ARCHAEOLOGICAL DESK BASED ASSESSMENT AND PRINCIPLES OF INVESTIGATION STRATEGY

Southwark Local Development Order (LDO), London Borough of Southwark

Archaeological Desk Based Assessment
Southwark Local Development Order
Version 6
31 March 2023

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Quality Management

Version	Status	Authored by	Reviewed by	Approved by	Review date
01	Draft for comments	Gillian King	Gillian King	Gillian King	March 2023
02	With LBS Comments by Christopher Constable	Gillian King	Gillian King	Gillian King	13 March 23
03	With Veolia Comments	Gillian King	Gillian King	Gillian King	16 March 23
04	Final	Gillian King	Gillian King	Gillian King	20 March 23
05	Final with LBS comments	Gillian King	Gillian King	Gillian King	23 March 23
06	Final with Principles of Archaeological Investigation	Gillian King	Gillian King	Gillian King	31 March 23

Approval for issue

Gillian King		31 March 2023

File/Model Location

Document location:	S/JAC28727
Model / Appendices location:	N/JAC28727

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EXECUTIVE SUMMARY

This desk based assessment has been prepared by RPS Group Limited on behalf of the London Borough of Southwark and Veolia ES (UK) Limited, to identify the below ground archaeological potential of the proposed Local Development Order area. The assessment forms an addendum/appendix to support the LDO application, with regard to archaeological interest. The LDO applies to a large area of Southwark (Figure 1), this assessment covers the whole LDO Study Area but also highlights one area of the District Heat Network Extension within the LDO area, known as the Southwark 2.0 project (Figure 16). The RPS team are grateful to Southwark Council's Borough Archaeologist for providing a Brief for the work (November 2022), contributing to the research content of the text, and for advice and guidance throughout the project. We are also grateful to the team at Historic England's Greater London Historic Environment Record (GLHER) for their provision of, and assistance with, the GIS and digital ARCHES GLHER data presented throughout this report.

A Local Development Order (LDO) will enable the efficient installation of the Southwark 2.0 District Heating Network (DHN). The LDO Study Area encloses a large area in Southwark of c. 505 hectares (5,050,000 square metres). The objective of the DHN is to supply low carbon heat to council-managed housing estates across Southwark, comprising nearly 2,700 properties, enabling them to connect to combined heat and power, reducing the reliance on natural gas or oil boilers while also reducing emissions of CO2 and NOx gases

In 2013, Veolia ES (UK) Limited and Southwark Council delivered the South East London Combined Heat and Power (SELCHP) District Heating Network, and now Southwark Council, with Veolia as the delivery partner, aim to extend the existing agreement in the Old Kent Road and North Peckham areas of Southwark (Figures 1 and 16).

This assessment is in accordance with a Southwark Council Brief (Appendix 2), central and local government policy and guidance on archaeology and planning, and the '*Standard and Guidance for Historic Environment Desk-Based Assessments'* as set out by the Chartered Institute for Archaeologists (CIfA, October 2020). The Brief identifies that the assessment will form a robust basis for any future written schemes of investigation (WSIs) that will provide a proportionate response commensurate to any archaeological impacts identified.

In terms of relevant, nationally significant designated archaeological heritage assets, no Scheduled Monuments, World Heritage Sites, Registered Parks or Gardens, Historic Battlefields or Protected Wrecks lie within the LDO Study Area, but the study area does include large areas of the Southwark Tier 1 Archaeological Priority Area (APA) of 'North Southwark and Roman Roads', and contains the historic Southwark Tier 2 Archaeological Priority Area of 'Peckham Village'; as well as several listed and locally listed buildings, conservation areas and London Square areas. The neighbouring Archaeological Priority Areas (APAs) of the London Borough of Lewisham in the immediate vicinity of SELCHP are also referenced within this report.

As the LDO Study Area is so large, it has not been practical or possible to discuss every archaeological site or findspot in detail but the assessment provides an informed high-level overview of the archaeological resource (Figure 1). The assessment also provides detailed focus on areas of the Southwark 2.0 Proposed Primary Network pipework delivery, known as the Phase 1 and Phase 2 works, in the form of a walkover survey; the results of which are submitted as a series of annotated photographic plates (Plates 1 to 78).

The assessment concludes that the LDO Study Area contains the potential to inform on some of the earliest archaeology of Southwark and contribute to areas, stories and themes of significance, as follows:

- The Mesolithic and early prehistoric sites along the Old Kent Road;
- The palaeoecological environment and prehistoric archaeology from the shoreline and relict fills of the large late glacial Bermondsey Lake in the north of the LDO Study Area and its associated riverine geology and topology;
- To further define the course of the River Peck and any other watercourses of Southwark and their formation processes and relationship to the prehistoric, Roman and later landscapes;
- The route of the Roman road of Watling Street and roadside activity following its projected line just south of the Old Kent Road, especially in Brimmington Park and evidence of the enigmatic Lewes to London secondary Roman road;

- Potential evidence for the dating and construction of the modern alignment of the Old Kent Road;
- Inform on the complex histories of the Old Kent Road, its links to pilgrims, drovers and industrialists, and connections with Chaucer, Dickens and other social histories;
- Post medieval industrial archaeology relating to the Grand Surrey Canal, bridging points, the industry of gas engineer George Livesey and the numerous local industries of the village cores of Bermondsey, Peckham and Camberwell;
- The rebuilding of London following the Second World War and the growth of the 1950s estates, their valuable and authentic contribution to local initiatives, social value and public engagement by knowledge sharing for the public good.

Although the pipe trench groundworks along each road in the Study Area will be of a small scale, the cumulative impact of the whole scheme is identified as significant, presenting an opportunity to record archaeological transects through the geology and topography of the landscape. This could provide information on the spatial distribution of archaeological sites and the formation processes that have led to this distribution. The assessment recognises the potential of the DHN to inform on the effective integration of London's heritage in regenerative change and make a positive contribution to 'sensitivity mapping', 'characterisation' and the understanding of thematic research objectives for Southwark - aimed at understanding, protecting and celebrating the wider archaeological environment of this part of the borough.

The assessment notes that the DHN provides an opportunity to investigate the archaeology of 'road systems,' which is a different model to the archaeology of 'property parcels' (even those that front onto or abut roads) and is subject to different change scenarios and iterative stages of development activity. In summary, the absence of archaeology in property plots adjoining the road network sites is not necessarily indicative of archaeology being also absent in the nearby road systems (and vice-versa).

On the balance of the evidence, the assessment concludes that the construction activity associated with the works in the LDO Study Area, such as the proposed Southwark 2.0 District Heating Network and any other future heat networks, will have a generally low impact on buried archaeological heritage assets of high to moderate archaeological significance and a low to negligible impact on built heritage assets; additionally these impacts can be mitigated by the implementation of a programme of archaeological watching brief works targeted on areas of archaeological sensitivity identified in this assessment. Some distinct areas of high significance will require targeted archaeological excavation works.

The DHN is anticipated to cut through mainly modern made-ground and road make-up deposits for much of its below ground level impact, and the report concludes that it is unlikely that there will be any remains of national significance encountered that might present a constraint to the DHN proposal or form a material design consideration. The risk of harm to archaeological deposits can also be weighed against the demonstrable public and environmental benefits delivered by the scheme, and mitigated by design, route changes, watching brief or excavation fieldwork and a programme of public engagement, ensuring the results of any significant archaeological discoveries are disseminated.

In line with the Brief, pre-application consultation, and the results of this assessment, a watching brief (or potentially targeted excavation) will be required, to confirm the potential extent, character, date and significance of any archaeological remains which may be present. The assessment identifies five areas of archaeological potential for the Proposed Primary Network Southwark 2.0 Phase 1 and Phase 2 areas (Figure 16), as follows:

1. Surrey Canal Road to Ilderton Road (Bermondsey Lake prehistory and Grand Surrey Canal industrial archaeology)
2. Old Kent Road (Prehistoric and Roman)
3. Brimmington Park (the projected line of Roman Watling Street). Localised excavation required.
4. Asylum Road area (Roman secondary road archaeology and evidence of the River Peck). Localised excavation.
5. Peckham Canal Walk (Grand Surrey Canal industrial archaeology)

The objective of this assessment is to quantify archaeological significance across the LDO Study Area, and to inform any future Written Scheme of Investigation prepared to safeguard the archaeological interest identified, in accordance with the Brief and Policy 23 Archaeology of the Southwark Local Plan 2022. A 'Principles of Archaeological Investigation and Notification to the LPA' strategy is also provided as Appendix 4, which sets out what will need to be applied for any future construction-integrated archaeological works.

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Plates 1 to 78: Site walkover of the Phase 1 and Phase 2 District Heat Network route from SELCHP (South East London Combined Heat and Power) in Lewisham to Peckham Square and from Queen's Road, Peckham to the Cossall Estate, 25th January 2023. The Brief required that the assessment included a walkover survey of the routes proposed for the major engineering works to install the connections. Particularly this has noted elements of street furniture of potential interest that may be impacted by the excavation works.

Appendices

1 INTRODUCTION AND SCOPE OF STUDY

Introduction

1.1 The subject of this assessment, also known as the 'Study Area', is the Local Development Order (LDO) area of the proposed Southwark 2.0 District Heating Network, which covers a large area of central Southwark enclosing c. 505 hectares (5,050,000 square metres). The LDO Study Area is approximately centred at the junction of the Old Kent Road and Peckham Park Street at National Grid Reference (NGR) TQ 34458 77836, primarily within the administrative area of the London Borough of Southwark (Figure 1).

1.2 With regard to designated archaeological heritage assets, no Scheduled Monuments, World Heritage Sites, Registered Parks or Gardens (although Southwark Park borders the LDO Study Area to the north), Historic Battlefields or Protected Wrecks lie within the Study Area (Figure 2a). The LDO Study Area does include large areas of the Southwark Tier 1 Archaeological Priority Area (APA) of 'North Southwark and Roman Roads' and contains the historic Southwark Tier 2 Archaeological Priority Area of 'Peckham Village', as well as several listed and locally listed buildings, conservation areas and London Square areas (Figure 2f). The neighbouring Archaeological Priority Areas (APAs) of the London Borough of Lewisham in the immediate vicinity of SELCHP are also referenced within this report (Figure 2f).

1.3 The LDO Study Area forms an irregular polygon and extends from its northernmost point at the junction of Jamaica Road and Marine Street in the Bermondsey Spa area (NGR TQ 34136 79475), to its easternmost point at the junction of Lower Road and Hawkstone Road in Surrey Quays (NGR TQ 35628 78974) before continuing east just across the borough boundary into Lewisham and linking with the SELCHP plant. To the southeast, the Study Area extends south to the junction of Pomeroy Street and Queens Road Peckham (NGR TQ 35341 76694) before returning to the southwest limit at McNeil Road and Vestry Road, towards Denmark Hill (NGR TQ 33333 76315). The western edge of the polygon runs north from Vestry Way to the junction of Wells Way and Burgess Park (NGR TQ 3304 77581), following the line of the southern edge of Burgess Park to its junction with Sumner Road (Figure 1 and shown on Figures 2a to 2i).

History of the District Heating Network from SELCHP

1.4 The objective of the SELCHP network originating from SELCHP is to supply low carbon heat to council-managed housing estates across Southwark. In 2013, Veolia ES (UK) Limited and Southwark Council delivered the South East London Combined Heat and Power (SELCHP) District Heating Network (Southwark 1.0), and now Southwark Council, with Veolia as the delivery partner, wishes to extend the existing agreement to include additional locations around SELCHP, in the Old Kent Road and North Peckham areas of Southwark (Figure 1). Further details of the DHN are provided in the Project Overview document which should be read in conjunction with this report (Appendix 1). The LDO and this archaeological assessment will also be applicable to other District Heating Network Schemes that will be coming forward, whether initiated by Veolia or others across the LDO Study Area.

Scope of Study

1.5 To enable the efficient installation of the network, a Local Development Order (LDO) to permit the necessary development works will be undertaken.

1.6 A 'Brief' for the archaeological desk based assessment work was issued by Dr Constable on behalf of Southwark Council in November 2022. The Brief states that the aim of the assessment is to support the LDO application and provide a clear evidence-base of what archaeological responses

will be necessary to mitigate any potential harm to buried archaeology from the below-ground impact of the proposed network.

1.7 A 'Principles of Archaeological Investigation and Notification' strategy is also provided as Appendix 4, which sets out what will need to be in place for any future construction-integrated archaeological works, including targeted excavation, watching brief or other strategies (Appendix 4).

1.8 The Brief identifies that the desk based assessment needs also to provide a robust basis for a future written scheme of investigation (WSIs) that will provide the archaeological response to any archaeological impact identified. The Brief is shown as Appendix 2 and should also be read in conjunction with this report (Appendix 2).

1.9 The Brief requires that the assessment is undertaken by a suitably qualified and experienced archaeological organisation such as RPS, working to the bylaws and standards and guidance of the Chartered Institute for Archaeologists. RPS is a Registered Organisation with the Chartered Institute for Archaeologists. RPS can demonstrate a successful track-record of archaeological work within Southwark and adjacent south-London Boroughs. The author of the assessment is a full Member of the Chartered Institute for Archaeologists and has over 20 years' experience of working on archaeological projects in the London Borough of Southwark.

1.10 This assessment is in accordance with the Southwark Brief, and central and local government policy and guidance on archaeology and planning, as well as the '*Standard and Guidance for Historic Environment Desk-Based Assessments'* as set out by the Chartered Institute for Archaeologists (CIfA, October 2020).

1.11 As the LDO Study Area is so large, it has not been practical or possible to discuss every archaeological site or findspot in detail – especially for the post-medieval entries on the GLHER - but the assessment provides an informed high-level overview of archaeological interest (Figure 1). The assessment also provides detailed focus on the first area of Proposed Primary Network pipework delivery, known as the Southwark 2.0 Phase 1 and Phase 2 works in the form of an annotated walkover survey (Figure 1 and 16 {routes shown in Blue} and Plates 1 to 78). The focus on these areas in this assessment is because they are known areas of DHN development at the time of publication of this report.

1.12 The walkover survey of the Phase 1 and Phase 2 District Heat Network route from SELCHP (South East London Combined Heat and Power) in Lewisham to Canal Head Peckham Square, and from Queen's Road Peckham to the southern edge of the Cossall Estate took place on 25th January 2023. The walkover survey was conducted by Chris Constable of Southwark Council, Simon McKee and João Sousa of Veolia and Gillian King of RPS.

Opportunities

1.13 The assessment recognises the potential of the scheme to provide a transect through the archaeology of Southwark and make a positive contribute to the understanding of thematic research objectives for the wider historic environment of this part of London.

