settings. Proposals within Archaeological Priority Areas likely to affect important archaeological remains must be accompanied by an appropriate desk-based archaeological assessment and, where necessary, a field evaluation. Archaeological assessments may be required for other development proposals where it is considered important archaeological remains may be present. There is a presumption in favour of physical preservation in situ of important archaeological remains. Mitigating measures must be taken to ensure the preservation of all remains of archaeological importance, either in-situ preservation or a programme of excavation, recording, publication and archiving of remains.”

Bishopsgate Goods Yard Interim Planning Guidance (20010)

15.2.21 The Bishopsgate Goods Yard Interim Planning Guidance⁹ does not contain any guidance relating to archaeology.

Technical Standards and Guidance

15.2.22 The original assessment by MOLA was carried out to standards specified by the Chartered Institute for Archaeologists¹⁰, Historic England¹¹, and the Greater London Archaeological Advisory Service (GLAAS).¹²

15.3 CONSULTATION

15.3.1 In January 2014 a Scoping Opinion was issued jointly by the LBTH (Ref: PA/14/107) and LBH (Ref: 2014/0249) on the Proposed Development (see **ES Addendum Volume 4 - Appendix A Scoping**). A review of the Scoping Opinion was requested by the Applicant in March 2019 subject to the Revised Scheme. **Table 15.1** outlines the comments received in the 2014 Scoping Opinion and the 2019 Scoping Opinion Review and where they have been addressed within the documentation.

⁷ LBH (2010) Core Strategy. Available at: <https://www.hackney.gov.uk/media/6826/Hackney-core-strategy-development-plan-document-December-2010-/pdf/Adopted-LDF-Core-Strategy-final-incchaptimagescov-Dec2010-low-res.pdf?m=635923733151530000>

⁸ LBH (2015) Development Management Local Plan. Available at: <https://hackney.gov.uk/development-management-DPD>

⁹ LBH, LBTH and GLA (20010) Bishopsgate Goods Yard – Interim Planning Guidance <https://www.hackney.gov.uk/media/3587/Bishopsgate-Goods-Yard-Interim-planning-guidance-2010/pdf/Bishopsgate-Goods-Yard-Interim-Planning-Guidance-2010>

Table 15.1 LBTH Scoping Opinion Comments and Response

Topic / Section	Summary of Comment	Location within the ES Addendum where comments are addressed
English Heritage (GLASS)	<i>Paragraph 4.150:</i> <i>“The EIA should explore the potential to enhance or make a positive contribution to undesignated heritage assets through effective building design.”</i>	ES Addendum Volume 2, Chapter 15: Archaeology ES Addendum Volume 2, Chapter 16: Built Heritage ES Addendum Volume 3 TVIA
Built Heritage	Scoping Opinion 2014: <i>Paragraph 4.164:</i> <i>“A clear analysis of the heritage significance of each affected heritage asset, including the contribution of its setting to heritage significance, should be provided. All judgements on the significance and direction of effects on heritage assets (including the World Heritage Site) need to be fully explained and justified.”</i>	ES Addendum Volume 2, Chapter 15: Archaeology ES Addendum Volume 2, Chapter 16: Built Heritage ES Addendum Volume 3 TVIA
	Scoping Opinion 2019 <i>The Archaeology chapter should make reference to the Spitalfields and Brick Lane tier 2 Archaeology Priority Area.</i> <i>The assessment should, where appropriate, consider the likelihood of alterations to drainage patterns that might lead to decomposition or destruction of below ground archaeological remains and deposits.</i>	ES Addendum Volume 2, Chapter 15: Archaeology ES Addendum Volume 2, Chapter 15: Archaeology (Paragraph 15.6.2)

15.4 ASSESSMENT METHODOLOGY

- 15.4.1 This section of this ES Addendum chapter presents the following:
- identification of the information sources that have been consulted throughout preparation this chapter;
 - details of the consultation undertaken with respect to buried heritage assets (archaeological remains);
 - the methodology behind the assessment of buried heritage asset impacts, including the criteria for the determination of sensitivity of receptor/importance of resource significance and magnitude of change from the existing or ‘baseline’ condition;

¹⁰ ClfA [Chartered Institute for Archaeologists], (Dec 2014); Standards and guidance for historic environment desk-based assessment, Reading

¹¹ EH [English Heritage], (2008); Conservation principles, policies and guidance. Swindon: English Heritage)

¹² Greater London Archaeology Advisory Service, (2014); Standards for Archaeological Work London Region, External Consultation.

- an explanation as to how the identification and assessment of potential buried heritage asset impacts has been reached; and
 - the significance criteria and terminology for assessment of the residual impacts to buried heritage assets.
- 15.4.2 The assessment methodology will be considered in the context of the detailed component of the Revised Scheme and the outline component of the Revised Scheme and then project wide.
- 15.4.3 The following sources of information that define the Revised Scheme have been reviewed and form the basis of the assessment of likely significant impacts on buried heritage assets:
- Detailed component of the Revised Scheme:
 - Detailed plans, sections and elevations of Development Plots 2 and 7, including basement and floor plans.
 - Outline component of the Revised Scheme:
 - Above and below ground parameter plans of Development Plots 1, 3, 4, 5, 6, 7, 8, 10 and 11.
- 15.4.4 The assessment methodology does not differ between the assessments of the detailed component of the Revised Scheme and the outline component of the Revised Scheme.
- 15.4.5 Plot 9 was removed during design development following the November 2018 Public Consultation.

Determination of the Baseline

Methodology for Determining Baseline Conditions and Asset Heritage Significance

- 15.4.6 The baseline scenario was informed from setting the site in its archaeological and historical context, by collecting information on the known historic environment within a 150 m buffered study area from the site boundary as held by the primary repositories of such information within Greater London. These comprise the GLHER and the London Archaeological Archive and Research Centre (LAARC) and English Heritage. Consultation of all relevant documentary and cartographic sources, such as the published histories and journals as held in The London Society Library, Tower Hamlets Archives and Hackney Archives, and of historical pre-Ordnance Survey and Ordnance Survey Maps held by MOLA, Tower Hamlets Archives and Hackney Archives, or supplied by Groundsure was also carried out.
- 15.4.7 Previous archaeological investigations have taken place on the site. The results of these investigations, which provide an insight into the kinds of archaeological remains which might be expected across the site, as well as their preservation and depth, were also used to inform the baseline conditions¹³.
- 15.4.8 Once the archaeological potential for the area in general had been established, the past impacts on archaeological survival were assessed. This primarily comprised assessment of the impacts of previous development within the site.

Methodology for Determining Demolition and Construction Impacts

- 15.4.9 The methodology used to define the likely significant impacts on buried heritage assets (sensitive receptors) associated with the site comprise an evaluation of the significance of buried assets (based on existing designations and professional judgment where assets have no formal designation).
- 15.4.10 This is followed by a prediction of the scale of impacts upon the significance of known or potential buried heritage assets.
- 15.4.11 Consideration is given to what mitigation measures are required during the design and construction of the Revised Scheme in order to reduce or eliminate any significant adverse impacts on buried heritage assets. Any residual impacts (those that might remain after mitigation) are quantified along with the overall cumulative impact.

Prediction Methodology

- 15.4.12 The value of a heritage asset to current and future generations because of its heritage interest may be archaeological, architectural, artistic or historic¹⁴. Archaeological interest includes an interest in carrying out an expert investigation at some point in the future into the evidence a heritage asset may hold of past human activity and may apply to standing buildings or structures as well as buried remains. The determination of the significance of these assets is based on statutory designation and/or professional judgement against four values:

- *Evidential value*: the potential of the physical remains to yield evidence of past human activity. This might take into account date; rarity; state of preservation; diversity/complexity; contribution to published priorities; supporting documentation; collective value and comparative potential;
- *Aesthetic value*: this derives from the ways in which people draw sensory and intellectual stimulation from the heritage asset, taking into account what other people have said or written;
- *Historical value*: the ways in which past people, events and aspects of life can be connected through heritage assets to the present, such a connection often being illustrative or associative; and
- *Communal value*: this derives from the meanings of a heritage asset for the people who know about it, or for whom it figures in their collective experience or memory. Communal values are closely bound up with historical, particularly associative, and aesthetic values, along with and educational, social or economic values.

- 15.4.13 The sensitivity of an archaeological asset is based on the value of that asset (often but not always indicated by designation) and the relationship between the heritage asset designation and sensitivity used in this chapter is outlined in Table 15.2.
- 15.4.14 Unless the nature and extent of buried, concealed archaeological remains within any given area has been determined through prior investigation, the sensitivity of these potential below ground archaeological remains is often uncertain. Furthermore, an area will be deemed to be less sensitive if previous large-scale disturbance or removal of deposits can be demonstrated.

Table 15.2 Sensitivity of Heritage Assets

Heritage Asset Designation	Sensitivity
World heritage sites Scheduled monuments Grade I and II* listed buildings English Heritage Grade I and II* registered parks and gardens Protected Wrecks Heritage assets of national importance	Very high (International / national)
English Heritage Grade II registered parks and gardens Conservation areas Designated historic battlefields Grade II listed buildings Burial grounds Protected heritage landscapes (e.g. ancient woodland or historic hedgerows) Heritage assets of regional or county importance	High (national/regional/ county)
Heritage assets with a district value or interest for education or cultural appreciation Locally listed buildings	Medium (District)
Heritage assets with a local (i.e. parish) value or interest for education or cultural appreciation	Low (Local)
Historic environment resource with no significant value or interest.	Negligible
Heritage assets that have a clear potential, but for which current knowledge is insufficient to allow significance to be determined	Uncertain

Magnitude of Change

- 15.4.15 Determination of magnitude of change upon the known or potential heritage asset is based on the severity of the potential physical impact (e.g. any activity that would entail ground disturbance, from piling, ground reduction, etc.). **Table 15.3** describes the criteria used in this assessment to determine the magnitude of change.

¹³ WSP Cantor Seinuk (2007); Project No. 24710359–030 DDN 1009.3A. Dated 07/07

¹⁴ EH [English Heritage], (2008); Conservation principles, policies and guidance. Swindon: English Heritage)

Table 15.3 Magnitude of change

Magnitude of Change	Description
High	Complete removal of asset; Physical loss of features fundamental to the understanding and character of the resource; and/or The loss or severance of the physical and visual integrity of parts of a resource, such that key relationships between the parts are lost.
Medium	The physical loss of features which contribute substantially to the understanding and character of the resource but are not fundamental to it (i.e. where sufficient evidence or features survive the impact for the resources essential character to be understood and interpreted); and/or The loss or severance of the physical and visual integrity of parts of a resource, such that important relationships between the parts are lost, but not those fundamental to the character of the resource and its interpretation (these are most likely to be where the impact is peripheral, or affects features where their integrity or relationships have already been diminished to a significant extent). Change to the asset resulting in an appreciable change in the ability to understand and appreciate the resource and its historical context and setting.
Low	The physical loss of features likely to be replicated to a significant degree in the remaining, unaffected, parts of the resource, or which are of minor importance; and/or Where the physical and visual integrity of resource is already limited and additional loss or severance does not lead to the loss of important surviving relationships.
Negligible	Negligible change or no material change to the asset. No real change in ability to understand and appreciate

Significance Criteria

- 15.4.16
- The environmental impact is determined by comparing the sensitivity of baseline assets with the magnitude of change, as outlined in **Table 15.4**. Impacts may be either adverse (negative) or beneficial (positive) and are defined initially without mitigation. Where information is insufficient to be able to quantify either the resource significance or magnitude of change with any degree of certainty, the impact is given as 'uncertain'. The nature of archaeological assets means that any impact would be permanent. Any impact (i.e. other than 'negligible') on an archaeological asset is considered significant. Insignificant impacts are those that have no or negligible impact on the survival of archaeological remains. The use of mixed impacts such as Major/Moderate reflects the uncertainty in the nature and state of preservation of potential archaeological remains within each broad Asset Sensitivity category.

Table 15.4 Significance of environmental impact

	Asset Sensitivity				
	Very high	High	Medium	Low	Uncertain
High	Major	Major	Major/Moderate	Moderate/Minor	Uncertain
Medium	Major	Major/Moderate	Moderate	Minor	Uncertain
Low	Moderate	Moderate/Minor	Minor	Negligible	Uncertain
Negligible	Minor	Minor/Negligible	Negligible	Negligible	Uncertain

Mitigation and Significance of Residual Impacts

- 15.4.17
- An appropriate mitigation strategy would aim to eliminate, reduce or offset any adverse impact. Measures to mitigate impacts would normally consist of design adjustments to allow significant resources to be protected and retained (preservation in situ) or, where this is not warranted or feasible, investigation and recording before and during development, with dissemination at an appropriate level (preservation by record). The residual impact reflects the success rating for the recommended mitigation strategy. **Table 15.5** defines the significance of residual impacts.

Table 15.5 Significance of residual impact

Significance of Impact	Description
Major adverse	Substantial harm to, or loss of, an asset's significance as a result of changes to its physical form or setting
Moderate adverse	Less than substantial harm to an asset's significance as a result of changes to its physical form or setting
Minor adverse	Limited harm to an asset's significance as a result of changes to its physical form or setting
Negligible	No appreciable change to an asset's significance
Uncertain	Significance of impact uncertain due to lack of information on buried heritage asset significance
Minor beneficial	Limited improvement of an asset's significance as a result of changes to its physical form or setting
Moderate beneficial	Notable enhancement of an asset's significance as a result of changes to its physical form or setting
Major beneficial	Substantial enhancement of an asset's significance as a result of changes to its physical form or setting

Limitations and Assumptions

- 15.4.18
- The information in this assessment is, to the best knowledge of our knowledge, correct at the time of writing. Further archaeological investigation, more information about the nature of the present buildings, and/or more detailed proposals for redevelopment may require changes to all or parts of the assessment.

15.5 BASELINE ASSESSMENT AND IDENTIFICATION OF KEY RECEPTORS

Baseline Assessment

- 15.5.1
- The 150 m buffer study area from the centre of the site is used to provide data as to the kind of archaeological remains that might be anticipated within the site, particularly for earlier periods. The technical appendix **(2015 ES Volume IV, Appendix K: Archaeology)** produce by MOLAS sets the site into its full archaeological and historical context and includes a detailed chronological summary of the site from the prehistoric period to present day.

Designated Assets

- 15.5.2
- The site contains the nationally designated (protected) Braithwaite Viaduct, which is a Grade II Listed Building. The Forecourt Wall, Oriel and Gates to the Goods Station are also nationally designated Grade II Listed Buildings. The site contains no buildings designated by the local authorities as locally listed or buildings of local importance.