1.14 In line with relevant planning policy and guidance this desk based assessment seeks to clarify the LDO Study Area's archaeological potential and the need or otherwise for additional mitigation measures

1.15 The LDO Study Area and the Veolia Southwark 2.0 DHN Phase 1 and Phase 2 areas can be reasonably assessed as being generally of lower archaeological interest than other areas of the London Borough of Southwark; they avoid, for example, the ancient river frontage, the Roman settlement of North Southwark and the Roman Southern Cemetery, the Shakespearean theatres and bear-baiting arenas of Bankside, the Royal Palaces and Monastic Houses such as Platform Wharf and Suffolk Place/Brandon House, Winchester Palace or Bermondsey Abbey, and the core

industrial heritage of Brunel and the industrial history of the docks at Rotherhithe, Canada Water and Surrey Quays.

1.16 However, the LDO Study Area does contain evidence of some of the some of the earliest archaeology of Southwark, including Mesolithic and early prehistoric sites along the Old Kent Road and the palaeoecological environment and prehistoric archaeology recovered from the shoreline and relict fills of the large late glacial Bermondsey Lake and the associated riverine geology and topology seen on sites such as Bramcote Grove and Bricklayers Arms Railway Depot (where intact later prehistoric trackways and structures survive). The DHN works can also inform on the route of the Roman road of Watling Street and roadside activity following its projected line just south of the Old Kent Road, as well as evidence of the enigmatic Lewes to London secondary Roman road. It is possible the LDO Study Area may also provide information on the two thousand years of history of Old Kent Road and its significance from prehistoric and Roman times through to its use by pilgrims from Canterbury and medieval drovers from Kent. The stories of the Old Kent Road are numerous including connections with Chaucer, Dickens and other people, places and social histories; as well as the post medieval industrial archaeology relating to the Grand Surrey Canal, its routes and bridging points. The route can inform on the industrial development of Southwark, form the works of the gas engineer George Livesey on the numerous local industries that have grown up around the village cores of Bermondsey, Peckham and Camberwell. The DHN works could inform on these stories and many others including the rebuilding of this part of London following the Second World War and the growth of the 1950s estates and make valuable and authentic contributions to local initiatives, by knowledge sharing and public engagement so that the results of significant archaeological discoveries are disseminated for the public good.

1.17 Although, the groundworks along each street in the Study Area will be of a small scale, the cumulative impact of the whole scheme is noted and this presents a challenge and a unique opportunity to understand the wider historic environment and the heritage values of sites or areas, as well as record measured archaeological transects through the geology and topography of the landscape and provide information on the distribution of archaeological sites and the formation processes that have led to this distribution. The assessment recognises the potential of the network to inform the effective integration of London's heritage in regenerative change and make a positive contribute to 'sensitivity mapping', 'digital terrain modelling', 'characterisation' and the understanding of a number of thematic research objectives for understanding and celebrating the wider archaeological environment of this part of the borough.

1.18 The data received from the trenching for the DHN's is however unlikely to be far reaching enough to make a significant contribution to deposit modelling techniques, the area available for examination may well be insufficient and the depth of trenching may also lead to limited results, nevertheless the possibility of contributing to the geological deposit model for this area of Southwark should be explored.

1.19 The DHN project could possibly make a positive contribution to 'Sensitivity Mapping' which is a currently mainly rural archaeological initiative but has the potential to be a valuable tool for looking at large areas of the landscape and applying hierarchies of 'significance' or sensitivity. The technique has not been assessed on an urban, deeply stratified, multi-phase landscape – so the LDO could make a positive contribution to this nationwide initiative (see Section 3. Topography). This technique also contributes to 'Characterisation' models generally (see Figure 2h. Historic Landscape Characterisation Plot).

1.20 In line with the Brief and advice received from the Southwark Archaeologist during pre-application consultation, it is likely that a programme of archaeological watching brief work will be required during the trenching works for the DHN, to confirm the potential extent, character, date and significance of any archaeological remains which may be present. The primary objective of this desk-based assessment is to inform approaches to the recording and understanding of buried

archaeology so it can be detailed in the Written Scheme of Investigation. As the design of the scheme develops the objective is for the desk-based assessment to be a source to provide detailed baseline information to inform the future written scheme of investigation. The objective is for both documents to be attached to the LDO and their use enforced by conditions attached to the order.

1.21 Overall, it is considered unlikely that with regard to archaeological interest the whole LDO area and the DHN schemes within the LDO area (including Southwark 2.0 S) will impact upon any highly significant remains which might preclude development or provide a material design constraint to the DHN scheme for any areas within the wider LDO area.

1.22 The Brief states that the purpose of this assessment is to identify locations of potential archaeological significance within the LDO Study Area to enable the targeting of archaeological resources at the areas of significance and greatest potential impact from the works within the designed scheme. A 'Principles of Archaeological Investigation and Notification' strategy is also provided as Appendix 4, which sets out what will need to be in place for any future construction-integrated archaeological works, including targeted excavation, watching brief or other strategies (Appendix 4).

1.23 At the time of publication, the extent of the Southwark 2.0 DHN had been identified, so this has been assessed and locations of archaeological sensitivity have been identified and are discussed in Section 5 of this assessment report, for the Southwark 2.0 area.

1.24 The assessment forms a robust archaeological baseline for the whole LDO study area, however, and as future schemes are identified and come forward further areas of sensitivity can be identified examined more closely. This further examination will not require a new over-lying archaeological desk-based assessment but can use the baseline data presented in this over-arching assessment that supports the whole LDO study area. Some updates may be required if further archaeological discoveries are made in the future, that significantly change the evidence-base submitted in this report

Limitations

1.25 In any desk based assessment a degree of uncertainty is attached to the baseline data sources. This includes:

- The Historic Environment Record (GLHER ARCHES) can be limited because it often depends on "random" opportunities for research, fieldwork and discovery;
- Lack of clear dating evidence for sites;
- Documentary sources are rare before the medieval period and many historic documents are inherently biased;
- The construction usage and decline of the Grand Surrey Canal which ran across the LDO Study Area has involved several phases of large scale developmental impact which will have diminished or possibly completely removed earlier archaeological deposits along parts of its route;
- The impact of bombing in the Second World War and subsequent post-war area clearance is a feature of this part of the borough, with areas such as Brimmington Park, Cossall Park and Burgess Park containing evidence of this. These areas have seen significant impacts and the levels of archaeological survival may vary across these zones;
- The extent of truncation caused by post-war residential requirements, particularly the creation of the large residential estates in the 1950s with associated social infrastructure and landscaping works cannot be fully ascertained and also may have compromised buried archaeological remains;

- The difference between the archaeology of roads, and the archaeology of property parcels.

1.26 It should be noted that the archaeology of 'road systems' is a different model to the archaeology of 'property' parcels, even those that front onto roads and each location can be very different in nature and subject to different change scenarios in the form of iterative stages of road development activity; therefore, the absence of archaeology from adjoining sites is not necessarily indicative of archaeology being also absent in the nearby road system (and vice-versa).

1.27 The search of the GLHER data returned many hundreds of records and all these could not be interrogated individually for this assessment. It is hoped that the assessment forms a suitable over-arching and informed assessment of the primary research records from known sites, findspots and monuments and a suitable assessment of the secondary research data from fieldwork reports, map data, photographic sources and published and archive data sources.

Acknowledgements

1.28 This benefit below ground archaeological desk-based assessment has been prepared by Gillian King, Director (Heritage) of RPS Group Limited on behalf of London Borough of Southwark and Veolia ES (UK) Limited. Research for this assessment was provided by Alex Slater, with graphic work by Nida Bhunnoo and the photographic plates were prepared by Dan Messenger of RPS.

1.29 RPS are grateful to Veolia ES (UK) Limited for commissioning this project and to Simon McKee and João Sousa for their advice and assistance, especially with the walkover survey. The RPS and Veolia team are grateful to Chris Constable, Southwark Council's in-house Borough Archaeologist for his advice and guidance throughout the project and his attendance on the route walkover assessment. Thanks are due to the Southwark Council mapping team, Ali Weathrup and Stuart Carter, and to Historic England's Greater London Historic Environment Record (GLHER ARCHES) team, especially Sandy Kidd, Stuart Cakebread and Matthew Jones, for their painstaking work to provide the GIS and digital data for the LDO Study Area presented throughout this report.

2 PLANNING BACKGROUND AND DEVELOPMENT PLAN FRAMEWORK

2.1 National legislation regarding archaeology, including scheduled monuments, is contained in the Ancient Monuments and Archaeological Areas Act 1979, amended by the National Heritage Act 1983 and 2002, and updated in April 2014.

2.2 The Southwark 2.0 DHN will be managed by a Local Development Order (LDO) and is not a standard planning application; although those areas of the scheme that fall within the jurisdiction of the London Borough of Lewisham will be managed by standard planning control, via a planning application.

2.3 In March 2012, the government published the National Planning Policy Framework (NPPF), and it was last updated in July 2021. The NPPF is supported by the National Planning Practice Guidance (NPPG), which was published online 6th March 2014, with the guidance on Conserving and Enhancing the Historic Environment last updated 23 July 2019. (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment).

2.4 The NPPF and NPPG are additionally supported by three Good Practice Advice (GPA) documents published by Historic England: *GPA 1: The Historic Environment in Local Plans; GPA 2: Managing Significance in Decision-Taking in the Historic Environment* (both published March 2015). The second edition of *GPA3: The Setting of Heritage Assets* was published in December 2017.

Local Development Orders and Local Planning Policy

2.5 The NPPF 2021 places a renewed emphasis on encouraging Local Planning Authorities (LPAs) to use Local Development Orders (LDOs) to help set the planning framework for an area and bring forward development.

2.6 LDOs provide permitted development rights for specified types of development in defined locations. They are flexible and locally determined tools that LPAs can use to help accelerate the delivery of appropriate development in the right places. LDOs can help enable growth by positively and proactively shaping sustainable development in their area. They can play an important role in incentivising development by simplifying the planning process and making investment more attractive. Published updated technical guidance has been written for LPAs who want to use LDOs in their areas and includes advice on their development and implementation as well as the monitoring and delivery of them.

2.7 Notwithstanding the LDO regulatory regime for DHN's, the principles of the management of archaeological projects - to best practice in London - is mainly dictated by local and national planning policy and guidance. Therefore, although managed under the LDO, the planning background for Southwark is given below, as this will set the principals and standards of regulatory control and the works will be monitored by Dr Chris Constable, on behalf of the London Borough of Southwark and Mark Stevenson of Historic England (GLAS) on behalf of the London Borough of Lewisham.

2.8 The Local Development Order will grant permission for the construction of district heating networks within the area shown on Figure 1. The development permitted will mainly comprise the laying of pipes, cables, wires below ground; street furniture, informational signage above ground; and other engineering works as required. Local development orders can have attached conditions to secure an appropriate archaeological response which will be informed by archaeological documentation, primarily, the Southwark Brief (Appendix 2), this desk-based assessment and any future Written Schemes of Investigation (WSIs) for archaeological watching brief works.

2.9 Further details of one of the heating proposals is given in Appendix 2 Southwark 2.0 District Heating Network Project Overview (Appendix 1).

National Planning Policy

2.10 Section 16 of the NPPF, entitled *Conserving and enhancing the historic environment* provides guidance for planning authorities, property owners, developers and others on the conservation and investigation of heritage assets. Overall, the objectives of Section 16 of the NPPF can be summarised as seeking the:

- Delivery of sustainable development;
- Understanding the wider social, cultural, economic and environmental benefits brought by the conservation of the historic environment;
- Conservation of England's heritage assets in a manner appropriate to their significance; and
- Recognition that heritage makes to our knowledge and understanding of the past.

2.11 Section 16 of the NPPF recognises that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. Paragraph 194 states:

"In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation".

2.12 *Heritage Assets* are defined in Annex 2 of the NPPF as: *a building, monument, site, place, area or landscape positively identified as having a degree of significance meriting consideration in planning decisions*. They include designated heritage assets (as defined in the NPPF) and assets identified by the local planning authority during the process of decision-making or through the plan-making process (including local listing).

2.13 Annex 2 also defines *Archaeological Interest* as *a heritage asset which holds or potentially could hold evidence of past human activity worthy of expert investigation at some point*.

2.14 A *Designated Heritage Asset* comprises a: World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area.

2.15 *Significance* (for heritage policy) is defined as: *The value of a heritage asset to this and future generations because of its heritage interest. This interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting*.

2.16 *Setting of a heritage asset* is defined as: *The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral*.

2.17 In short, government policy provides a framework which:

- Protects nationally important designated Heritage Assets;
- Protects the settings of such designations;

- In appropriate circumstances seeks adequate information (from desk based assessment and field evaluation where necessary) to enable informed decisions;
- Provides for the excavation and investigation of sites not significant enough to merit *in-situ* preservation.

2.18 The NPPG reiterates that the conservation of heritage assets in a manner appropriate to their significance is a core planning principle, requiring a flexible and thoughtful approach. Furthermore, it highlights that neglect and decay of heritage assets is best addressed through ensuring they remain in active use that is consistent with their conservation. Importantly, the guidance states that if complete, or partial loss of a heritage asset is justified, the aim should then be to capture and record the evidence of the asset's significance and make the interpretation publicly available.

2.19 Key elements of the guidance relate to assessing harm. An important consideration should be whether the proposed works adversely affect a key element of the heritage asset's special architectural or historic interest. Additionally, it is the degree of harm, rather than the scale of development, which is to be assessed.

2.20 The level of 'substantial harm' is considered to be a high bar that may not arise in many cases. Essentially, whether a proposal causes substantial harm will be a judgment for the decision taker, having regard to the circumstances of the case and the NPPF. Importantly, harm may arise from works to the asset or from development within its setting. Setting is defined as the surroundings in which an asset is experienced and may be more extensive than the curtilage. A thorough assessment of the impact of proposals upon setting needs to take into account, and be proportionate to, the significance of the heritage asset and the degree to which proposed changes enhance or detract from that significance and the ability to appreciate it.

2.21 In considering any works under permitted development rights or by LDOs or as a planning application for development, the planning authority will be mindful of the framework set by government policy, in this instance the NPPF, by current Development Plan Policy and by other material considerations.

London Plan

2.22 The LDO area has also been assessed against relevant policies in the London Plan (March 2021). Chapter 7 'Heritage and Culture' contains relevant policies. Of relevance to archaeological sites and areas within Greater London is Policy HC1 as follows:

Policy HC1 Heritage conservation and growth

A. Boroughs should, in consultation with Historic England, local communities and other statutory and relevant organisations, develop evidence that demonstrates a clear understanding of London's historic environment. This evidence should be used for identifying, understanding, conserving, and enhancing the historic environment and heritage assets, and improving access to, and interpretation of, the heritage assets, landscapes and archaeology within their area.

B. Development Plans and strategies should demonstrate a clear understanding of the historic environment and the heritage values of sites or areas and their relationship with their surroundings. This knowledge should be used to inform the effective integration of London's heritage in regenerative change by:

1. **setting out a clear vision that recognises and embeds the role of heritage in place-making**
2. **utilising the heritage significance of a site or area in the planning and design process**

3. **integrating the conservation and enhancement of heritage assets and their settings with innovative and creative contextual architectural responses that contribute to their significance and sense of place**
4. **delivering positive benefits that conserve and enhance the historic environment, as well as contributing to the economic viability, accessibility and environmental quality of a place, and to social wellbeing.**

C. Development proposals affecting heritage assets, and their settings, should conserve their significance, by being sympathetic to the assets' significance and appreciation within their surroundings. The cumulative impacts of incremental change from development on heritage assets and their settings should also be actively managed. Development proposals should avoid harm and identify enhancement opportunities by integrating heritage considerations early on in the design process.

D. 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.

E. Where heritage assets have been identified as being At Risk, boroughs should identify specific opportunities for them to contribute to regeneration and place-making, and they should set out strategies for their repair and re-use.

London Borough of Southwark

2.23 The new Southwark Local Plan was formally adopted in February 2022. In summary, the adoption of the Southwark Plan means policy P23 Archaeology is the basis for the development management of archaeology within the borough. Policy P21 details significant designated and non-designated heritage assets within the Borough. The London Plan (2021) provides regional policy in the form of policy HC1 Heritage Conservation and Growth.

2.24 Standard and guidance for desk based assessments is provided by the Chartered Institute for Archaeologists *Standard and guidance for historic environment desk-based assessment* (October 2020). Guidance for Archaeological Projects in Greater London (April 2015) has been produced by Historic England GLAAS and provides some advice for the production of desk-based assessments. This document is acknowledged to be out of date and is currently programmed to be revised in 2023. It should be noted that the GLAAS advice has limited relevance for Southwark in its present form.

2.25 Archaeological advice and guidance for sites within the borough, is obtained through consultation with the Council's in-house Borough Archaeologist, Dr Chris Constable. Southwark is now the only London Council, which has their own in-house archaeological advisor, including the City of London since 2022.

2.26 The relevant policies of the new Southwark Local Plan are as follows:

P21 Conservation of the historic environment and natural heritage

Development must:

1. Conserve and enhance the significance of the following designated and non-designated heritage assets and their settings:

1. **Scheduled monuments; and**
2. **Sites of archaeological interest; and**

3. Protected London squares; and

4. Registered parks and gardens; and

5. Trees within the curtilage of a listed building; and

6. Trees that contribute to the historic character or appearance of conservation areas; and

7. Trees that are subject to a Tree Preservation Order (TPO); and 8. Ancient hedgerows; and

9. Buildings and land with Article 4 (1) directions inside and outside conservation areas; and

10. Unlisted buildings of townscape merit; and

11. Undesignated heritage assets including Second World War Stretcher Fences; and

12. Foreshore and river structures.

2. Enable the viable use of the heritage asset that is consistent with its on-going and long term conservation; and

3. Provide robust justification for any harm to the significance of the heritage asset that results from the development.

Reasons

Southwark is home to a wide array of historic assets of local, regional and national importance. They help define our historic character, provide a sense of place and enrich the townscape. We will assess the impact on the significance of designated and non-designated heritage asset when determining planning applications.

P23 Archaeology

1. Development must conserve the archaeological resources commensurate to its significance; and

2. Development must preserve archaeological remains of national importance in situ and preserve archaeological remains of local importance in situ unless the public benefits of the development outweigh the loss of archaeological remains. Where archaeological remains cannot be preserved in situ the remains must be excavated, recorded, archived, published, interpreted and displayed through a detailed planned programme of works. There may also be a requirement for a programme of public engagement, in order that the results of significant archaeological discoveries are disseminated. The scale of this public engagement will be based upon on the significance and interest of the findings, but may involve site visits for the public or other means of on and of site viewing; and

3. Development must consider the archaeological interest and significance of sites that lie outside of an APA. Sites outside APAs will be assessed against the historic environment record for Southwark. Requirements will be secured by condition where necessary.

Reasons

1. Southwark has immensely rich, varied and important archaeological sites. Archaeological research has revealed prehistoric sites, with early settlement and land management on the higher and drier islands and well-preserved waterlogged structures and deposits surviving in the channels and lower-lying inter-tidal areas. Romans settled on the banks of the Thames after AD 43 and set up the Roman provincial capital Londinium which spanned both sides of

the river and included northern parts of Southwark. During this period major roads were built from Southwark to other Roman towns in the south of England.

2. Archaeological evidence for the Saxon period is more difficult to detect, but the northern borough developed rapidly in the medieval period and post-medieval period. The historic road system, villages, parishes and parks further south and east also contain important archaeological information about the developing rural community of Southwark. The historic village cores of Peckham, Camberwell, Rotherhithe, Walworth and Dulwich, have the potential for the survival of archaeological remains from many periods.

3. There are currently six Archaeological Priority Areas (APAs) in Southwark. An APA is a defined area where there is significant known archaeological interest or particular potential for new archaeological discoveries. The designation of these areas is based on evidence held in the Greater London Historic Environment Record (GLHER), maintained by Historic England. Southwark's APAs are:

- **APA1- North Southwark and Roman Roads**
- **APA2 - Walworth Village**
- **APA3 - Camberwell Village**
- **APA4 - Peckham Village**
- **APA5 - Dulwich Village**
- **APA6 - Lordship Lane Burial Mound**

4. Planning applications affecting sites within Archaeological Priority Areas (APAs) will be accompanied by an archaeological assessment and a report on the results of a field evaluation of the site, including an assessment of the impact of the proposed development on the archaeological resource. The assessment should identify and describe the significance of the archaeological interest of the site, including any contribution made by the archaeological setting of the site. Any harm or loss of archaeological resource resulting from development will require justification.

Relevant National and Local Designations

2.27 The LDO Study Area lies within a Tier 1 Archaeological Priority Area (APA) called 'North Southwark and Roman Roads' as defined by the London Borough of Southwark (see Figure 2f). This APA is the largest in Southwark and covers a broad area including; the historic core of Southwark, the entire river frontage, and the Roman radial roads leading out from Londinium (GLHER Ref: 77185).

2.28 The archaeology of Southwark is complex and the northern part of the borough contains half of the Roman town of Londinium, therefore, in a similar fashion to the City of London, the northern and riverine zone of Southwark is defined as one large landscape-scale Tier 1 APA.

2.29 Following revision in 2019, the Southwark APA appraisal system has categorised the various areas of archaeological potential across the borough into Tiers according to their potential for the survival of significant archaeological remains, with Tier 1 being most significant.

2.30 A Tier 1 Archaeological Priority Area relates to heritage assets of national significance, for example in London, this is applied to the three historic urban cores of the City of Southwark, the City of London and the City of Westminster, as well as across the wider landscape scheduled monuments or sites of equivalent significance.

2.31 Southwark has five smaller Tier 2 APAs, which reflect four of the urban villages not covered under the large Tier 1 APA and also the Lordship Lane barrow cemetery. The Tier 2 Peckham Village APA lies within the LDO Study Area (Figure 2f).

2.32 A Tier 3 Archaeological Priority Area is a landscape-scale zone within which the GLHER holds evidence indicating the potential for heritage assets of archaeological interest. The definition of Tier 3 APAs involves using the GLHER to predict the likelihood that currently unidentified heritage assets, particularly sites of historic and archaeological interest, will be discovered in the future. Tier 3 APAs are typically defined by geological, topographical or land use considerations in relation to known patterns of heritage asset distribution. The designation Tier 3 has not been applied to the Southwark APAs.

2.33 Tier 4 (outside APA) is any location that does not, on present evidence, merit inclusion within an Archaeological Priority Area. However, Tier 4 areas are not necessarily devoid of archaeological interest and may retain some potential unless they can be shown to have been heavily disturbed in modern times. Such potential is most likely to be identified on greenfield sites, in relation to large-scale development or in association with Listed Buildings or other designated heritage assets.

2.34 Southwark Council has categorised the 'North Southwark and Roman Roads' APA as Tier 1 and it fulfils the criteria in that it also contains nine scheduled monuments and numerous sites that may be deemed to be equal or equivalent to a scheduled monument in NPPF terminology. It is the largest APA in Southwark, and includes the Borough, Bankside and London Bridge area, Tower Bridge, Bermondsey, the Rotherhithe Peninsula and ends at the borough boundary with the London Borough of Lewisham. To the south it extends to Bermondsey, the Old Kent Road, Kennington Park and the Elephant and Castle. It includes the entire course of Southwark's major Roman roads of Watling Street (Old Kent Road, A2) and Stane Street (Borough High Street, Swan Street, A3) and two additional potential minor Roman roads. It also encompasses the previous APA area of Bermondsey Lake, which was designed to protect the palaeoecological environment and prehistoric archaeology recovered from the shoreline and relict fills of the large late glacial Bermondsey Lake and the associated riverine geology and topology.

2.35 The purpose of APAs is to provide a consistent framework for documenting archaeological interest for planning purposes. The appraisal system provides a sound evidence base and practical tool for strategic planning. The introduction in 2013 by Historic England GLAAS of the 'tiered' system distinguishes those areas which are most significant from others, which although still of interest, are not quite so sensitive.

2.36 Southwark's historic environment (the built and buried heritage) is recognised as an important and essential community asset. For its built heritage, Southwark Council seek the conservation and enhancement of these assets as required by the Planning (Listed Buildings and Conservation Areas) Act 1990. Southwark has around 2,200 listed buildings which define local character, provide a sense of place and enrich the townscape. Many of these listed buildings are located within the LDO Study Area, but they and their settings will not be materially affected by the Veolia Southwark 2.0 DHN works or other DHN's (Figure 2b, see distribution of designated heritage assets across the LDO Study Area). It has not been possible to discuss built heritage assets in depth in this archaeological report (Figures 2b, 2h and 2i).

2.37 A scheduled monument is a legally protected archaeological site that is considered to be of national importance. Not all scheduled sites are ancient, but scheduling is restricted to the most important examples of each type of monument requiring protection. Scheduling will add the site to the 'Schedule' (the list of legally protected monuments) maintained by the Secretary of State for Culture, Media and Sport, under powers contained in the Ancient Monuments and Archaeological Areas Act 1979 (as amended). Southwark has nine Scheduled Ancient Monuments, none of these are located within the LDO Study Area (Figure 2a).

2.38 The Southwark APAs also include post medieval cemeteries or sites of human burials from other periods. Many of these cemeteries were founded in the 19th century although some are earlier in date. Several of the cemeteries are consecrated ground and therefore come under the Church of England's faculty jurisdiction but the borough also includes other burial grounds outside of this jurisdiction. Most cemeteries are open to the public, some are open spaces and parks and some still function as burial grounds and accept new burials or cremations. Locating disused burial grounds is a complicated process and it is probable that there are numerous sites across London containing burial grounds that are yet to be identified. The well-known cemeteries are identified on the historic map records, and their significance is evaluated on a site by site basis. The broader definition of post medieval cemeteries as archaeological heritage assets is discussed in current guidance. The routes of the LDO Study Area does not – based on available research data – appear to cross any areas of known burial grounds. Dr Constable, the Borough Archaeologist, has conducted a high-level assessment of the records on burial sites across the Proposed Primary Network Route and the only site in the Peckham area is at the junction of Goldsmith Road and Staffordshire Street, but far away from the route of the works, additionally this cemetery is within the property boundaries, and its extent is clearly shown on historic maps.

2.39 On the available data, the assessment suggests that the LDO routes discussed in this report will not impact on any known post-medieval cemeteries. There is some potential for Roman burials to be located alongside the early road network in southern Southwark and a mausoleum is recorded from the northern side of Watling Street at Great Dover Street, and a further mausoleum containing a 3rd century sarcophagus was discovered on Swan Street in 2018. Both these sites lie outside of the LDO Study Area.

2.40 There are no recorded records of Roman burials along Watling Street in the area of the LDO or along the line of the secondary 'London to Lewes Road' which runs approximately north to southeast of the River Peck in the area of Asylum Road (Figure 2d).

The Brief: Overview of the Project

2.41 The point of this assessment is not to repeat the detailed information that is provided in the Brief for the works (see full text in Appendix 2), however, some repetition of the core observations of the Brief are required; as the framework of this assessment. A concise summary of the significant key points of the Brief are summarised below:

- *It must be noted that the majority of the pipework will be within roads, paths and open spaces. A number of the open spaces will be part of modern estates constructed on the site of earlier housing.*
- *In very broad and general terms, much of North Peckham, south of the Old Kent Road, represents a 'new town' of the 1830s onwards with a long period of development during that century over what was formerly agricultural fields. Growing levels and changes of industry, severe bombing and, in the post-war period, the construction of new estates, open spaces and larger scale industry characterises much of this area. In more recent years further change is happening with the redevelopment of many former industrial sites as mixed use developments.*
- *The major connection into Southwark from SELCHP in Lewisham is along Surrey Canal Road. This road runs along the line of the former Grand Surrey Canal. Works within the road may reveal remains of the canal structure.*
- *Ilderton Road, north of the Old Kent Road generally develops with the construction of the Grand Surrey Canal, as a mixed area of small-scale, largely secondary industry and housing. Over time the scale of industry increases and changes, displacing the housing and associated services, such as chapels, washhouses and laundries. Following bomb damage*

in the post war period large areas of housing were redeveloped as estates, which, in part are now beginning to undergo redevelopment and larger-scale industrial sites are now changing use to mixed use developments.

- *North of the Old Kent Road there are significant archaeological finds of the Bronze Age in and around Bramcote Grove, where a trackway has been excavated indicating investment in the exploitation of the watery prehistoric landscape of this area and likely settlement on higher, dryer ground. In other locations to the north of the Old Kent Road, in the former APZ known as the Bermondsey Lake there finds of similar trackways of platforms have been identified.*
- *The Old Kent Road, and its immediate vicinity, especially the likely course of Roman Watling Street, most probably to the south of the modern alignment, has the potential for significant roman archaeology in the form of the fabric of the road itself, roadside settlement, possibly burials and evidence for land management and exploitation. We also do not understand the likely shift of the Old Kent Road from the Watling Street, or Roman, alignment to the modern alignment, and when that happened.*
- *Much of the area south of the modern Old Kent Road alignment is likely to be within field systems in use during the medieval and post medieval periods. Map evidence suggests a relatively complex sequence of development of agriculture in this area due to the watery landscape in and around the course of the River Peck with a mix of common fields and assarts. We do not have clear information about the formation and development of the field systems north of Peckham.*
- *In the area of Asylum Road there is evidence for Roman settlement, the course of the River Peck and the projected line of the London to Lewes Roman Road. At some point this must meet Watling Street, the relationship between this junction and the line of the River Peck may mean there is the potential for the site of a Roman bridge or river crossing to be found.*
- *At present our understanding of the construction impacts from this proposal are limited. Engagement with the design team will be necessary to understand potential impacts upon geoarchaeological remains and the potential for preservation of such remains under construction works* (*cf.* Appendix 2*).*

3 GEOLOGY AND TOPOGRAPHY

Solid Geology

3.1 The landscape of Southwark contains an extensive range of sedimentary environments in relation to a time-depth of unbroken occupation from the Mesolithic to the present day. This time-depth inevitably means that ecological patterns have shifted and developed, either in relation to natural formation processes or as an echo of change effects from the interrelationship of past people with their landscape.