15.5.3	The site is currently located within Tier II Archaeological Priority Areas as defined by LBTH (Spitalfields and Brick Lane) and LBH (Shoreditch). The site does not lie within a Conservation Area, although it is bordered by the Tower Hamlets Fournier Conservation Area and Elder Street Conservation Areas to the south-east, east and north-east. The Hackney South Shoreditch Conservation Area begins on the western side of Shoreditch High Street opposite the site but does not include the site itself.
	Topography
15.5.4	Topography can provide an indication of suitability for past human settlement, and ground levels can indicate whether the ground has been built up or truncated, which can have implications for archaeological survival.
15.5.5	The modern ground surface slopes from north-south; with the level of Bethnal Green Road to the north of the site at 14.9 m Ordnance Datum (OD) and that of Wheler Street to the south at c 13.70 m OD. The ground level of the site (mostly concrete slab) is variable but was recorded at c 15.0 m OD in the northern area and at c14.5 m OD in Wheler Street, level with the northern limit of the railway cutting ¹⁵ .
	Geology
15.5.6	The site lies on Taplow Gravel Thames River Terrace Deposits. The northern site boundary lies close to the boundary of the Taplow Gravel with the Hackney Gravel, an earlier gravel terrace. The level of the gravel on site has been recorded at between 10.1 m and 10.7 m OD. Above the gravel previous excavation has revealed a layer of brickearth (Langley Silt complex) a fine-grained deposit believed to have been deposited by a mixture of wind and colluvial processes at c 17,000 BC. The brickearth is recorded as occurring between 10.6–11.7 m OD ¹⁶ . Brickearth covered many of the gravel terraces along the Thames but much has been removed by quarrying and modern development. Evidence of brickearth quarrying was found on the eastern side of the site ¹⁷ .
	Past Archaeological Investigations on the site
15.5.7	A series of archaeological investigations have been undertaken by MoLAS within the site between 2003 and 2008.
15.5.8	The archaeological watching brief in 2003 encompassed both a general monitoring of demolition of the site and a more specific assessment of geotechnical test pits, opened on the upper part of the Braithwaite Viaduct. The investigations revealed the southern edge of the viaduct structures added as part of the reconstruction and enlargement of the site in 1878–81. No original elements of the 1840 viaduct were revealed ¹⁸ .
15.5.9	An archaeological evaluation and excavation were undertaken on the site between 2005 and 2007. The earliest evidence for activity on the site was a small quantity of prehistoric worked flints, including a Mesolithic adze, which were found residually in later deposits. The earliest archaeological features that were identified consisted of medieval pits which dated from the 11th century and likely to be associated with occupation along the frontage of Shoreditch High Street and peripheral activity associated with the Holywell Priory complex. The earliest structural remains excavated consisted of an oven and fragments of associated building remains, including at least one cellar, which are thought to date from the 16th century. These are likely to relate to the Great House and/or Stone House which are known from the documentary sources to have occupied the western end of the site ¹⁹ .
15.5.10	In the central and eastern areas of the site there was considerable evidence for the extraction of brickearth dating from the 16th century. The site appears to have been wholly suburbanised by the late 17th century and these building remains and associated features, i.e. cesspits, form the bulk of the remains that were excavated ²⁰ .
15.5.11	Structural evidence of the original Bishopsgate Railway Terminus and possible ancillary structures associated with it were identified; consisting of substantial walls and a number of very large rectangular pits immediately predating the 1882 structure were observed ²¹ .
15.5.12	In 2008 a further watching brief found, within the footprint of the viaduct, the footings of 17th-century walls. Cellars and a brick-lined cess pit dating from the 18th and 19th centuries were also recorded. These were heavily truncated by the concrete foundations of the 1840s Braithwaite Viaduct and its later extension. Metal rails, probably from the goods yard, were present in one trench ²² .
15.5.13	The locations of the trenches excavated between 2005 and 2008 are shown in Figure 15.1 .

¹⁵ MoLAS (2006). East London Line Project Northern Extension Bishopsgate Goods Yard, London E1: Archaeological Evaluation Report. MoLAS Unpub Report

¹⁶ MoLAS (2007). A brief summary of the excavations at Bishopsgate Goods Yard (East London Line Extension Project). MoLAS Unpub Excavation Summary

¹⁷ MoLAS (2006)

¹⁸ MoLAS (2004). Bishopsgate Goods Yard: A report on the Watching Brief. MoLAS Unpub Report

¹⁹ MoLAS (2008) East London Line Project. Northern Extension,Bishopsgate Goods Yard: An archaeological post-excavation assessment.

Chronological Summary

15.5.14	The site lies 1 km north-east of the walls of the Roman town of Londinium (London), and probably within its territorium (a distinct area controlled by the city), and composed of a managed agricultural landscape of settlement and scattered farms supplying produce to London ²³ . The site would have been situated within a rural area roughly 1 km beyond the boundaries of early medieval (Saxon) settlement of Lundenburh.
15.5.15	During the later medieval period the central and western parts of the site were probably open fields. The Domesday Book (1086) described the area of the manor of Stepney as arable land with meadows, pastures and woodland and a population of 900.
15.5.16	The western third of the site, immediately adjacent to Shoreditch High Street, falls within the settlement and parish of Shoreditch, centred on the junction of the old Roman roads of Shoreditch High Street and Old Street. The parish church was the 12th century church of St Leonard Shoreditch, located slightly to the north of the modern church of St Leonard ²⁴ , which is approximately 350 m north of the site.
15.5.17	Between 1152-8 the Augustinian Priory of Holywell was founded to the south of the settlement of Shoreditch, 40m north west of the western site boundary. In circa 1197 the Hospital and Priory of Blessed Mary-without- Bishopgate was founded at Spital Square, approximately 200 m south of the site beyond the site boundary, in the sub manor (estate) of Norton Folgate belonging to the canons of St Paul's Cathedral. The area of the Priory is now a Scheduled Ancient Monument, beginning approximately 60 m south of the site.
15.5.18	Historic maps show the urban development of the area of the site throughout the 17th and 18th centuries. Shoreditch (later called Bishopsgate) Station was constructed in 1840 on the west side of the site as the terminus of the Eastern Counties Railway (later the Great Eastern railway or GER). During the 1850s–60s its capacity was increased by the construction of additional lines to the north and south of the original Braithwaite Viaduct. Despite this by the early 1870s the Bishopsgate Station had reached its full capacity and an alternative passenger terminus was constructed at Liverpool Street, opening in 1874. Following the opening of Liverpool Street station, the now defunct passenger station at Bishopsgate was transformed into a goods yard in 1875-1881. During this process the Bishopsgate station was demolished and its location filled by goods yard structures. The goods yard remained in use until a fire destroyed the upper level in 1964.
15.5.19	The location of the historic railway structures, both demolished and extant, is shown in Figure 15.2 .

²⁰ *ibid*

²¹ *ibid*

²² MoLAS (2008) Bishopsgate Goods Yard, Associated Development Scheme: A report on the watching brief. Unpublished MoLAS report

²³ MoLAS (2007); Bishopsgate Goods Yard: Summary of excavation data. MoLAS Unpub. Trench Summary.

²⁴ Weinreb B and Hibbert C (eds), 1995 The London encyclopaedia. Macmillan. London