3.2 The whole LDO Study Area is of geoarchaeological interest and archaeological work in Southwark has added to our knowledge of the Holocene evolution of the London area and the changing levels and formation processes of the Thames and the other – often lost – rivers of London.

3.3 Southwark lies in the centre of the London Basin, the chalk (laid down under marine conditions) extends beneath the entire basin and is overlain by Palaeocene and Eocene deposits most often in Southwark in the form of London Clay. The Palaeocene deposits consist of the Thanet Sands and the Lambeth Group (Upnor, Reading and Woolwich formations) laid down approximately 60 million years ago. Thanet Sands are restricted to the margins of the chalk in south London, with more extensive exposures to the east of a line between Greenwich and Sutton. Exposures of Eocene deposits, particularly the London Clay (also a marine unit laid down c. 55 million years ago), are extensive.

Superficial Geology

3.4 The solid geology of the LDO Study Area is overlain by superficial geology comprising a series of complex, sequential gravel terraces deposited during periods of glacial and inter-glacial conditions, with some periglacial deposits (Bridgland, 1996).

3.5 The ancient gravel terraces of the Thames sequence provide a complete geomorphological record and this means that London has one of the best-understood river sequences in Europe. The London sequence and the terrace staircases have been the subject of scholarly research for many years and this has enabled a complex model of environmental and riverine change to be formulated and periodically built upon, providing a reasonably robust understanding of the prehistoric past for the LDO Study Area and the wider landscape south of the Thames, particularly in Southwark (Sidell *et al,* 2000). Superficial drift deposits occur throughout Southwark along the course of the River Thames and its tributaries. These deposits are mostly formed by fluvial or fluvio-glacial action. Significant deposits of Langley Silts (Brickearths) cap the gravel terraces in locations across the Study Area.

3.6 The archaeological significance of the terrace deposits lies in the fact that they formed while early human populations were first present in Britain, and that some of the terrace deposits contain important evidence of Lower Palaeolithic cultural activity, this evidence is, however, lacking in the LDO Study area. The occurrence of in situ palaeoliths in Kempton Park Terrace Gravels is typically rare (BGS 1996: 130; Gibbard, 1994, 90).

3.7 Further detail is provided by the British Geological Survey (BGS Online 2023), which shows the underlying geology at the Study Area as including Thanet Sands formed during the Palaeogene period between 59.2 and 56 million years ago (which have been categorised as part of the Devensian Stage, the last glacial stage of the British Pleistocene epoch (Gibbard 1994: 90,overlain by Kempton Park River Terrace Gravels (Sand & Gravel) formed during the Quaternary period between 116 and 11.8 thousand years ago.

3.8 Good quality sands and gravels are generally encountered along the Old Kent Road, such as seen in the evaluations by MOLA at 685–695 Old Kent Road in 2021, where natural deposits consisted of yellow sandy clays. The top of these deposits was recorded at 1.60m AOD in Trench 1 and at 0.51m AOD in Trench 2 (truncated by quarry pits). The site ground level was generally flat at 4m AOD.

3.9 At 180 Ilderton Road a two trench evaluation, by PCA in 2019, recorded the Kempton Park sands and gravels between 0.68m AOD and 0.61m AOD. The natural was cut by a series of shallow prehistoric features that included various pits, postholes, stakeholes and two linear features. These were sealed by an undated sterile deposit of alluvial clay.

3.10 The local geological sequence and topography of the LDO Study Area will have been heavily influenced by Bermondsey Lake, an area of late glacial inundation and lake deposits focused in the Bramcote Green/Grove, Ilderton Road and Bricklayers Arms area of Bermondsey. Other local Southwark geological variations include the Rockingham Anomaly to the west of the LDO Study Area and the complex geology of the Rotherhithe Peninsula to the northwest of the Study Area.

3.11 The Bermondsey Lake geologies include areas of identified peat or marshland deposits, with areas of major peat marsh such as that encountered at Bramcote Grove at the northern area of the LDO Study Area. Localised areas of brickearth deposits have also been recorded and such a large Study Area will obviously include numerous diverse micro-geologies that will affect zones of the LDO Study Area and archaeological formation processes accordingly.

3.12 At Bramcote Grove, in the northern part of the LDO Study Area, an archaeological evaluation and excavation recorded up to 3m of organic rich, alluvial clay silts which were deposited during the late Glacial period between about 12,000 BP and 9000 BP. A summary based on Thomas, C. *et al* (1996) is shown below:

An archaeological evaluation and excavation were carried out prior to a housing development in 1992, at Bramcote Green, Southwark. Up to 3m of organic rich, alluvial clay silts were deposited during the late Glacial period between about 12,000 BP and 9000 BP. A wide, shallow channel flowing south towards the Thames cut through the clay silts during the early Holocene and was filled with a series of clay and peat layers. Between 6000 BP and 4000 BP fast moving water channels formed on the marshy ground on the east side of the site and broader channels on the sand and gravel outcrop on the west side of the site. A subsequent rise in water levels, possibly seasonal, deposited inorganic muds across most of the site until c. 3500 BP. Over the filled-in channel were laid two phases of a wooden trackway which may have been laid across the marsh between high ground to the south and Bermondsey Island to the north. The earlier trackway consisted of two parallel lines of alder logs held in place by alder stakes. The second consisted of a single line of oak logs with alder stakes along one side. Radiocarbon dating of the second trackway places it in the middle of the 2nd millennium BC. The site was covered by a thick layer of peat dated to the Late Bronze Age[1].

3.13 Further information on the type of deposits associated with Bermondsey Lake comes from the excavation work on Rolls Road, to the north-western edge of the Study Area of the site at the former Bricklayers Arms Goods Depot. A summary based on Sidell, E.J. *et al* 2002, is shown below:

[1] Thomas, C. *et al* 1996 'Bramcote Green, Bermondsey: a Bronze Age Trackway and Palaeo-Environmental Sequence' *Proceedings of the Prehistoric Society* Volume **62**, Pages 221-253 (Published online by Cambridge University Press: 18 February 2014)

At the Bricklayers Arms site, excavated in October 1987, 11 evaluation trenches were opened along the edge of the Bermondsey eyot and out in the adjacent lake basin. Two Neolithic flint axes were recovered from the lake silts, the first comprising the blade of a ground artefact and the second a somewhat rough chipped axe of cherty material. A collection of horizontal interlaced timbers interpreted as a laid platform and considered to be broadly contemporary with the axes, was revealed at the edge of the eyot and the lake, stratigraphically between the freshwater lake silts and a subsequent peaty horizon thought to be evidence of gradual lake-infilling. The platform, therefore, seems to have been used while the lake was sill extant, it was of interlaced timbers, consisting of a mixture of alder, willow and birch with some cut marks still identifiable. A second platform was found in another of the trenches overlying a ditch that might reflect early land division or drainage. Several hearths were located adjacent to the platform, associated with much fire-cracked flint. Two horse bones were found in this area, close to the hearths, and may be an indication that horseflesh was eaten, but no butchery marks were recorded and so this cannot be stated conclusively. Also, the bones were articulated but truncated by a later feature, so there may once have been an entire skeleton deposited here. Details of the platform construction were lost; it was thought that it might have been held together by withies. A series of utilised flakes (including a possible serrate and blade) were found emmeshed with the structure, which is likely to have represented a lakeside jetty or platform between the dry ground on the eyot and the boggy area adjacent to the lake. It is possible that the tools indicate that this was very much a working environment, collecting resources from the lake, such as reeds and possibly fish; however, the deposition of the two aces may indicate a ritual connotation in addition to the practical aspects. No artefacts or structural evidence were found within the peats and it seems likely that when the lake began to fill with peat, the lakeside activity ceased as it would have become increasingly difficult to reach the dwindling lake across a boggy marsh[2].

3.14 A varied sequence of variable depths of made ground overlying the natural solid and superficial geology can be anticipated across the Study Area. As the works are located primarily in the roads this will include significant deposits of made ground and road make up deposits.

Topography

3.15 Subterranean topographic models (digital terrain or deposit models) are widely used to predict the location and model the nature of potential sites or groups of sites within a research area. These can be enormously informative about spatial distribution of sites and monuments, the selection of areas for habitation, and anthropogenic modification of that landscape. These kinds of predictive models can be used to identify archaeological sites on the basis of associated geological deposits, and especially in Southwark they can be used for locating important prehistoric (and later) waterlogged settlement sites preserved in alluvial contexts. The data received from the trenching for the Southwark 2.0 DHN and future DHN's is however unlikely to be far-reaching enough to make a significant contribution to modelling techniques, but this should be further explored as the work progresses.

3.16 The archaeological results from the LDO Study Area could possibly make a positive contribution to 'Sensitivity Mapping' which is a currently mainly rural archaeological initiative but has the potential to be a valuable tool for looking at large areas of the landscape and applying hierarchies of 'significance' or sensitivity. The technique has not been tested on an urban, deeply stratified, multi-phase landscape – so the DHN could make a positive contribution to this nationwide initiative. The opportunity to apply the technique to an urban context involves creating a 'Sensitivity Model' of the

[2] Sidell, E.J. *et al* 2000, The Holocene evolution of the London Thames, MoLAS Monograph 5, 20-21

landscape area using four mapping criteria. It is a useful tool for mapping different impact scenarios and applying a numeric scoring system based around the four mapping criteria, below:

1. Prescence
2. Condition
3. Significance
4. Vulnerability and Opportunity

3.17 Sensitivity Modelling is more technical than this brief note implies, applying the four criteria enables the archaeological potential of an area to be scored against a probability scale of high to low impacts (Level 4 down to Level 0) and classifies how that area would be affected by 'change' or impact, in various forms. It can be used to indicate where archaeological sites may be anticipated in future development areas and contributes to characterisation models generally (Figure 2h. Historic Landscape Characterisation Plot)

3.18 Interestingly the topography of the LDO Study Area (Figure 1) is predominantly level at an average height of between c.2 to 5m above Ordnance Datum (AOD), with local variations where areas are artificial built up or truncated by development events, but the natural topography of the LDO area is predominantly flat.

3.19 The LDO Study Area and the DHN's have the potential to contain evidence that could contribute to our understanding of the palaeoenvironments and formation processes of the wider landscape and particularly to the late glacial Bermondsey Lake and its associated riverine and lakeside geology and topology.

3.20 Watercourses near the LDO Study Area comprise the River Thames, c. 0.5km to the north at its closest point, and the River Peck meanders across the Study Area but now in a mainly canalised form . It runs approximately north-south in the area to the west of Peckham Park Street.

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND WITH ASSESSMENT OF SIGNIFICANCE

Timescales used in this report

Prehistoric

Palaeolithic	900,000	-	12,000 BC
Mesolithic	12,000	-	4,000 BC
Neolithic	4,000	-	1,800 BC
Bronze Age	1,800	-	600 BC
Iron Age	600	-	AD 43

Historic

Roman	AD 43	-	410
Saxon/Early Medieval	AD 410	-	1066
Medieval	AD 1066	-	1485
Post Medieval	AD 1486	-	1799
Modern	AD 1800	-	Present

Introduction

4.1 This chapter reviews the available archaeological evidence and the archaeological/historical context of the wider landscape setting of the LDO Study Area, and, in accordance with the NPPF, considers the potential for any as yet to be discovered archaeological evidence to be present within the Study Area.

4.2 Thought and consideration has been applied to include known archaeology just outside the Study Area that may be indicative of potential similar findings from within the area, such as the Neolithic archaeology from the Bricklayers Arms excavations in the 1980s and elements of works associated with mapping sites that could contain Bronze Age timber trackways similar to those discovered at Bramcote Grove, discussed in Sections 3.12 to 3.13.

4.3 The Brief, and general industry standards and guidance, require that a search of the local Historic Environment Record (HER) is obtained, and this has been done based upon the boundary of the LDO area. The HER for Southwark is maintained by Southwark Council in accordance with the responsibilities of local planning authorities under the NPPF but is managed by Historic England's Greater London Archaeological Advisory Service's HER team (GLHER), led by Stuart Cakebread.

4.4 As the LDO Study Area encloses an area of c. 505 hectares a logical approach is required and there are obviously many hundreds of individual records for an area of this size. A narrative on each entry on the GLHER would be unmanageable and, as noted in the Brief, an unacceptable form of analysis of the archaeological potential of the area.

4.5 The relevance of the numerous GLHER entries can also be sorted by the results of the walkover survey of the Southwark 2.0 DHN primary routes proposed for the major engineering works and to install the connections to the estates and their boiler houses (Figures 15 and 16). The walkover has

also enabled height variations to be noted and elements of street furniture of potential interest to be recorded. The walkover took place on 25th January 2023 and is illustrated in the individually annotated Plates 1 to 78 at the end of this report. The commentary on the Plates should be read for comment on ground conditions and elements of surviving street furniture; interestingly only one area of interest for surviving street furniture was recorded in the form of a small patch of historic cobbles at the entrance to the Bells Gardens Estate (Plate 54).

4.6 The Brief also requires that the assessment identifies areas or themes that may be of potential public interest, such as the fabric of Roman roads or potential prehistoric evidence in the form of causeways, for example. These potential locations are discussed in Section 5 and will be of interest to inform the production of the WSI to plan for appropriate archaeological fieldwork and recording and public engagement for the dissemination of knowledge. Opportunities to tell the archaeological stories of this part of London and celebrate the cultural heritage of the area should be sought out and shared across various audiences and platforms. A 'Principles of Archaeological Investigation and Notification' strategy is also provided as Appendix 4, which sets out what will need to be in place for any future construction-integrated archaeological works, including targeted excavation, watching brief or other strategies (Appendix 4).

4.7 What follows comprises a review of known archaeological assets within the LDO Study Area (Figures 1, 2a to i) and includes a bespoke search of the dataset held on the Greater London Historic Environment Record (GLHER), which has been designed thematically by period by RPS (primarily by Nida Bhunnoo and Alex Slater), in collaboration with Southwark Council (Chris Constable and Ali Weatherup) and Historic England (Stuart Cakebread and Matthew Jones).

4.8 RPS are very grateful to all the specialists that collaborated with us to provide this clear and comprehensive dataset for such a large area. The work is shown as nine figures, denoted Figures 2a to 2i, the author is extremely grateful to Nida Bhunnoo of RPS for their careful work to collate all the data and present this as the nine informative figures, arranged either by area classifications, or thematically by cultural period.

4.9 The GLHER Historic Landscape Characterisation Mapping is presented as Figure 2h. In summary, this shows that much of the Study Area is designated as **1945 to 2006 Housing** especially in the Peckham and Bermondsey areas and east of Ilderton Road. Other areas are **Victorian Terraces** generally in the Camberwell, Peckham Park Road and Commercial Way area with a small patch south of Southwark Park Road. Areas designated as **Industry** are also shown, reflecting the industries on the western side of the LDO area flanking the Old Kent Road and including railway in the area from Bermondsey to South Bermondsey. **Inter-war suburbs** are shown but only in a small area south of Southwark Park Road and in Camberwell. At the junction of Asylum Road and Old Kent Road the landscape is shown as **Institutional 1038** which reflects the location of the historic set-piece architecture of the Asylum almshouses complex at the northern end of Asylum Road. Other local designations are given such as **Commercial 1043** along Rye Lane. Therefore, the general character of the LDO Study Area can be clearly seen in Figure 2H.

4.10 Chapter 5 subsequently considers the site conditions and whether the proposed development will impact the theoretical archaeological potential identified below. The 'Principles of Archaeological Investigation and Notification' strategy sets out a strategy for any future construction-integrated archaeological works, including targeted excavation, watching brief or other strategies (Appendix 4).

Previous Archaeological Work

4.11 Previous archaeological work undertaken within the LDO Study Area is shown on Figure 2i, which shows a mass of hundreds of archaeological 'Events', which translates to archaeological fieldwork and recording. Presenting the archaeological data in this manner is not helpful and it is impossible to see the spatial distribution of key sites in an informative manner. This is also the case for the

plotting of known individual 'Sites' and 'Monuments.' Again, hundreds of records are shown that relate to a mass of entries on the GLHE (see HER Records Plot, Figure 2b).

4.12 In order to overcome this, the GLHER entries have been sorted into thematic maps showing the spatial distribution of sites and findspots by cultural period. Figure 2c shows all entries for the prehistoric periods, Figure 2d shows the distribution of Roman entries, Figure 2e shows Saxon and medieval entries, with other maps follow thematically such as Figure 2f which shows Archaeological Priority Areas in Southwark and neighbouring Lewisham, as well as London Squares. Figure 2g shows the line of the Civil War defences according to recent research (Mills Whipp Projects, draft 2022, publication forthcoming 2023). Figure 2h shows the Historic Landscape Characterisation discussed above, which reflects post-medieval and modern landuse. A series of historic maps follow as Figures 3 to 14, which form the basis for a discussion of the post-medieval archaeological significance of the LDO Study Area.

4.13 A gazetteer of the early GLHER monument, event and findspot records is given at Appendix 3, it has not been possible to include a gazetteer for all GLHER data, as this would spread to many pages. The early data is attached in order that the numerical point records shown on Figures 2a to 2e and 2h to 2i, can be cross-referenced with the site names shown in the gazetteer (Appendix C).

4.14 The map regression exercise (Figures 3 to 14) has demonstrated that the LDO Study Area included large areas of open pasture either side of the Old Kent Road and then later markets gardens before it was developed with terraced housing and industrial works, factories and warehouses in the late 19th century.

4.15 The LDO Study Area was subject to severe bomb damage during the Second World War, followed by demolition and redevelopment in the immediate post-war period, with further full site clearance and redevelopment in the late 20th or early 21st century.

4.16 A discussion of the LDO Study Area follows by period.

Prehistoric (Figure 2c)

Palaeolithic

4.17 Greater London possesses a number of sites where in situ Palaeolithic and Mesolithic sites, possibly with refitting flint artefacts in association with faunal remains, might be found. Because of their rarity, such localities are of the highest importance in national and even international terms.

4.18 Southwark does have an immensely rich, varied and important archaeological heritage dating from Mesolithic times *circa* 10,000 years ago to the settlement and industrial remains of the 20th century, but currently there is a paucity of evidence for Palaeolithic activity in Southwark[3]. This may change especially in light of recent developments over the last ten years in techniques for recognising Palaeolithic archaeology, and newly published Palaeolithic research and guidance[4].

4.19 Sites with a cultural sequence of Palaeolithic and Mesolithic periods very rarely have recognisable structures, instead, occupation or seasonal activity is usually marked by scatters of lithic industries, and, in favourable preservation environments, materials such as bone and wood and other

[3] Some of the information contained in these cultural period sections is extracted and updated from the planning document 'SP204 Archaeological Priority Areas Report' (2017), written by the author, Gillian King, when serving as the Borough Archaeologist from 2017 until 2020. It is repeated and updated here under intellectual copyright consent and because this document is jointly funded by the London Borough of Southwark and Veolia.

[4] Historic England 2023 *Curating the Palaeolithic* HEAG0313 Publication date: January 2023

environmental evidence. The London region is internationally significant for its prolific Lower Palaeolithic remains which are usually found within geological strata associated with the Thames river terrace sequences, but not in the Kempton Park Gravels (BGS 1996: 130; Gibbard 1994:90). A key nationwide survey is The English Rivers Palaeolithic Project (TERPS) and the related publication *The Lower Palaeolithic Occupation of Britain* (Wymer, 1999).

4.20 One of the earliest discoveries from Southwark is an isolated Middle Palaeolithic handaxe (biface) discovered from a brickfield in the 1860s at Peckham Park Road (Figure 2c 109913 [17281[5]]), and another from the South Eastern Gas Works site during construction of the former Gas Works north of the Old Kent Road in the 19th century (Figure 2c 149290 [17281].

4.21 The antiquarian finds from the Gas Works also reportedly included the bones of mammals that would have been present during the Lower Palaeolithic period (mammoths, rhinoceros and aurochs) and the Peckham Park Road also yielded various mammalian fossils dated to c.130,000 – 115,000 BC. The remains were found in a small pocket of terrace gravels underlying the brickearth (Figure 2c 109913 MLO102950, TQ 3425 7732).

4.22 However, apart from these two entries there are no significant records for the Palaeolithic period in the LDO Study Area or from the wider landscape across the borough. Overall, it is unlikely that any in situ or residual artefacts of Palaeolithic origin would be found within the LDO Study Area, given the paucity of previous finds within the area and the shallow depth of the proposed DHN work. The archaeological potential can be considered to be low.

Mesolithic and Neolithic

4.23 In early prehistoric times, the London Basin looked very different from today - the river was wider and shallower and the Southwark side consisted of estuarine, low-lying marshes and braided river channels, interspersed with a number of large sand and gravel eyots (islands). Archaeological work across Southwark has revealed an enigmatic spread of prehistoric sites, with early settlement and land management generally on the higher and drier areas, and well preserved waterlogged structures and deposits surviving in the channels and lower lying inter-tidal areas. There is significant evidence in the Study Area for Mesolithic activity and lesser evidence for Neolithic sites of national importance, but with recognised typologies of Neolithic ceramics identified.

4.24 From within the LDO Study Area, one of the earliest and most important prehistoric sites is the Mesolithic occupation site at the B&Q site, 520 Old Kent Road (Figure 2c 138188 [17262] Mesolithic, [17265] Neolithic). Prehistoric, possibly Neolithic, ditches and flintwork were also identified at 556-576 and 578-596 Old Kent Road in the same area (Figure 2c 99350 [17277] Prehistoric, [17265] Neolithic). At the B&Q site nearly 1,800 flint artefacts were recovered, including obliquely backed points, microburins, scrapers and hammerstones. The location of this site is especially interesting as it lies close to the former shoreline of Bermondsey Lake, a large lake which once existed to the north of the B&Q site. An undiagnostic prehistoric ditch together with a curvilinear cut feature was also found at 551 Old Kent Road (Figure 2c 147410 [17277]).

4.25 There is further evidence of Mesolithic activity across the landscape, such as a Mesolithic linear feature recorded just across the Old Kent Road from the B&Q site at 21-35 Marlborough Grove (Figure 2c 119785 [17262]). At Verney Road evidence of Early Mesolithic activity has also been

[5] In late 2022, Historic England GLAAS with the Getty Institute revised the GLHER numbering system and adopted the ARCHES platform and a new system of numbering for the Greater London HER. The numbers in square brackets refer to typologies and sub-categories accorded to different record types.

recorded, although both sites are also important for containing Bronze Age trackways or structures (Figure 2c, 143444 [17317]).

4.26 At Ossory Road, again near the Old Kent Road, a prehistoric water channel revealed evidence of Mesolithic and Neolithic date with further evidence of a prehistoric ditch and enclosure (Figure 2c 143313 95593 [17277], 121588 [17262] Mesolithic, [17356] Late Mesolithic, [17254] Middle Neolithic, [17265] Neolithic).

4.27 Mesolithic finds have been recovered from evaluation at Sharratt Street on the eastern side of the LDO area in 1994 (Figure 2c 137788 [17262] Mesolithic, [17265] Neolithic). Although no evidence of any occupation earlier than late 19th century ground consolidation was found, and there was no evidence found to indicate that the prehistoric Bermondsey Lake peat marsh deposits extended into the site. The only archaeological evidence comprised four flint flakes, which were not closely dateable but were suggested as Mesolithic to Neolithic. These were thought to have been deposited through natural processes rather than indicators of human activity, which may suggest that the limit of Bermondsey Lake is in the Sharratt Street/Ilderton Road area, making archaeological watching brief advisable over the Southwark 2.0 Proposed Primary Network route in this location (Figure 16, Plates 1 to 26).

4.28 Evaluation at 180 Ilderton Road revealed undated prehistoric landscape features (Figure 2b 128597, [163673]). The natural sands and gravel deposits were recorded, along with a large post-glacial palaeo-feature filled with sterile deposits. A number of shallow cut features truncated the natural in both trenches, of which the fills contained occasional charcoal and daub flecks. The features were characterised as various pits, postholes, stakeholes and two linear features, and were sealed by a sterile deposit of alluvial clay, and then modern disturbance.

4.29 The monitoring of gas pipe excavation works also took place along Ilderton Road at the east of the LDO Study Area in the Ilderton Road/Manor Grove area in 2004. The works found no evidence of the Bramcote Green Bronze Age trackway which was thought to be in the area. Some evidence of peaty clay was found, but no associated archaeological features. The only archaeology observed were post medieval made ground deposits. A series of natural river terrace sands and gravels were intercut by at least one post glacial stream and further possible stream courses were overlain by waterlain clays. It was suggested that this indicated that the area had been under water for a long period of time, potentially associated with the Bermondsey Lake (see orange event line on Figure 2i, 154916, 128597). So, it may be able to model the limits of these wet and dry deposits and help define the lake edges in the eastern part of the LDO Study Area.

4.30 At the northeastern edge of the LDO Study Area at the Silwood Estate a Mesolithic buried land surface was recorded (Figure 2c 113710 [17262] Mesolithic, [17269] Bronze Age) and a further Bronze Age buried land surface from Silwood Street (151155 [17269] Bronze Age).

4.31 At the later prehistoric site of the former Bricklayers Arms Depot Neolithic axes were recovered, this site is discussed further in Section 3.12 and below (Figure 2c. 108905) .

4.32 The Old Kent Road area is known for evidence of Mesolithic flintwork and Neolithic, Bronze Age and Iron Age occupation particularly from the B&Q site at 520 Old Kent Road, and further sites along the Old Kent Road have revealed evidence of Mesolithic to Bronze Age activity (Figure 2c 146641 [17269]). The potential for evidence of prehistoric activity is estimated as moderate to high in the DHN's pipe trenches which are estimated to be dug to an average depth of 2m below current ground level.

Bronze Age and Iron Age

4.33 Within the LDO Study Area the areas of prehistory evidence that have been revealed often have a multi-phase nature, with a concentration of prehistoric activity beginning in the earlier periods and continuing into the later prehistoric periods. The assessment gives an overview of the dataset and

does not detail every site with multi-phase archaeological interest (the entries are shown on Figure 2c, with some duplication where the GLHER adds extra reference points against that provenance on the GLHER).

4.34 These later prehistoric entries primarily continue from the flint working scatters and settlement evidence to more established settlement evidence in later prehistory, this is certainly the case at the Old Kent Road sites and from the Bermondsey Lake area, especially in the Bramcote Grove and Ilderton Road area. These sites have contained evidence of preserved, waterlogged prehistoric material, such as the Bronze Age trackway from Bramcote Green/Verney Road (Figure 2c, 143444 [17317] Early Mesolithic, [17366] Late Bronze Age, [17269] Bronze Age).

4.35 At Bramcote Green/Verney Road on the northern edge of the LDO Study Area investigations in 1995 revealed a series of peat and alluvial deposits, with two phases of Bronze Age trackway. Natural clays and sands were laid down during marine transgression, and peat formed during marine regressions. Possibly two phases of a simple log pathway were found in one of the trenches. The first phase consisted of parallel planks or logs pegged down with cross-bracing pieces whilst the second contained a line of oak logs pegged down by stakes and laid on bark. The stakes had been sharpened with bronze axes, and marks made by a palstave were seen in one end of a log from the trackway. Above the peat was floodplain clay, sealed by 17th-19th century levelling material. Integrated environmental studies of the sediments, pollen, waterlogged plant remains, wood, insects and molluscs from the site provided detailed evidence of the development of the area and evidence for human activities (Figure 2c 143444).

4.36 Of especial interest to the LDO Study Area are a range of other important prehistoric sites, including deeply buried late Neolithic and Bronze Age wooden platforms and trackways which have been discovered in well-preserved anaerobic conditions; for example, at the former Bricklayers Arms Railway Depot, Rolls Road (Figure 2c 108905 [17265,17277], 141643 [17269] Bronze Age structure, 142703 [17269] buried land surface, [17366]) and at Bramcote Grove, Bermondsey (see Section 3.12).

4.37 At the Former Mawbey School, a Bronze Age buried land surface was discovered (Figure 2c 98192 [17269]).

4.38 Similar deposits have been recorded from Varcoe Road (148897 [17328] Middle Bronze Age, [17366] Late Bronze Age). Geoarchaeological excavation at Varcoe Road in 2009 revealed peat deposits of Neolithic to Bronze Age date, together with two phases of timber trackway dated to the Bronze Age (HER Refs: 158008, 148897; 143444; 112536). A sample from the top of the peat gave a radiocarbon date of c 3200-2900 Cal BP. A flint scraper was found within the peat which could be dated to the Neolithic or Bronze Age.