Figure 15.1. Plan of MoLAS trenches excavated from 2005 to 2008

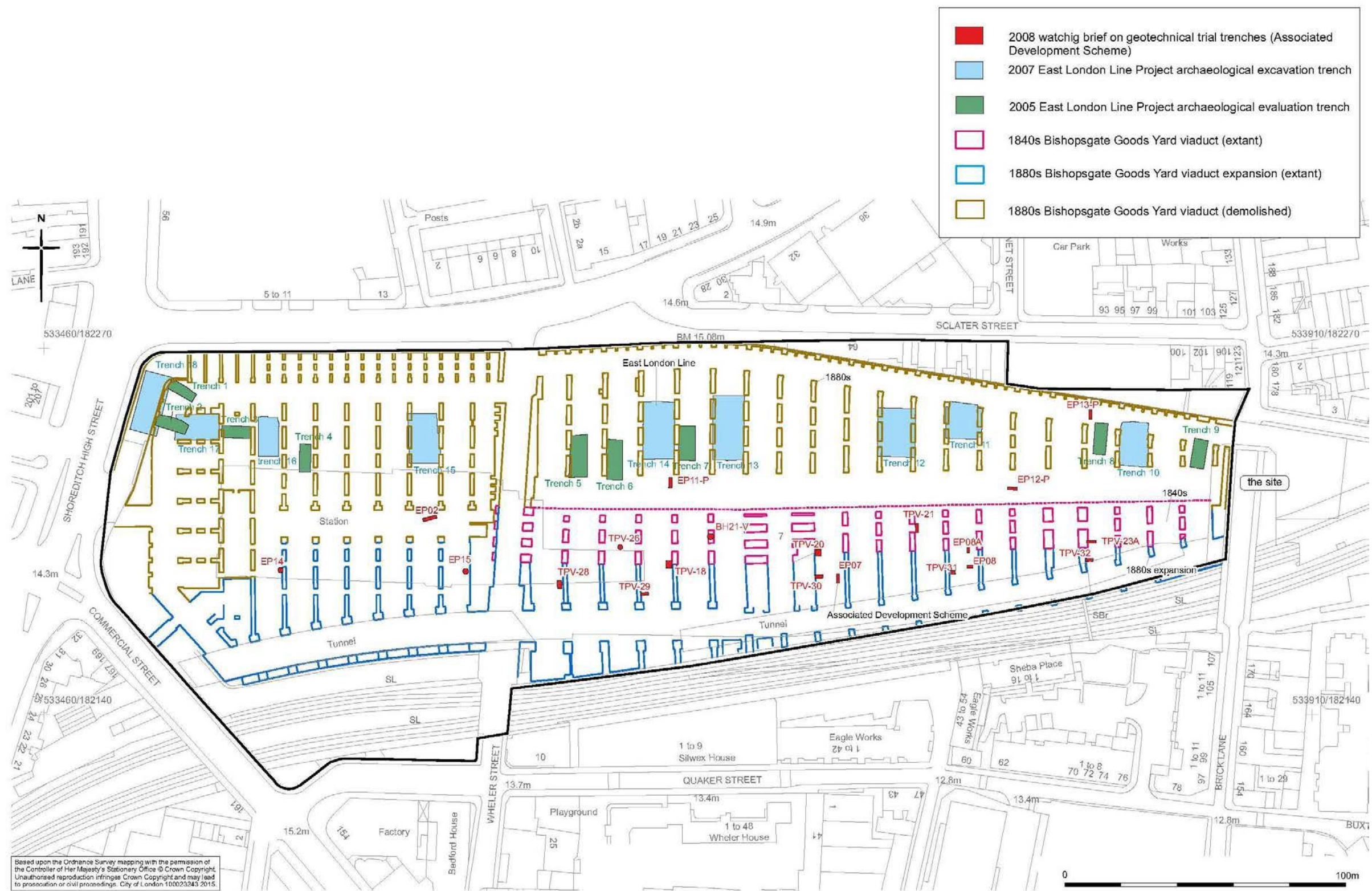
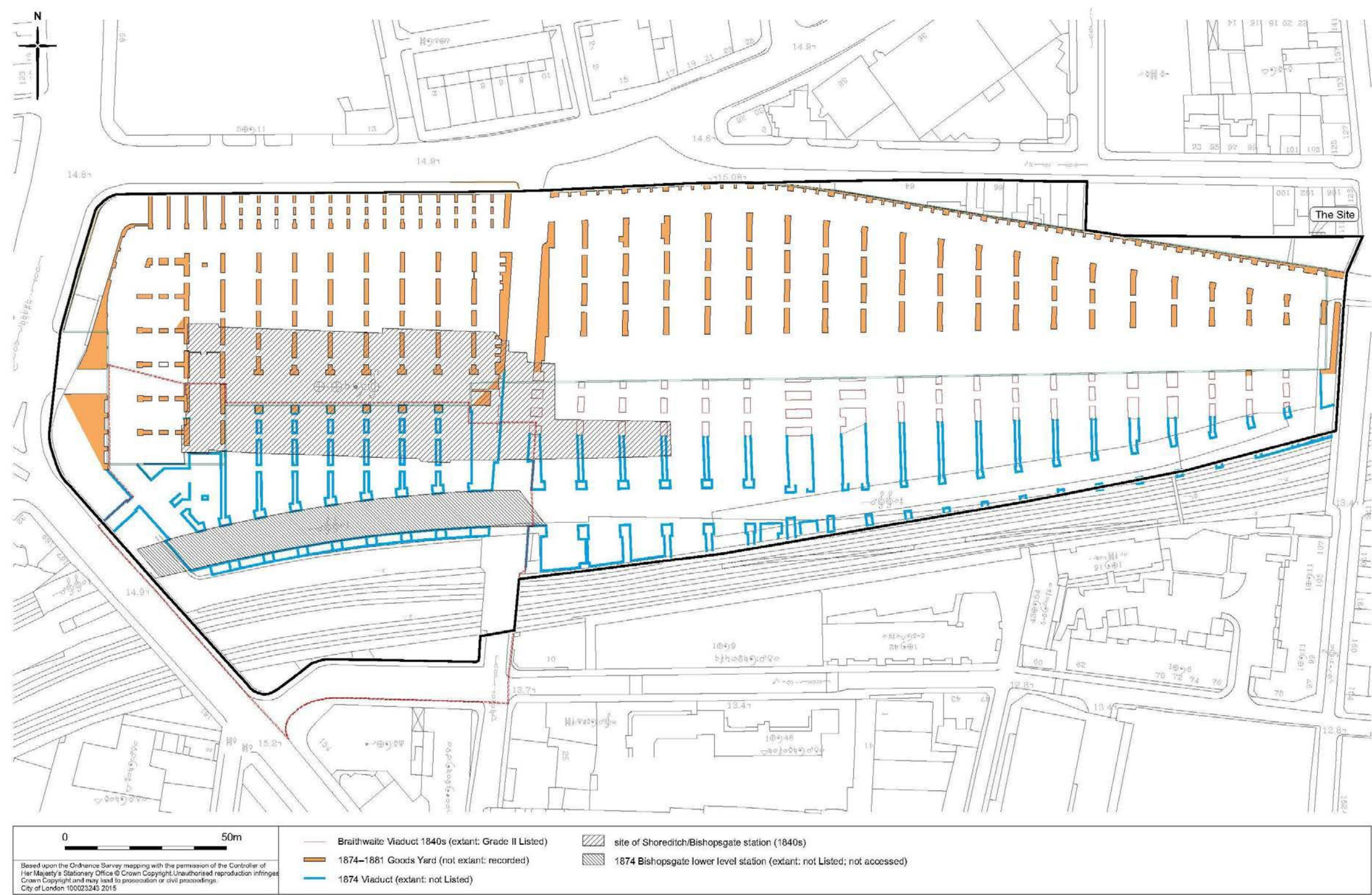


Figure 15.2. Plan of the historic railway infrastructure, above and below ground remains