4.39 At the Southwark Integrated Waste Management Facility, a prehistoric buried land surface was recorded - again near the Old Kent Road (Figure 2c 112536, [17277]). A further watching brief at the site of the Southwark Integrated Waste Management Facility consisted of six test pits and monitoring during the removal of building foundations. A possible deposit of peat was observed beneath one of the buildings although this may also have been a remnant of a more recent topsoil. No other archaeological features were uncovered. Natural deposits of sand and alluvial clay were observed between 1.90m and 3.70m below ground level (Figure 2c 112536 [17277]).

4.40 Prehistoric archaeological finds have been recorded at the north of the LDO Study Area at Storks Road (Figure 2c 115126 [17277]), and at Sumner Road (Figure 2c 115126, 144480 [17277] Prehistoric).

4.41 In the Peckham area, multi-phase but relatively small-scale discoveries including a range of prehistoric finds and features have been made from the Aylesham Centre (Figure 2c 106663, [17277] Prehistoric, [17265] Neolithic, [17366] Late Bronze Age, [17260] Roman, [17390] Early Medieval, [17296] Medieval. There have also been small-scale prehistoric finds recovered from

Peckham High Street (108856 [17277] Prehistoric, [17369] Uncertain) and from 1-83 Peckham High Street (Figure 2c 148747 [17277]).

4.42 Although Figure 2c appears to show a reasonable density of prehistoric sites clustered in the Peckham area, the results have been limited and this simply reflects the increased number of archaeological interventions in Peckham, rather than any true significant prehistoric settlement from Peckham (Figure 2c, 144480, 148747, 108856, 106663).

4.43 Iron Age settlement evidence has been recorded from Spa Road Sorting Office (Figure 2c 103201, [17385] Late Iron Age Ditch & Pit), Late Iron Age, [17260] Roman [17385].

4.44 Overall, it is reasonable to suggest that the LDO Study Area was populated throughout the prehistoric periods, but not with any especially evident dense concentration of sites. Settlement favoured the gravel geology in locations on the Old Kent Road and was a feature in the later choice of this route by the Romans for the laying out of Watling Street. It also, most probably, explains the choice of this area for early settlement activity by Mesolithic peoples, being on good dry geology, but also adjacent to the lake shores of Bermondsey Lake to exploit its resources whilst avoiding seasonal inundation.

4.45 The trenching for the LDO Study Area may recover important data on the lake edge or shoreline, and peat or marshland deposits associated with Bermondsey Lake and contribute to mapping its extent and formation, especially as the depth of the trenches may be up to 2m bgl in some locations. It is probable that the area would have been used seasonally for hunting and gathering, and later for agriculture and animal management. Archaeological evidence for these ephemeral uses of the landscape is sparse and would likely comprise the chance discovery of isolated artefacts, therefore, it may not be easy or possible to identify these larger landscape markers within the confines of the narrow DHN trenches.

4.46 Archaeological watching brief works should initially be maintained in the LDO Study Area of Bermondsey Lake, including Ilderton Road, Silwood Street, Spa Road and extending south to the Old Kent Road. If initial monitoring proves to be negative, the watching brief could be scaled back to target a smaller area of sensitivity.

4.47 Archaeological watching brief works should also be maintained along the Old Kent Road LDO areas and across Brimmington Park, to target prehistoric activity and also the course of the Roman Road and any earlier routeways that may have been present in this area.

4.48 In the Southwark 2.0 Proposed Primary Network (Phase 1 and Phase 2 routes) shown in blue on Figure 16, areas of specific sensitivity for the prehistoric periods are identified. These are the eastern route in the area around Ilderton Road and where the route crosses the Old Kent Road and continues into the Brimmington Park area (Figure 16 and Plates 1 to 34).

Roman (Figure 2d)

4.49 The northern half of the London Borough of Southwark has a wealth of Roman archaeology, but Roman activity is significantly less concentrated in the LDO Study Area, except for localised areas of sensitivity along the major Roman road of Watling Street. Watling Street bisects the LDO Study Area centrally, running northwest to southeast following the approximate line of the modern Old Kent Road (A2).

4.50 The Romans settled on the banks of the Thames just after AD 43. The Roman provincial capital of Londinium spanned both sides of the river and in north Southwark was focused on two large gravel islands (North and South Island), forming the southern bridgehead for the original Roman bridge, which still broadly corresponds to an area just east of London Bridge today. Major roads were built to other Roman cities in the south of England, including Watling Street to Dover and Canterbury

(present day Old Kent Road, A2) and Stane Street to Chichester (Borough High Street, Swan Street, A3).

4.51 Southwark was the largest and most complex area of development outside the main core of the north bank settlement, occupying an estimated area of some 20–24ha in the early 2nd century. There is no evidence, however, that it was administered separately, and it should be treated as an equal area of Londinium, containing monumental civic buildings, albeit with its own characteristics and pattern of development[6].

4.52 It has long been acknowledged that the original route of Watling Street probably followed an ancient pre-Roman routeway mainly between the areas of modern Canterbury and St Albans passing through Southwark (south of the later bridgehead) and utilising a natural ford near Westminster, which is now recently resurfacing as a topic of academic review.

4.53 Remains of large and prestigious stone buildings with mosaic floors, hypocaust heating systems and occasionally, elaborately painted wall frescos have been found on the North Island in the London Bridge area. Recent finds from The Liberty, formerly known as Landmark Court, on Southwark Street have revealed two intact Roman mosaic pavements of international interest as well as further Roman settlement and burial information. Wooden jetties, warehouses and other remains of the Roman port and waterfront activities shows that the Southwark riverside was a centre of trade, with close links to the rest of the Roman Empire. Other Roman sites include: the Roman boat preserved under Guy's Hospital; the bath house on Borough High Street and many other key sites, including markets, wharves and warehouses.

4.54 The extent of the Roman town appears to have extended south to approximately the area now occupied by Borough Tube Station and the Church of St George the Martyr, with some potential to have extended a little further south to the area of Southwark Police Station (Town End) on Borough High Street. It appears that the area south of the Borough Channel, approximately delineated by the current Marshalsea Street was occupied by a complex of Roman ritual, temple and funerary sites around Long Lane, and incorporated the large cemetery known as the Southern Cemetery, just south of the junction of Watling Street and Stane Street. This area is set between the Borough Channel and Watling Street at a strategic location adjacent to the Roman crossing point between Southwark's North and South islands to the settlement on the north bank.

4.55 The Roman Southern cemetery lies to the south of the temple complex and burial information has been recovered from sites such as Lant Street, Harper Road, Swan Street, Mint Street, Great Suffolk Street and Great Dover Street, but also as the Roman town declined from areas further north, such as Stoney Street and at The Liberty on Southwark Street in the London Bridge/Borough Market area. The Roman cemetery has been discovered extending along the Roman roads but it appears that all these urban Roman activities are centred away from the LDO Study Area.

4.56 The 'North Southwark and Roman Roads' Tier 1 APA also includes the Roman 'Southern Cemetery' where very significant Roman funerary deposits have been encountered, including the find in 2019 of a Roman stone sarcophagus dating from the 4th century on Swan Street. This excavation also redrew the course of Stane Street and revealed a large section of the road and roadside activity, including a mausoleum. Excavations in 2002 at Empire Square, formerly Tabard Square, Long Lane (A2198) revealed a multi-phased temple complex containing archaeological remains of national importance (Figure 2f).

[6] Nixon, T. et al 2000 'The archaeology of Greater London An assessment of archaeological evidence for human presence in the area now covered by Greater London' Museum of London.

4.57 Such excavations have transformed perceptions of Londinium's ritual landscape and refined our understanding of north Southwark's prehistoric and Roman topography. This is evidence that the heart of Roman Southwark lies outside of the LDO Study Area, although the possibility of localised areas of activity cannot be excluded along the Roman roads.

4.58 The LDO Study Area has the potential to contain features associated with the former route of 'Watling Street', the major Roman road between London and Canterbury (Figure 2d). Watling Street was one of the most important roads in Roman Britain and linked Dover to London and then from London to St Albans and onwards to Wroxeter (Margary 1955 & GLHER Ref: 121961). In neighbouring Lewisham, the Roman road followed the southern limit of the local Thames gravel terrace and crossed the Ravensbourne via a ford. This may be the 'deep ford' from which the place name Deptford appears to be derived (Figure 2f). A Roman settlement, possibly with Iron Age antecedents, was established close to this ford, on the banks of a creek which provided tidal wharfage. Mid-Saxon burials have also been found here, indicating the presence of a community which pre-dates the better known medieval village ([78009] Watling Street and the 'Deep-Ford' (further information is provided in Figure 2f and Historic England's Archaeological Appraisal for the London Borough of Lewisham, although this is due to be reviewed in 2024).

4.59 Evidence of Watling Street has been identified in several archaeological interventions along the Old Kent Road. Roman ditches and a metalled road surface have been found at 556-576 and 578-596 Old Kent Road (Figure 2d 119581). Several small gullies and pits indicating occupation were seen in the same area during a watching brief at 556-588 Old Kent Road (Figure 2d 105636) and roadside ditches were identified during evaluations at 430-432 Old Kent Road, together with evidence of agricultural activity (Figure 2d 108373).

4.60 Typical archaeological features associated with Roman roads can include evidence for settlement and occupation, roadside ditches and associated land division, together with quarry pits, burials and chance losses. The Roman road system has many entries on the GLHER and shown on Figure 2d, to avoid unnecessary text, these are not all detailed here, but it is evident that there is a cluster of Roman and multi-phase archaeological sites in the Old Kent Road area and any DHN trenching activities in this area should be subject to an archaeological watching brief to safeguard archaeological interest in this sensitive area (Figure 2d, 121961, 108373, 134732, 98355, 99346, 105636, 119581, 117702, 105636, 121624, 149975, 126920, 121961). Further information in summary form on each of the entries on the GLHER for Roman activity along the Old Kent Road and shown on Figure 2d and is provided in the gazetteer (Appendix 3).

4.61 The Old Kent Road remained an important transport connection throughout the medieval period and into the post-medieval period. Secondary Roman roads are also a feature of Southwark's Roman history and are covered by the Tier 1 'North Southwark and Roman Road' APA designation, such as the London to Lewes Roman road.

4.62 The London to Lewes Roman road is most likely to have originally branched off Watling Street to the east of Asylum Road (another secondary road followed a route through the Kennington Road and Elephant and Castle area outside of the LDO Study Area to the west). Evidence for the London to Lewes road is patchy and a series of small-scale investigations have contributed some evidence, and it is evident that there is a Roman presence in the Asylum Road area. The estimated route of the road is shown in green on Figure 2d, running southeast from the area of the junction with the Old Kent Road, Asylum Street and Commercial Way (Figure 2d, 101149 [17260], [17346]).

4.63 An article from the 1930s, entitled '*The Roman Road from West Wickham to London'* by Bernard F Davies attempted to plot the courses of the Roman roads across Southwark. Davies believed that evidence of the London to Lewes road was discovered by him at 115 Asylum Rd Peckham, in his early excavations. He recorded that '*Across Queens Road Peckham and to the east of Asylum Road, at number 115, the road was 27 inches deep and quite intact. The ground above also had undisturbed 12 inches soil and 15 inches yellow clay. On the road surface was a thin layer of humus*

which I took at the time to be decaying vegetation growing on the road after disuse et cetera' He recorded a pebble surface to the road and that *' the road was 18 feet wide made of gravel 8 to 10 inches thick and resting on large pebbles with a layer of white sand below-the camber of the road'.*

4.64 Davies plotted the road running in a straight line towards the north end of Asylum Road, tracing the London to Lewis Road as far as 85 Asylum Road, where he reported that he undiscovered it in the garden. He managed to dig a trench 40 feet long across the main road in this area and '*discovered the Roman road with red tile and burnt clay and other obvious associated features*.'

4.65 Davies continued to trace the Roman road suggesting the road turned at the North End of Pomeroy Road. His work in the 1930s is very interesting and he certainly covered a large study area and he reports finding elements of the road network on the Old Kent Road, Tabard Street, Humphrey Street and Albany Road areas. Unfortunately, Davies takes his proof from subtle differences in the soil makeup and not from dateable Roman finds, and in fact he does not really record finding any Roman artefacts in these investigations across Southwark. It is hard to know the level of accuracy to apply to this work and the results until proven by excavation remain rather speculative (Davies, c. 1935).

4.66 In 1934, Davies was looking in the Camberwell area and also at the point where the Roman road of Watling Street crossed a stream in the area of St Thomas Waterings. Davies projected a line straight to Saint Olave's Church Southwark. this is quite sensible as this is the approximate location of the Roman bridgehead but Davies suggested that Watling Street met Stane Street at this point also. We now know the two major roads do not meet at the bridgehead but they meet quite significantly further south of this point in the location of the meeting points of the modern Borough High Street, Great Dover Street, Long Lane and Swan Street. It does seem that caution is required to Davies' investigations and their findings, but he places the junction of the London to Lewes Road with Watling Street just east of Asylum Road and 800 feet South of the Old Kent Road.

4.67 A metalled surface initially suggested as part of Watling Street was found at 79 Asylum Road (Figure 2d 116430). Evaluation at 4-10 Asylum Road identified possible Roman buildings adjacent to the possible road (Figure 2d 97642, [17260]). At 115 Asylum Road a section of the road was also recorded, but this record requires some caution (Figure 2d 123753, [17260]). A Roman ditch is also recorded on Asylum Road (Figure 2d 122511).

4.68 Additional antiquarian evidence for the presence of Watling Street was identified during construction of the Grand Surrey Canal in the late 19th century in the St James's Road and Verney Road area. It is recorded that workers broke up a 250ft length of a dressed chalk causeway, held in place and supported by oak piles, 15ft wide (Figure 2d 121624). Quarry and gravel pits identified in association with the road were found at the Cockneys, 610 Old Kent Road, (Figure 2d 149975 [17260] and Roman wooden piles are recorded from Mina Street by St Thomas Waterings, just outside the study area.

4.69 In the Ruby Road area, three fragments of residual Roman pottery were identified during archaeological evaluation at Ruby Triangle, although no evidence for Watling Street or associated roadside structures or features were identified (MOLA 2019). Similarly, the excavation of a test pit at 2-12 Ruby Street identified no evidence for the road or associated activity. A single sherd of residual Roman or Medieval pottery was identified (ASE 2018).

4.70 It is interesting that there have been numerous archaeological interventions on the northern side of the Old Kent Road in the LDO Study Area, but many of them have been almost entirely negative for evidence of Roman archaeology, for example recent works by MOLA in August 2021 at 685–695 Old Kent Road (MOLA 2021, in-house report) and recent works at the Tustin Estate, to the north adjacent to Manor Grove. The Tustin Estate works by AOC in 2022 revealed no archaeology, but a mass of utilities and services, etc. A trench running parallel with Manor Grove did reveal the change between the Langley Silt (Brickearths) and the Kempton Park Gravels, where the majority of the prehistoric archaeology appears to be located, but no archaeology. The density of services revealed

in these 2022 works may be of interest to the DHN design team as a constraint on designing the routes into the Tustin Estate (Figure 16, Plates 19 to 24).

4.71 Away from the Roman roads, there is also some evidence suggesting Roman activity in Peckham, but as noted above in section 4.41 although Figure 2d appears to show a reasonable density of Roman sites clustered in the Peckham area, this reflects the increased number of archaeological interventions here and the actual data from Peckham does not indicate that there was significant Roman settlement here (Figure 2d,128826, 133312, 136197, 145729, 106663, 131962).

4.72 These entries include antiquarian finds such as a glass urn, suggested as Roman, that was found in the early 18th century in the area of Peckham High Street and other Roman artefacts from this general area (Figure 2d 151308 [17260]; 131962 [17260]; 133312 [17260)]

4.73 There is also a cluster of Roman entries for the northwestern edge of the LDO Study Area in the Bermondsey area and just outside of the LDO Study Area are numerous Roman records revealed mainly in excavations associated with the scheduled monument of Bermondsey Abbey, which lies just west of the LDO area in the area of Bermondsey Street, Tower Bridge Road and Grange Road. There is obviously Roman activity in this general area and it extends along the River Thames and the foreshore, but these entries do represent 'background noise' from the periphery of the established Roman settlement and activity from the general Bermondsey area, rather than intense settlement in the LDO Study Area specifically (Figure 2d 103202 and 129592 {Spa Road}, 149280 and 97994 {Grange Road})

4.74 In a number of sites, such as at the Old Kent Road Fire Station, there is evidence for Roman quarrying of sand and gravels potentially for the construction or repair of the road surface.

4.75 The trenching for the DHN's may recover important data on Roman Southwark and the Roman road network. Archaeological watching brief works should initially be maintained in the LDO Study Area of Bermondsey around Grange Road and Spa Road and extending south to the Old Kent Road. Again, if initial monitoring proves to be negative, the watching brief could be scaled back to target a smaller area of sensitivity. Similarly, if the works have the potential to impact on the projected line of the Roman roads, these areas should subject to controlled watching brief with an archaeologist in attendance for all groundworks, followed by full excavation if required.

4.76 With regard to Roman archaeological interest the most sensitive area of impact from the Southwark 2.0 DHN Proposed Primary Network in the Phase 1 and 2 areas will be the area of Brimmington Park and the junction with the Old Kent Road, the proposed trenching has the potential to cut a complete transect across the projected line of the Roman road at the entrance to Brimmington Park and this could be extremely important for understanding the exact route and alignment of the Roman road in this area (Figure 16 and Plates 23 to 34). Caution is required, however, as secondary research data suggests that Brimmington Park has been subject to post-war ground clearance and potentially dumping, it is possible that no evidence of the Roman road will survive in this location and certainly archaeological evaluation at the site immediately west of Brimmington Park and fronting onto the Old Kent Road and Leo Street in 2021 was negative for any evidence of the alignment of the Roman road.

4.77 This area of Brimmington Park in the Southwark 2.0 Proposed Primary Network (Figure 16, Plates 23 to 34) is perhaps the most archaeologically sensitive area in the proposed primary works and should be subject to an initial Watching Brief with an archaeologist in attendance for all ground reduction works during the first stage of opening up the trench for the pipe works ,but with provision for a proportionate resource for full professional archaeological excavation and recording if any evidence of the Roman road and any associated elements are encountered (Plates 30-31).

4.78 A similar watching brief on initial opening up works, followed by full professional archaeological excavation should also take place in the Asylum Road and Culmore Road areas to look for traces of the London to Lewes Roman road (Plates 38 to 49).

4.79 If, for example, a section through the Roman road is found, this should be subject to full excavation by professional archaeologists, and not visited after the pipe-work trench excavation has been completed. The watching brief strategy needs to have different approaches available for different areas of sensitivity. In locations where transects through the Roman road could be possible these areas are regarded as being of the highest sensitivity.

4.80 For these areas, there will need to be a proportionate response to the significance of the archaeology, and potential for survival. All these areas will need an archaeologist in attendance during the opening up of these areas, and if archaeological deposits are encountered a programme of full archaeological excavation to current industry standards on best practice will be applied. The impacts from this DHN proposal is significantly different, for example, to a water main replacement scheme, where much of the work involved replacement and relining within existing areas of excavation. Across the LDO Study Area the proposed works represent entirely new construction which is likely to manoeuvre in and around existing services through what are likely to be less disturbed areas, and then impact at depth on potentially nationally significant archaeology – such as a Roman Road, will need to be mitigated either by design, or through excavation and recording, with the additional delivery of appropriate public engagement and public benefits.

Saxon/Medieval (Figure 2e)

4.81 The GLHER contains very few entries of Saxon or Early Medieval date from the LDO Study Area and the few entries that are recorded relate to minor findspots of low archaeological significance (Figure 2f 106663 [17296]). The obvious interest of the LDO Study Area for these periods is the early medieval village settlement of Peckham (Figure 2e, 132430).

4.82 Following the departure of the Romans in 410 AD, archaeological evidence for the early-post Roman period is more difficult to detect, but the northern part of Southwark developed rapidly in the medieval period. Documents refer to a minster church at Bermondsey and Southwark, evidently retaining significance to be fortified by Alfred the Great. By the time of the Domesday Book in 1086, Southwark was prospering and growing as a settlement. The Cluniac priory and later abbey of St Saviour Bermondsey, now known as Bermondsey Abbey, was founded in the 1080s. During the years following Domesday, many important lords and senior members of the church built town houses in Southwark, most notably Winchester Palace, built in the 12th century for the Bishops of Winchester.

4.83 Bermondsey was recorded in Domesday as comprising 72 households, and with lands including ploughlands, meadow, and woodland (Open Domesday Online 2022). Other estates in the LDO are recorded in 1086 were located at Hatcham, Peckham and Camberwell.

4.84 The GLHER places the location of Hatcham Coldharbour manor house in the vicinity of Ruby Street/Old Kent Road (Figure 2f : 134782 [177296]). However, the exact location of this manor house has been questioned. The Victoria County History for Surrey states that the manor was situated within the parishes of Camberwell, Deptford and Peckham, and also in Hatcham – it also mentions the manor of ‘Cold Abbey in Peckham’. So there does exist some confusion of manorial jurisdiction and the extent and apportionment of demesne lands retained and managed by each manor, and the division of public roads and common pastureland for the lord and his tenants.

4.85 The LDO Study Area’s archaeological potential for the Saxon and earliest medieval periods can be considered likely to be low, given that little evidence of this period is known from the area, which mainly would have been an open landscape mainly set over to pasture or formed marshland, at this time.

Medieval (Figure 2e)

4.86 London is a polycentric city made up of villages, and the historic villages of Bermondsey, Rotherhithe, Peckham and Camberwell are examples of these charismatic hubs, all of which later became parishes and then civic centres, until finally joined by infill and residential expansion into one contiguous area that forms the London Borough of Southwark.

4.87 The medieval village cores of Camberwell and Peckham are designated as separate Archaeological Priority Areas, whilst Bermondsey and Rotherhithe fall within the larger ' North London and Roman Roads' Tier 1 APA (Figure 2f Peckham APA4). The Tier 2 APA of Peckham Village is entirely contained within the LDO Study Area (Figures 1, 2f.)

4.88 The Tier 2 Camberwell APA lies to the west of the LDO Study Area and is based upon the medieval village core of Camberwell, set around Camberwell Green and the Grade II* listed Church of St Giles (Figure 2f).

4.89 The APA boundaries were selected based upon the extent of the settlement as shown on Rocque's mid-18th century map of London (Figure 5). There is sparse evidence for prehistoric and Roman material from Peckham and Camberwell but the villages have been in existence as manors and parishes since Saxon times. The historic medieval road network is still visible in the current street plans for example to the west centred at the junction of Camberwell Road, Camberwell Church Street, Denmark Hill and Camberwell New Road and around Peckham on Peckham Road, Peckham Hill Street, Peckham Park Road and Rye Lane, among other ancient lanes and routeways.

4.90 Peckham Village Tier 2 APA (Figure 2f, Figure 2e 13740) covers the historic settlement of Peckham. Apart from the lesser potential for prehistoric and Roman archaeology, the overall character of Peckham is its medieval and post-medieval history. Peckham is a rare example of a village that developed in close proximity to central London in the later medieval period but appears to have resisted being entirely swallowed up by the expanding metropolis in the 18th century. This APA covers the historic extent of Peckham as it developed around the manor and along the major thoroughfares. The APA boundaries are selected based upon the extent of the settlement as shown on Rocque's mid-18th century map of London. An important post-medieval feature is the impact of the Grand Surrey Canal located in the Canal Head area of Peckham (Figure 2b green).

4.91 The Peckham APA is aligned on the main east-west axis of the medieval road of Peckham High Street. The APA is bounded to the north by Goldsmith Road and Eagle Wharf and extends east along Carlton Grove and Colmore Mews. To the south it is bounded by Hanover Park and Highshore Road and to the west it extends along Bellenden Road and Peckham High Street.

4.92 Prehistoric and Roman activity in the Peckham area is recorded from a number of sites, as discussed above. Peckham Manor was originally located to the north of the High Street, and on the west side of Peckham Hill Street, in the Eagle Wharf area (Figure 2e 124797). It is likely the site of the former manor house was in use from the medieval period into the 19th century. This APA also covers the area of the former Grand Surrey Canal basin at Canal Head.

4.93 Peckham is mentioned in Domesday as an established settlement, but no church is mentioned. The APA contains potential for the survival of archaeological remains of all dates, but particularly those pertaining to the manor house and estate gardens of the former manor. Early medieval deposits have been discovered at 47-71 Peckham High Street in the form of a pit containing pottery dating to c 1050 to 1150 (Figure 2e 1201720).

4.94 During the 13th century the manor had an attached orchard which later became 'Bell's [*sic*] Market Garden' (Figure 2f and Plates 53 to 60). Another medieval garden market was recorded at 556 - 596 Old Kent Road (Figure 2e 151095). A windmill is listed in an inventory of Peckham Manor in 1307, located again in the Eagle Wharf area (Figure 2e 13133). The Manor House was later used

as a farm, cottages and school, and was demolished in 1883-84. At the end of the 18th century, Peckham was still described as a rural settlement, with a few cottages and houses in amongst fields and market gardens, its rural nature was probably because it was bypassed by the Old Kent Road and not touched by a through route - until Camberwell New Road was laid in 1818. As the village grew, the market gardens and open spaces were built over by houses. The arrival of the railways further stimulated growth in the area, with Peckham Rye station opening in 1866, by the OS 1st edition map of 1871 the area had been almost entirely built over. There is potential for elements of the former Grand Surrey Canal, built in 1826 and backfilled in 1972, to survive. The canal is located in the Canal Head area. There is also potential for archaeological remains of the Eagle Wharf/Mill and earlier 19th-century wharf-side structures (such as Sunderland Wharf and Walton's Wharf).

4.95 The GLHER has a cluster of medieval activity around Peckham Village but generally these are of low significance unless mentioned above, see gazetteer Appendix 3 for further detail (Figure 2e, 131211,(tile kiln), 106251, 124797, 131433, 120172, 128376, 137430, 106663). Other isolated findspots are shown across Figure 2e, but again they are of a low grade (Figure 2e 105530, 147790, 13833, 105806) and will not be materially affected by the DHN trenching schemes.

4.96 Peckham Village has the potential to provide valuable evidence for the growth of the London suburbs and related socioeconomic changes during the medieval and post medieval periods although the degree of preservation is not well known. However, the Southwark 2.0 DHN scheme is unlikely to contribute to this wider research aim. Based on the available evidence it seems unlikely that the DHN's across the LDO Study Area will have a negative cumulative impact on buried archaeological heritage assets of Saxon or medieval date, and no especial safeguards are recommended for the trenching work in relation to these periods.

Post Medieval & Modern (including map regression exercise)

4.97 The importance of the LDO Study Area during the post-medieval period (after 1485) is equally well attested, both archaeologically and historically. During the later Post Medieval and Modern periods, our understanding of settlement, land-use and the utilisation of the landscape is enhanced by cartographic and documentary sources, which can give additional detail to data contained within the GLHER.

4.98 During the Tudor period (1485–1603), Southwark possessed great houses and estates, including the royal palace of Suffolk Place (Brandon House) on the west side of Borough High Street, opposite St George the Martyr Church, as well as Platform Wharf, Edward III's medieval moated manor house and royal residence at Rotherhithe.

4.99 This archaeological importance continued into the 16th and 17th centuries in what is now the Park Street and Bear Gardens area of Bankside. Important Elizabethan and Stuart playhouses were constructed, including bear baiting arenas (operational between *circa* 1540 to 1662), and the Rose (1587), the Globe (1599) and the Hope theatres (1613). Other Tudor playhouses were also situated in Southwark - the Swan (1595) was in Bankside and the Newington Butts Theatre (1576), possibly the earliest playhouse in London, once stood in the area that is now the southern roundabout at the Elephant and Castle.

4.100 Although away from the centre of post medieval activity in Southwark and mainly set to fields and meadows, the LDO Study Area has the potential to contain archaeological deposits of later date, including English Civil War defences dating from 1642-3, and historically mapped by Lithgow, Rocque and Hollar, as well as stylised versions by Vertue, and Smith and Kelsey (Figure 4). Recent research on '*London's English Civil War Defences Project, Locations of the Defences: Study Area 5 Vauxhall To Rotherhithe*' carried out by the Mills Whipp Projects on behalf of Historic England and

Southwark & Lambeth Archaeological Excavation Committee (SLAEC) and published in draft form in December 2022[7], has contributed significantly to our understanding of the Civil War fortifications across South London. The LDO area covers an area of the footprint of the mapped fortifications in the northwest part of the LDO (Figure 2g shown in blue).