Factors Affecting Archaeological Survival	
15.5.20	The modern rail lines lie within a 7 m deep open cut at the south end of the site and the former pedestrian platforms of the low level Bishopsgate station are located at the same depth or deeper. The combined cut for the suburban and main lines and the low level station extends from the southern limit of the site as far north as the southern edge of the viaducts. This will have completely removed the brickearth and truncated the underlying gravel in this area, entirely removing any surviving earlier remains.
15.5.20.1.1	In the west of the site, the subway from the entrance of the former good yard to the Low Level passenger station will also have truncated any archaeological remains beneath the ground floor of the site. The depth of the subway is unknown, but it is likely to have completely removed any archaeological remains at the southern end, where it joins the low level platforms, and perhaps for much of its length.
15.5.21	Even where it has not completely removed the underlying archaeological remains, the creation of foundations for the station and goods yard structures will have truncated earlier archaeological material. Given that the site is on a slope, it is possible that some terracing was undertaken prior to construction of the railway structures, in order to provide a level slope. If this is the case the terracing will have truncated at least some of the post-medieval remains and possibly earlier remains.
15.5.22	On the eastern side of the site, the evaluation revealed evidence of post-medieval brickearth quarrying during the 16th–17th century. This will have truncated any earlier archaeological remains in the area.
15.5.23	In the northern half of the site archaeological excavation by MoLAS in advance of the construction of the London Overground has recorded and entirely removed the archaeology in a number of trenches across the site. This excavation has revealed that despite the construction of the station, viaduct and goods yard there is good preservation of post-medieval archaeological material relating to the urbanisation of the area. A number of sunken floors and cellars in buildings of the 17th-19th centuries were discovered and these structures will have truncated any earlier archaeological remains ²⁵ . Two late cellars and later goods yard basements were discovered in the northern half of the site during the evaluation and excavation ²⁶ . Elsewhere goods yard basements had completely removed archaeological remains in part or all of some trenches ²⁷ . Despite these structures, the excavations also revealed a reasonable amount of earlier, particularly later medieval, features and deposits. Where no goods yard footings or foundations were present, and railway development was limited to track construction, potentially good preservation of earlier archaeological remains was found.
15.5.24	Any archaeological remains within the footprint of the piers of the viaduct of the London Overground will have been entirely removed.
Likely Depth/Thickness of Archaeological Remains	
15.5.25	The modern ground at the top of the concrete slab is located at circa 14.0 m OD in the north of the site. The base of the modern surface varied between 11.0- 14.5 m OD. The two cellars discovered during the evaluation were found at depths of 12.0 m and 11.3 m. Where they were not removed entirely, the archaeological deposits below the base of the modern ground surface reached 0.1m–4.4 m thick ²⁸ . Even below the cellars 0.4 m of archaeological remains were preserved (Ref.15-14).
Conclusions Regarding Baseline Environmental Quality and Key Receptors	
15.5.26	The nature of possible archaeological survival in the area of the site is summarised here, taking into account the levels of natural geology and the level and nature of later disturbance and truncation discussed above.
15.5.27	The site has a low potential to contain archaeological remains dated to the prehistoric period. The site’s location on well drained gravel terrace close to predictable resources of the River Thames would have made the site a favoured location for settlement or activity. A number of undated residual flint tools and a fine Mesolithic tranchet axe (c 8000–6000 BC) were discovered in later contexts on the site indicating that there may be Mesolithic or other prehistoric remains in the vicinity, although there is the possibility that these finds were brought in with soil from elsewhere.
15.5.28	The site has a low potential to contain archaeological remains dated to the Roman period. The site abuts the Roman road that approximates the line of Shoreditch High Street and was probably within the territorium of Londinium. However, given its distance from the city it was most likely to have been in open fields by the roadside at this time. The previous investigations on the site revealed no Roman features, the only remains being residual finds of Roman building material.
15.5.29	The site has a low potential for early medieval (Saxon) archaeological remains. The early medieval settlement was around the Church of St Leonard Shoreditch, 350 m to the north of the site. Previous investigations revealed no evidence of the early medieval period on the site.
15.5.30	The site has demonstrated a moderate potential to contain archaeological remains from the later medieval period. Excavations on the site have revealed a concentration of later medieval pits and horizons at the west end of the site where activity was focussed around the road and nearby settlements of Holywell and Spitalfields. Although there is no current archaeological evidence of structures associated with settlement along Shoreditch High Street, it is possible more extensive excavation may reveal evidence of buildings from this period. Despite truncation by later brickearth quarry pits and post-medieval cellars in some areas, the depth of archaeology ensures later medieval remains have survived quite well across the site.
15.5.31	The site has demonstrated a high potential to contain archaeological remains of the post-medieval period. Historic maps of the site have revealed that it became increasingly urbanised from its western to eastern boundaries from 16th-18th centuries. Excavation has shown there is good survival of the remains of these houses, including floor surfaces and evidence of rebuilds; although the cellars of some have truncated earlier archaeological remains. Given the state of preservation and large extent of remains from this period the significance of any remains is considered to be medium.
15.5.32	The site has a very high potential to contain archaeological remains of 19th century railway structures. Across the site there are certain to be below-ground elements, comprising footings and foundations, of the goods yard structures. MoLAS excavations in 2005 and 2007 across the northern section of the site located the foundations of the goods yard and also located several cellars and basements contemporary with the structure.
15.6 IDENTIFICATION AND DESCRIPTION OF CHANGES LIKELY TO GENERATE EFFECT	
Construction Phase	
15.6.1	During construction, there is the potential for removal of receptors within the site. There could also be the removal of part of the setting of receptors outside of the site.
Operational Phase	
15.6.2	There are unlikely to be significant alterations to drainage patterns as a result of this development. Currently, the site has low levels of infiltration as it is predominantly covered in Made Ground and underlain by London Clay bedrock geology. This will still be the case in the Proposed Development as increases in the infiltration rate are expected to be minimal. This is due to the limited area available between the buildings to locate infiltration based drainage systems, and the limitations imposed by the heritage cobbled paving.
15.7 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS	
Construction Effects	
Embedded Construction Mitigation Measures	
15.7.1	There is a potential impact on palaeoenvironmental deposits from piling. If necessary, a geo-archaeological survey of the site could be carried out before construction to confirm the results of the Site Investigation work.
Anticipated Effects during Demolition and Construction	
Plots 1 and 2	
15.7.2	Plot 1 would comprise office and ground floor retail floorspace. The tall building straddles the boundary between LB Hackney and LB Tower Hamlets and also bridges over the London Overground box. The building would have a basement to a maximum depth of 8.0 m OD located to the north of the London Overground.
15.7.3	Plot 2 would comprise a tall commercial building, with retail at the ground floor. This would straddle the 8-track reserve to the south and the Central Line tunnels to the east. The western building elevation cantilevers 17.0 m and extends over the western arches. The basement would also have a maximum depth of 8.0 m OD and would be located north of the 8-track reserve, extending northwards into Plot 1 and eastwards stopping short of the central line tunnels. The unlisted 19 th century railway arches in this area would be demolished.

²⁵ MoLAS (2007) A brief summary of the excavations at Bishopsgate Goods Yard (East London Line Extension Project).

²⁶ MoLAS (2006)

²⁷ MoLAS. (2007); Bishopsgate Goods Yard: Summary of excavation data. MoLAS Unpub. Trench Summary.

²⁸ *ibid*

- 15.7.4 Secant piled walls will be installed along with temporary steel propping to allow the basements to be constructed.
- 15.7.5 As these are two of the taller buildings on the site, bored piles using bentonite fluid to stabilise the bore shaft will extend into the Thanet Sand approximately 42 m below ground.

Table 15.6 Plot 1 and 2 potential impacts on buried heritage assets prior to mitigation

Buried Heritage Asset	Asset Sensitivity	Magnitude of Impact	Nature of Potential Impact (prior to mitigation)
Remains of the 19th century railway development of the area, including footings of Shoreditch Station and Bishopsgate Goods Yard. (High potential)	Medium	Major - Basement construction and piled foundations would entirely remove any buried heritage assets.	Permanent, direct, Major-moderate adverse
Remains associated with the post medieval development of the area in the 16th to 18th centuries (High potential)	Medium	Major - Basement construction and piled foundations would entirely remove any buried heritage assets.	Permanent, direct, Major-moderate adverse
Later medieval remains associated with agriculture or brickearth extraction (Moderate potential)	Low	Major - Basement construction and piled foundations would entirely remove any buried heritage assets.	Permanent, direct, Moderate-minor adverse
Possible, previously unrecorded remains dating from the prehistoric to early medieval periods (Low potential)	Uncertain (Low for isolated artefacts)	Major - Basement construction and piled foundations would entirely remove any buried heritage assets.	Permanent, direct, uncertain (likely moderate-minor) adverse

Plots 3, 4, 5, 6, 8A and 10

- 15.7.6 Plot 3 on the southern boundary of the site, along Quaker Street, is currently open ground and railway. An office building would be constructed which will be located on a deck above the existing railway line. Foundations would be piled in the area between the railway line and Quaker Street.
- 15.7.7 Plot 4 would consist of a tall residential building with retail at ground floor level bridging over the London Overground box.
- 15.7.8 Plot 5 would consist of a residential building with retail at ground floor.
- 15.7.9 Plot 6 would consist of a cultural building with retail at ground floor bridging over the London Overground box
- 15.7.10 Plot 10 would consist of three residential buildings with retail at ground floor.
- 15.7.11 There is no basement planned for the above buildings and the buildings are anticipated to be supported by bored or CFA piles terminating in the London Clay.
- 15.7.12 Plot 8A comprises a tall hotel and residential building for to the west of Braithwaite Street.
- 15.7.13 Plot 8A will be subject to further design development and, depending on the final vertical load, may be better suited to fewer, deeper Thanet Sand piles rather than the piles founded in London Clay currently proposed for many of the other buildings.

Table 15.7 Plots 3, 4, 5, 6, 8a and 10 potential impacts on buried heritage assets prior to mitigation

Buried Heritage Asset	Asset Sensitivity	Magnitude of Impact	Nature of Potential Impact (prior to mitigation)
Remains of the 19 th century railway development of the area, including footings of Shoreditch Station and Bishopsgate Goods Yard.(High potential)	Medium	Moderate - Piled foundations would remove any archaeological deposits within the footprint of each pile	Permanent, direct, moderate-minor adverse
Remains associated with the post medieval development of the area in the 16th to 18th centuries (High potential)	Medium	Moderate - Piled foundations would remove any archaeological deposits within the footprint of each pile	Permanent, direct, moderate-minor adverse
Later medieval remains associated with agriculture or brickearth extraction (Moderate potential)	Low	Moderate - Piled foundations would remove any archaeological deposits within the footprint of each pile	Permanent, direct, minor adverse
Possible, previously unrecorded remains dating from the prehistoric to early medieval periods (Low potential)	Uncertain (Low for isolated artefacts)	Moderate - Piled foundations would remove any archaeological deposits within the footprint of each pile	Permanent, direct, Uncertain, likely minor adverse

Plots 7(A, B, C and D), Plots 8 (B and C) and Plot 11 ‘The Pavilion Building’.

- 15.7.14 Plots 7(A, B, C and D) would comprise a mix of retail uses within the listed and non-listed arches with public open space above with restaurant pavilions also sited within the open space.
- 15.7.15 The listed Forecourt Wall, Oriel and Gates to the Goods Station at the entrance to the basements constructed or changes to the foundations.
- 15.7.16 The majority of the historic structures of the listed Brathwaite Viaduct and other railway arches would be retained. There would be some minor demolition of both listed and unlisted structures. The retained arches would be re-used for retail premises. There would be no basements constructed or changes to foundations as the buildings would be supported by the existing arch / viaduct structures. Existing basements would be retained.
- 15.7.17 Plots 8 (B and C) are hotel buildings connected to Plot 8A. Plots 8 (B and C) would sit at the podium level on top of the existing arches and would not be expected to have any potential effects on archaeology. Plot 11 ‘The Pavilion Building’ is a small retail outlet which will sit upon upon the viaduct and would not be expected to have any potential effects on archaeology.

Table 15.8 Plots 7(A, B, C and D) potential impacts on buried heritage assets prior to mitigation

Buried Heritage Asset	Asset Sensitivity	Magnitude of Change	Nature of Potential Impact (prior to mitigation)
Remains of the 19 th century railway development of the area, including footings of Shoreditch Station and Bishopsgate Goods Yard (High potential)	Medium	Negligible	Negligible
Remains associated with the post medieval development of the area in the 16th to 18th centuries (High potential)	Medium	Negligible	Negligible
Later medieval remains associated with agriculture or brickearth extraction (Moderate potential)	Low	Negligible	Negligible
Possible, previously unrecorded remains dating from the prehistoric to early medieval periods (Low potential)	Uncertain (Low for isolated artefacts)	Negligible	Negligible

15.8 SCOPE FOR ADDITIONAL MITIGATION MEASURES

Potential Additional Mitigation Measures

- 15.8.1

Previous archaeological investigation has demonstrated the potential of the site to contain well preserved remains of the later medieval, post-medieval and industrial development of the area. The extensive nature of those previous investigations provides a high confidence rating for the assessment of the site and obviates any need for further investigation in advance of the determination of the applications. Further surviving archaeological remains would require targeted archaeological excavation in advance of preliminary ground works and the excavation for the basements and piled foundations.
- 15.8.2

This would allow remains to be recorded prior to their removal and to enhance the understanding of the significance of the remains. An Archaeological watching brief in areas not affected by deep ground intrusions would ensure that localised surviving remains are recorded. Such work would normally be carried out in accordance with an approved Written Scheme of Investigation under the terms of a standard planning condition. Archaeological work would be the responsibility of LBH and LBTH under advice from archaeological advisers at GLAAS.

15.9 RESIDUAL EFFECTS

- 15.9.1

For the Revised Scheme the mitigation measures described in paragraph 15.9.1 – 15.9.2 will ensure that there are no residual effects on buried heritage assets.
- 15.9.2

The summary of residual effects of the Revised Scheme is shown in **Table 15.9**.

Table 15.9 Significant Residual Effects

Resource of Receptor affected	Significance of Potential Impact Prior to Mitigation	Mitigation Measures	Residual Effect
Remains of the 19 th century railway development of the area, including footings of Shoreditch Station and Bishopsgate Goods Yard. (High potential)	Permanent, direct, Major/moderate adverse	Mitigation through targeted archaeological excavation or watching brief to preserve by record any archaeological remains	Negligible
Remains associated with the post medieval development of the area in the 16th to 18th Centuries (High potential)	Permanent, direct, Major/moderate adverse		Negligible
Later medieval remains associated with agriculture or brickearth extraction (Moderate potential)	Permanent, direct, Moderate/minor adverse		Negligible
Possible, previously unrecorded remains dating from the prehistoric to early medieval periods (Low potential)	Permanent, direct, Uncertain adverse (low for isolated artefacts)		Negligible

- 15.9.3

There are no likely significant environmental effects on archaeology as a result of the Revised Scheme.

Residual Impacts of Applying the Minimum Parameter Development Envelope

- 15.9.4

The approach to the archaeology assessment focuses on the site area and does not differentiate between the outline and detailed components or consider the scale or layout of the massing. Therefore, the archaeology assessment does not apply either the maximum or minimum building envelope as it does not have any relevance to the assessment.
- 15.9.5

The maximum development basement levels have been assessed with respect to likely levels of archaeological remains. The worst-case scenario with respect to building foundations has been assessed as deeper piling would not impact on buried heritage assets.

15.10 COMPARISON OF THE 2015 PROPOSED DEVELOPMENT RESIDUAL EFFECTS WITH THE 2019 REVISED SCHEME

- 15.10.1

The residual effects for the 2015 Proposed Development are unchanged with the exception of the potential for archaeological impact associated with the basement construction for Plots 4, 5, and 6 (Plots C, D and E under the 2015 Proposed Development). These have been revised downwards due to the removal of the basements from the proposed buildings on these plots as outlined in **Table 15.10**.

Table 15.10 Comparison of pre- and post- mitigation effects between the 2015 Proposed Development and the 2019 Revised Scheme

Buried Heritage Asset	2015 Proposed Development		2019 Revised Scheme	
	Pre-mitigation effects	Residual effects	Pre-mitigation effects	Pre-mitigation effects
Remains of the 19 th century railway development of the area, including footings of Shoreditch Station and Bishopsgate Goods Yard. (High potential)	Permanent, direct, Major/moderate adverse (site wide, excluding Plot 7 and platform based plots)	Negligible	Plots 1, 2: Permanent, direct, Major/moderate adverse Plots 3, 4, 5, 6, 8A, 10 and 11 Permanent, direct, moderate/minor adverse	Negligible
Remains associated with the post medieval development of the area in the 16th to 18th Centuries (High potential)	Permanent, direct, Major/moderate adverse (site wide, excluding Plot 7 and platform based plots)	Negligible	Plots 1, 2: Permanent, direct, Major/moderate adverse Plots 3, 4, 5, 6, 8A, 10 and 11 Permanent, direct, moderate/minor adverse	Negligible
Later medieval remains associated with agriculture or brickearth extraction (Moderate potential)	Permanent, direct, Moderate/minor adverse (site wide, excluding Plot 7 and platform based plots)	Negligible	Plots 1, 2: Permanent, direct, moderate/minor adverse Plots 3, 4, 5, 6, 8A, 10 and 11 Permanent, direct, minor adverse	Negligible
Possible, previously unrecorded remains dating from the prehistoric to early medieval periods (Low potential)	Permanent, direct, Uncertain adverse (low for isolated artefacts) (site wide, excluding Plot 7 and platform based plots)	Negligible	Plots 1, 2: Permanent, direct, Uncertain, likely moderate- minor adverse Plots 3, 4, 5, 6, 8A, 10 and 11 Permanent, direct, Uncertain, likely minor adverse	Negligible

15.11 CUMULATIVE EFFECTS

Cumulative Impacts of Individual Impacts

- 15.11.1 The cumulative effects of individual impacts occur when a single receptor is affected by more than one impact at any point in time. An exercise which tabulates the residual effects of this ES Addendum against relevant receptors, and so identifies the potential for combined cumulative impacts, has been undertaken.
- 15.11.2 Reference should be made to **Chapter 19: Effect Interactions** of this ES Addendum for further details.
- ### Cumulative Effects of the Revised Scheme with Other Development Schemes
- 15.11.3 Cumulative effects are the combined effects of several development schemes (in conjunction with the Revised Scheme) which may, on an individual basis be insignificant but, cumulatively, have a significant effect.
- 15.11.4 The ES Addendum has given consideration to 'Cumulative 'Effects' for schemes located within 1 km radius from the boundary of the site as outlined in Table 3.6 of **Volume 2 Chapter 3: EIA Methodology**.
- 15.11.5 **Table 15.11** lists nearby development schemes that have been considered in this assessment. Consideration of cumulative impacts has been determined with reference to archaeological assessment reports attached to the planning applications available through the online planning application databases of LBH and LBTH.
- 15.11.6 Generally, the site and the schemes in its immediate vicinity are in an area that was predominantly in open fields until the 17th century. Evidence of rural activity such as ditches or cultivation soils may be shared but are considered to be fairly widespread rather than site-specific, and there is therefore unlikely to be a significant cumulative impact. For the post-medieval period the schemes are likely to share evidence of domestic and industrial development, again considered to be widespread, and there is unlikely to be a significant cumulative impact.

Table 15.11 Summary of Cumulative Impacts

Map Reference	Scheme Name and Reference Number	Status	Resource Potentially Shared with LDS	Residual Cumulative Impact
1 (LBTH)	Land within former Truman's Brewery site, (LPA Ref. PA/12/00090)	Application permitted (12 April 2012). Permission has lapsed without implementation.	Potential to have later medieval agricultural features possibly identified within the site. If present there would be a potential cumulative impact on these remains from the combination of these developments, but the environmental impact would not be elevated (ie warranting alternative mitigation strategy).	None identified
2 (LBTH)	London Fruit Exchange Brushfield Street And Multi Storey Car Park Whites Row, Brushfield Street, London (LPA ref: PA/16/03266)	Application permitted (11 October 2017)	Potential to have remains of later medieval agricultural features within the former Lollesworth field, possibly identified within the site. If present there would be a potential cumulative impact on these remains from the combination of these developments, but the environmental impact would not be elevated (ie warranting alternative mitigation strategy).	None identified
3 (LBH)	Art Otel - east of Old Street roundabout at the junction of Old Street, Rivington Street and Great Eastern Street. (LPA Ref: 2009/2405)	Under construction	<i>No Environmental Statement or archaeological assessment provided.</i> <i>Limited likelihood of shared resources.</i>	None identified

4 (LBTH)	Black Lion House, 45 Whitechapel Road (LPA Ref: PA/13/02162)	Under construction	<i>No Environmental Statement or archaeological assessment provided.</i> <i>Limited likelihood of shared resources.</i>	None identified
5 (LBTH)	Aldgate Place (LPA Ref: PA/13/00218)	Under construction	No shared resources other than a general potential for post-medieval remains.	None identified
6 (CoL)	Bevis Marks House, 24 Bevis Marks (LPA Ref: 14/00433/FULMAJ)	Under construction	Potential to have Roman, later medieval and post-medieval remains, possibly identified within the site. If present there would be a potential cumulative impact on these remains from the combination of these developments, but the environmental impact would not be elevated (ie warranting alternative mitigation strategy).	None identified
7 (LBTH)	Fakruddin Street and Pedley Street (LPA Ref: PA/12/02228)	Under construction	<i>No Environmental Statement or archaeological assessment provided.</i>	None identified
8 (LBTH)	11-31 Toynbee Street and 67-69 Commercial Street, London (LPA Ref: PA/16/02878/A1)	Application permitted (18 October 2017)	<i>No Environmental Statement or archaeological assessment provided.</i> <i>Limited likelihood of shared resources.</i>	None identified
9 (LBTH)	Site At 3-11 Goulston Street And 4-6 And 16-22 Middlesex Street (LPA Ref: PA/18/01544)	Decision pending	No shared resources other than a general potential for later medieval quarrying and post-medieval remains.	None identified
10 (LBTH)	Enterprise House, 21 Buckle Street, London, E1 8NN (PA/16/03552).	Granted Planning Permission at appeal 17 December 2018.	No shared resources other than a general potential for post-medieval remains	None identified
11 (LBTH)	Site at 2-6 Commercial Street, 98 and 101-105 Whitechapel High Street, carpark to the rear of 95-97 Whitechapel High Street (known as Spreadeagle Yard) and Canon Barnett Primary School (LPA Ref: PA/18/02615/A1)	Registered	No shared resources other than a general potential for post-medieval remains.	None identified
12 (LBTH)	Land bounded by 2-10 Bethnal Green road, 1-5 Chance Street (Huntingdon Industrial Estate) and	Not yet submitted.	This planning application has not yet been submitted. Due to the proximity to the site there is some potential for a cumulative impact on remains from the combination of these developments.	Negligible

	28-32 Redchurch Street (PA/19/00294)	EIA Scoping Opinion issued 7 March 2019.	This site is in the Shoreditch Tier 2 Archaeological Priority Area, designated for its potential to contain multiperiod remains, Roman burials from the Ermine Street cemetery, and evidence of London's urban and industrial development. The environmental impact is unlikely to be elevated (ie warranting alternative mitigation strategy).	
13 (LBH)	Principal Tower (Principal Place / Bishops Place) (LPA Ref: 2016/2044)	Under Construction or Complete & Unsold	Potential to have Palaeoenvironmental, Roman and post-medieval remains, possibly identified within the site. If present there would be a potential cumulative impact on these remains from the combination of these developments, but the environmental impact would not be elevated (ie warranting alternative mitigation strategy).	None identified
14 (LBH)	The Stage (Plough Yard) (LPA Ref: 2015/3453)	Under Construction or Complete & Unsold	No shared resources other than a general potential for post-medieval remains	None identified
15 (LBH)	5-29 Sun Street 8-16 Earl Street & 54 Wilson Street (LPA Ref: 2015/0877)	Under Construction or Complete & Unsold	<i>No Environmental Statement or archaeological assessment provided.</i> <i>Limited likelihood of shared resources.</i>	None identified
16 (LBTH)	120 Vallance Road 2-4 Hemming Street (LPA Ref: PA/15/01231)	Under Construction or Complete & Unsold	No shared resources other than a general potential for post-medieval remains	None identified
17 (LBH)	201-207 Shoreditch High Street (LPA Ref: 2015/2403)	Permission Granted	Potential to have remains of post-medieval remains, possibly identified within the site, specifically related to the 19 th century theatres. If present there would be a potential cumulative impact on these remains from the combination of these developments, but the environmental impact would not be elevated (i.e. warranting alternative mitigation strategy).	None identified
18 (LBH)	13-14 Appold Street (LPA Ref: 2015/1685)	Permission Granted – Not Started	Potential to have remains of Roman, and post-medieval remains, possibly identified within the site. If present there would be a potential cumulative impact on these remains from the combination of these developments, but the environmental impact would not be elevated (i.e. warranting alternative mitigation strategy).	None identified
19 (LBH)	84-86 Great Eastern Street (LPA Ref: 2015/1834)	Permission Granted – Not Started	<i>No Environmental Statement or archaeological assessment provided.</i> <i>Limited likelihood of shared resources.</i>	None identified

20 (LBH)	1-13 Long Street (LPA Ref: 2012/2013)	Under Construction	No shared resources other than a general potential for post-medieval remains.	None identified
21 (LBTH)	114-150 Hackney Road (LPA Ref: PA/17/00250)	Permission Granted – Not started	<i>No Environmental Statement or archaeological assessment provided.</i> <i>Limited likelihood of shared resources.</i>	None identified
22 (CoL)	100 Liverpool Street & 8 - 12 Broadgate (LPA Ref: 15/01387/FULEIA)	Under Construction	<i>No Environmental Statement or archaeological assessment provided.</i> <i>Limited likelihood of shared resources.</i>	None identified
23 (LBH)	97-137 Hackney Road (LPA Ref: 2015/3455)	Under Construction	<i>No Environmental Statement or archaeological assessment provided.</i> <i>Limited likelihood of shared resources.</i>	None identified
24 (CoL)	Land Adjacent To 20 Bury Street London EC3A 5AX (18/01213/FULEIA).	Likely to be determined before the Proposed Development.	No shared resources other than a general potential for post-medieval remains	None identified
25 (LBI)	Speedfix House and Monmouth House, 19 – 23 Featherstone Street (LPA Ref: P2015/3136/FUL)	Permission Granted – Not Started	<i>No Environmental Statement or archaeological assessment provided.</i>	None identified
26 (CoL)	150 Bishopsgate (LPA Ref 17/00623/FULL)	Granted	<i>No Environmental Statement or archaeological assessment provided.</i>	None identified
27 (CoL)	(100 Bishopsgate) 61 St Mary Axe, 80-86 Bishopsgate, 88-90 Bishopsgate, 12-20 Camomile Street, 15-16 St Helen's Place And 33-35 St Mary Axe (North Elevation Only) (LPA Ref: 12/00129/FULL)	Granted	Potential to have remains of Roman, medieval and post-medieval remains, possibly identified within the site. If present there would be a potential cumulative impact on these remains from the combination of these developments, but the environmental impact would not be elevated (ie warranting alternative mitigation strategy).	None identified
28 (LBTH)	Silwex House, Quaker street (LPA Ref: PA/16/00392/A1)	Granted 2016	Potential to have remains of later medieval agricultural features within the former Lollesworth field, possibly identified within the site. If present there would be a potential cumulative impact on these remains from the combination of these developments, but the environmental impact would not	None identified

			be elevated (ie warranting alternative mitigation strategy).	
29 (LBH)	Shoreditch Village (183-187 Shoreditch High Street, bounded by Holywell Lane, New Inn Yard and rail viaduct) (LPA Ref: 2017/0596)	Granted 2018	Potential to have remains of Roman and post-medieval remains as well as medieval remains from Holywell Priory, possibly identified within the site. If present there would be a potential cumulative impact on these remains from the combination of these developments, but the environmental impact would not be elevated (ie warranting alternative mitigation strategy).	None identified
30 (LBH)	168-178 Shoreditch High Street (LPA Ref: 2015/3316)	Granted 2016	No shared resources other than a general potential for post-medieval remains	None identified
31 (LBTH)	281-285 Bethnal Green Road, London, E2 6AH (PA/17/00299/A1).	Planning Permission Granted 16 June 2017	No shared resources other than a general potential for post-medieval remains	None identified
32 (LBTH)	Land bounded by Elder Street, Folgate Street, Blossom Street, Norton Folgate, Shoreditch High Street and Commercial Street, E1 (PA/14/03548)	Granted Planning Permission 3 May 2016.	The majority of the site lies within a scheduled monument (St Mary Spital) with major adverse pre-mitigation effects for later medieval remains. Each stage of works requires a Scheduled Monument Application. Mitigation measures range from full archaeological excavation to preservation in situ. There is a low likelihood of shared resources. Mitigation measures in place at this site are sufficient to reduce the cumulative effect to negligible.	Negligible
33 (COL)	2-3 Finsbury Avenue 16/00149/FULEIA	Granted planning permission 29 March 2018	No shared resources other than a general potential for post-medieval remains	None identified
34 (LBTH)	Former Beagle House Now Known As Maersk House, Braham Street, London (PA/18/00971)	Planning Permission Granted 29 March 2019	No shared resources other than a general potential for post-medieval remains	None identified
35 (LBH)	49-51 Paul Street Hackney London EC2A 4LJ (2018/2104).	Likely to be determined before the Proposed Development.	No shared resources other than a general potential for post-medieval remains	None identified
36 (LBH)	Development House 56-64 Leonard Street LONDON EC2A 4LT (2017/4694)	Likely to be determined before the Proposed Development.	No shared resources other than a general potential for post-medieval remains	None identified

15.11.7 Any temporary uses of plots during the 13 year demolition and construction programme (e.g. 'Pop Up' uses such as the existing 'Power League' football pitches & Box Park retail) would not affect buried heritage assets unless there was below ground disturbance associated with them.

15.12 QUALITATIVE COMPARISON OF THE 2015 PROPOSED DEVELOPMENT WITH THE 2019 REVISED SCHEME

15.12.1 The main difference between the Revised Scheme and the 2015 Proposed Development is that new basements no longer feature in the masterplan for any buildings other than those in Plot 1 and 2. This would lead to a minor reduction in pre-mitigation impact on archaeological resources in the east of the site as impacts on archaeological resources are likely to be limited to the footprint of the piled foundations. With the implementation of the proposed mitigation, there would be no difference between 2015 Proposed Development and the Revised Scheme on the residual archaeological effects.

15.13 SUMMARY AND CONCLUSION

- 15.13.1 A desk based assessment carried out by MoLAS, along with the findings of previous MoLAS investigations on the site, were used to inform the baseline conditions.
- 15.13.2 The assessment found that the site has a low potential to contain archaeological remains dated to the prehistoric, Roman or Saxon period
- 15.13.3 The site has a moderate potential to contain archaeological remains from the later medieval period. Later medieval pits and horizons have been discovered through excavations on the west end of the site, associated with the road and nearby settlements of Holywell and Spitafields.
- 15.13.4 The site has a high potential to contain remains of the post-medieval period as the site became increasingly urbanised between the 16th and 18th centuries. The remains of houses from this period have been discovered through excavation; the significance of any remains is considered to be medium.
- 15.13.5 The site has a very high potential to contain remains of 19th century railway structures. The foundations of the goods yards, and cellars and basements from the same period, were found in previous archaeological work. The significance of any remains is considered to be medium.
- 15.13.6 The effects of construction and demolition are likely to be greatest to the west of the site where Plots 1 and 2, which will have accompanying basements, will be located. A permanent, direct, major-moderate adverse effect before mitigation is anticipated for 16th-18th and 19th century remains in this area, representing the greatest potential impact on the site pre-mitigation.
- 15.13.7 The mitigation proposed for these impacts consists of targeted archaeological excavation in advance of preliminary ground works and the excavations for basements and foundations. This would allow remains to be recorded prior to their removal. This would be accompanied by an archaeological watching brief in areas not affected by deep ground intrusions.
- 15.13.8 With the implementation of the proposed mitigation, the residual effects on buried heritage assets would be negligible. There is unlikely to be a significant cumulative impact of the Revised Scheme with other development schemes.

Receptor/ Affected Group	Value or Sensitivity (Significance) of Receptor	Activity or Impact	Embedde d Design Mitigation	Magnitude/ Spatial Extent/ Duration/ Likelihood of Occurrence	Significance of effect	Additional Mitigation	Residual Magnitude of Impact	Significance of Residual effect
Construction								
Remains of the 19 th century railway development of the area, including footings of Shoreditch Station and Bishopsgate Goods Yard.	Medium	Complete removal in the footprint of basements and foundation piling	None	High	Major / moderate adverse	Mitigation through targeted archaeological excavation or watching brief to preserve by record any archaeological remains	Negligible	Negligible
				Direct				
				Local				
				Permanent				
				Very Likely				
Remains associated with the post medieval development of the area in the 16th to 18th Centuries	Medium	Complete removal in the footprint of basements and foundation piling	None	High	Major / moderate adverse	Mitigation through targeted archaeological excavation or watching brief to preserve by record any archaeological remains	Negligible	Negligible
				Direct				
				Local				
				Permanent				
				Likely				
Later medieval remains associated with agriculture or brickearth extraction	Medium	Complete removal in the footprint of basements and foundation piling	None	High	Moderate / minor adverse	Mitigation through targeted archaeological excavation or watching brief to preserve by record any archaeological remains	Negligible	Negligible
				Direct				
				Local				
				Permanent				
				Possible				
Possible, previously unrecorded remains dating from the prehistoric to early medieval periods	Low / Uncertain	Complete removal in the footprint of basements and foundation piling	None	High	Uncertain adverse (low for isolated artefacts)	Mitigation through targeted archaeological excavation or watching brief to preserve by record any archaeological remains	Negligible	Negligible
Cumulative schemes								
None	None	None	None	None	None	None	None	None

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