4.101 The new research has revealed some documentary evidence from 1642 of Civil War defences and a further Fort at St Thomas Waterings (SF39) on the Old Kent Road but this has not been substantiated by archaeological fieldwork. The placename is derived from pilgrims halting here at the second milestone to refresh their horses enroute to St Thomas' Shrine at Canterbury and is mentioned by Chaucer and was also the approximate location of a gallows (Figure 2e 98260). The Fort here is believed to be part of the first phase of defences built in late 1642. No subsequent references have been located. The position of the Fort, on a main road using a watercourse as a forward defence, is similar to the Kent Street Fort, about 1km further north on the Old Kent Road. It seems likely when the defences were re-organised in early 1643 that this Fort was abandoned and Kent Street Fort replaced it in the linked defences (Mills Whipp Projects, 2022, 128). The main location for St Thomas Waterings Bridge is given as being just outside of the LDO Study Area, in the area of the junction of Old Kent Road and Albany Road (nearby at Mina Road archaeological wooden piles of Roman date have been recovered possibly to consolidate this marshy area by the later bridge). It seems unlikely that the trenching for the DHN's will impact on the areas mapped as potential sites of archaeological interest for Civil War evidence, but it is noteworthy and further evidence may come to light in the Civil War Defences research project.

4.102 The earliest cartographic source reproduced here is the 1729 Senex Map of London (Figure 3). Senex shows the LDO Study Area as mainly comprised of open land flanking the Old Kent Road, which follows a meandering path northwest to southeast bisecting the LDO Study Area. The whole area to the north and northeast of the Old Kent Road is shown as a largely undeveloped blank area, probably reflecting the marshland by Bermondsey Lake. A windmill is shown in the fields in the Southwark Park Road Area. The village of Peckham is well established with the historic street layout evident and Hatcham House and New Cross indicated. Halfway House is shown on the Old Kent Road and much of the area south of the Old Kent Road is annotated 'North Field' appears to be set to orchard (Figure 3).

4.103 Chronologically the next map shown is Vertue's 1738 *Map of the London Civil War Defences*, showing a Civil War Fort in the northwest area of the LDO Study Area. As noted above in Section 4.100, the new research has shown this map to be highly stylised and unreliable, and no fort should be anticipated in this area of the LDO Study Area (Figure 4).

4.104 The next map is John Rocque's '*Map of the ten miles around London'* of 1746 (Figure 5). This map shows the extensive fields laid out more clearly and apparently bounded by hedgerows, a large area is still labelled as "North Field." Rotherhithe Village has extended south into the LDO Study Area and Blue Anchor Road and Blue Anchor Bridge area shown on the line of what is to become Southwark Park Road. Ribbon development has taken place along both sides of the Old Kent Road and recognisable placenames begin to appear, St Thomas Watering Bridge, Peckham Gap, Halfway House and Black Boy Lane (Figure 5).

4.105 The junction of Old Meetinghouse Lane and the Old Kent Road represents the present-day junction of Asylum Road and the Old Kent Road, but there is no suggestion of a secondary Roman road heading south from this point, which is interesting. Field parcels are shown as orchard or open

[7] Mills Whipp Projects '*London's English Civil War Defences Project, Locations of the Defences: Study Area 5 Vauxhall To Rotherhithe'* Historic England and Southwark & Lambeth Archaeological Excavation Committee (SLAEC), published in draft form December 2022

pastoral land. The River Peck is not shown, although it is shown on Rocque's subsequent map of the area dated 1768. The village of Peckham has also extended by 1746 (Figure 5).

4.106 The historic road system, villages, parishes and parks show a developing community of the LDO Study Area, but which would have still been generally rural in nature with much of the area set to common pasture.

4.107 The 1746 Rocque *Map of London* shows a broadly similar pattern of development, except that some fields are now ploughed and the River Peck and several streams or tributaries are shown running across the general area. Turnpikes are shown at St Thomas Watering and at the junction of what is now Rotherhithe Old and New Roads, where another 'Halfway House' is located.

4.108 By 1750, London had overtaken Paris to become Europe's largest conurbation. This brought acute problems of housing, sanitation and infrastructure, and for government and religious provision. The feeding of the metropolis, or providing it with other necessities, involved much of the hinterland serving the City. Partially in response to this, during the post-medieval period numerous local industries were established in the LDO Study Area continuing throughout the later 18th- to 19th-centuries, with the gas industry also developing locally. For example, Gasholder No 13 at the Old Kent Road former gasworks was listed Grade II in 2017. Numerous other early local industries filled the LDO area including, lime-burning, glass working, tile kilns, to name but a few (Figure 2e 131211).

4.109 The 1800 Milne *Land Use Map* depicts the LDO Study Area within a colourful landscape where each of the colours used by Milne has a landuse application. The LDO area is shown and the various manors and parishes are shown marked across the map base and their jurisdiction areas can be seen. Milne has depicted most of the central area of the LDO Study Area as **M** which stands for **Meadow** and is shaded light green on this map. The next largest area appears to be the areas denoted **G** which stands for **Market Gardens** and these are coloured in light blue. The market gardens are shown in the north and south of the Study Area, especially on the periphery of Peckham Village. There is not much arable land shown across the landscape, which Milne normally denotes in light brown. The next largest area shown by Milne is **P** which stands for **Paddocks** or **little parks** and these again are generally clustered around the central streets at the core of Peckham village. There are no areas of forest shown which Milne usually denotes **W** and colours dark green, few areas of Heath normally shown in yellow or Private Gardens which are normally purple are shown. The Milne Land Use Map shows the predominantly rural nature of the LDO Study Area and that most of it is set to meadow and small-holding market gardens in 1800 (Figure 7),

4.110 A main feature of the LDO Study Area around the time of Milne's 1800 map is obviously the Grand Surrey Canal (Figure 2b). The Grand Surrey Canal was authorised in 1801, and thus is not featured on the 1800 map. From 1809, it ran from the Camberwell Road and Peckham Canal Basin out to Greenland Dock, connecting into the Surrey Commercial Docks as they developed during the 19th century. By 1930, the canal ran north, crossing the border with Lewisham and entered the south side of Greenland Dock, opposite the entrance to the Russia Dock. Greenland Dock and South Dock are arguably the most significant elements of the dock complex; however, both of these docks have been significantly improved, and Greenland Dock has been extended so it is unlikely that significant fabric from its original 1695-99 form survives (Figure 2b, shown in green as a monument extending east-west across the LDO Study Area).

4.111 The Grand Surrey Canal was originally planned to reach Mitcham but was never completed beyond the extension running north- south to Peckham. The engineer for the first year was Ralph Dodd and the entrance lock into the River Thames was opened in 1807.

4.112 The Greenwood *Map of Surrey*, dated 1823, shows the route of the Grand Surrey Canal, bisecting the LDO Study Area east to west. Greenwood does not show the extension of the canal southwards Peckham Canal Head though it is implied by the sketched indication of the route on the map base (Figure 8). It is interesting that by 1823 the Grand Surrey Canal had been created which must have

been a major feat of engineering but the railways were still to be constructed at this time. Interestingly, Greenwood still shows the central area of the LDO Study Area to be basically open meadows, the line of the Croydon Canal is shown in Lewisham to the east of the Study Area. The River Peck can be seen meandering across the landscape south of the Grand Surrey Canal and more clearly to the north where it links to other streams and rivulets in the area. The wealth of the area at this time is more evident with some large houses marked in Peckham and scattered across the landscape (Figure 8).

4.113 The use of the Canal for transport ended in 1836 and it became a line of wharves in the Surrey Canal Walk Area (Plates 61 to 66). One of the former wharves, Eagle Wharf, was also the original site of Peckham Manor, located on the former Eagle Wharf timber yard site, which is now the Student Accommodation building on Bonar Street adjacent to Surrey Canal Walk (Plates 61 to 63).

4.114 The 1840s Tithe Maps of the large LDO Study Area have been studied, although a digital version of the northwestern area was temporarily unavailable. The stitched together Tithe Maps comprise the *Camberwell Parish Tithe Map* and the 1844 *St Mary Rotherhithe Tithe Ma*p (Figure 9), the apportionments for each property parcel have not been studied for this assessment, although they can be accessed upon request.

4.115 The 1840s Tithe Maps are the first detailed surveys of the LDO Study Area undertaken to modern cartographic standards and at a closer scale many of the outlines of possible buildings are shown quite accurately. Figure 9 shows very clearly and in great detail the scale of the Grand Surrey Canal and its southern extension down to Peckham. The layout of the bridge crossing of the Old Kent Road just east of Peckham Park Road is shown in greater detail.

4.116 Figure 9 shows many other precise details of the layout of individual properties and terraces and other fine details are carefully shown across the LDO Study Area. The Licensed Victuallers almshouses at Caroline Gardens, is shown alongside Asylum Road.

4.117 As noted in the Brief, much of North Peckham, south of the Old Kent Road, represented a 'New Town' from the 1830s onwards with a long period of development during that century over what was formerly agricultural fields. Figure 9 shows Peckham, especially to the west of the extension of the Canal, to be set out on a regular grid pattern which forms a jarring contrast to the medieval layout of central Peckham, which still respects its historic routeways. The comparison of the streets shown on this amalgamated 1842 and 1844 plan with the walkover survey that took place on 25th January 2023 shows that there are large areas of the Southwark 2.0 DHN and the surrounding areas that have not materially changed since this map was drawn (see Plates 37 to 52). Areas of the LDO Study Area, and covered by the Southwark 2.0 DHN, where this is most evident is along Asylum Road, Studholme Street, Fenham Road and through the carefully laid out streets that lead to the Bells Gardens Estate.

4.118 The Canal Company combined with the Commercial Docks Company to take over the Surrey Commercial Docks in 1864. In 1908, the canal was transferred to the Port of London Authority, who eventually closed it in 1971. The canal was subsequently drained and the drained canal was partially used for landfill, and incorporated into the open space of Surrey Canal Walk, the east-west running part of the Grand Surrey Canal is now incorporated into Burgess Park and can still be interpreted running centrally through the Park to join the LDO Study Area at approximately the point where the two branches of the canal once met.

4.119 The next map in the chronological sequence is the 1873 Ordnance Survey map (Figure 10). The transformation of the built landscape since the Tithe plans - only 30 years earlier - is dramatic. Nearly all of the open fields in the north and western areas have now been in-filled with residential development and factories and machine works dispersed with this residential growth.

4.120 The in-fill development across Bermondsey is quite dramatic but unfortunately that part of that Tithe map was missing so the origin of this growth cannot be confidently ascertained. The striking change

across the landscape is, of course, the arrival of the railways and this had a major impact on the northern area of the LDO Study area. The London, Brighton and South Coast Railway is shown cutting a swathe northwest to southeast across the Study Area. The construction and cutting for this railway is of a large scale and must have had a significant impact on archaeological remains that may once have survived in this sensitive part of the borough.

4.121 The South Eastern Railway is also shown on Figure 10 following a west to east alignment across the northern area with the enormous Goods Depot at the Bricklayers Arms shown just to the west of the LDO Study Area boundary. The impact of the Goods Deport and the railway tracks again would appear to have had a large scale impact on the archaeological resource in these areas. However, it is very interesting to note that subsequent excavations in the area of the Bricklayers Arms have recovered some of the most important prehistoric evidence for Southwark and for London. This forms quite an interesting case study as not only had the Bricklayers Arms Depot site undergone extensive developmental pressure but it had also been destroyed by bombing in the Second World War, but nevertheless the archaeology of this site did survive these events at depth. For this reason, it is always important to not make unqualified assumptions about the survival of archaeological deposits following developmental impacts at the desk based assessment stage. This should only be done if there is an emphatic evidence-base that all archaeological deposits have been entirely removed. Assessment needs to 'ground-truth' such assumptions, in order to safeguard the fragile and irreplaceable historic environment and be aware that the resilience of archaeological deposits to various change scenarios can often be surprising and unpredictable. There are numerous sites from London and Southwark, where isolated zones of high archaeological significance have survived - in areas which may have appeared from cartographic and documentary sources to have been destroyed, a good example of this is the Roman mausoleum on Great Dover Street, which survived in localised areas despite extremely deep and damaging basements over much of the site (Figure 10).

4.122 Figure 10 also shows that post medieval development favoured the drier and more stable geology of the north, south and western areas of the LDO Study Area, while the softer geology marshland and areas prone to flooding of the central and eastern areas historically part of the Bermondsey Lake were the last to see development. In 1873, these areas are still set out as fields and market gardens away from the centres of residential and industrial growth.

4.123 The *LCC Bomb Damage Map for World War Two (1939-45)* shows varied levels of bomb damage across the LDO Study Area. The key is given to the right of Figure 11, and each of the colours refer to the level of damage caused by bombing. The darker the colour the greater the destruction or damage that was inflicted, ranging from 'minor blast damage' through to 'destroyed' and 'damaged beyond repair.' Particular targets in the Blitz were the communications networks, power networks and important industrial sites. The Bricklayers Arms railway and depot was seriously damaged and much of the railway infrastructure was irreparable. V2 Rocket and V1 Flying Bombs fell across the area and serious damage was suffered in the Camberwell, Southampton way area, Peckham Rye was especially damaged as was the northern end of Peckham Park Road. The gas works to the north of the Old Kent Road were also hit.

4.124 The 1939 to 1945 LCC bomb damage map does actually also show that in the intervening period between the 1873 Ordnance Survey map and 1939 nearly all of the LDO Study Area had been in filled with dense and mainly residential development. The old areas shown in 1873 as market gardens around Bermondsey Lake have by 1939 been set out to terrace streets and there is general development across the whole map base with other pockets of market garden and open space having also been infilled by 1939.

4.125 Many of the 1950s housing estates that are now a feature of the LDO Study Area, and will benefit from the DHN, were built following the Second World War on bomb damaged sites. This is especially evident in the Bells Gardens Estate, Tustin Estate and in several open spaces and parks now, such

as Brimmington Park and Cossall Park. These areas were used during the subsequent clearance of the worst impacted areas (Plates 1 to 78). The Google Earth image from 1945, shows the devastation across the LDO Study Area (Figure 12). It is evident from the 1945 image, in comparison with later map records. that the housing estates grew up on these previously bomb damaged sites (Figure 13)

4.126 Even by the Ordnance Survey Map series of 1948 (Figure 12) it can be seen that the area has changed dramatically and even though the areas shown on the 1945 photographic image have obviously been cleared away these locations do appear as stark and empty open areas on the 1948 map base.

4.127 After the war, it was realised the large areas of the study area were too densely occupied, with lots of small factories and industries and their workforce suffering in poor living conditions nearby. It was realised that living conditions in many of these areas were totally unacceptable. Many of the cramped residential properties were demolished, as well the large factory buildings such as some of the local industries such as biscuit, jam. mineral water, ginger beer and lemonade manufacture and bottling and these were cleared away and replaced by large open parks such as Burgess Park and other smaller open spaces dotted across the landscape, such as Cossall Park and Brimmington Park.

4.128 Further maps are available for the LDO Study Area but as these do not materially affect the DHN scheme they are not all repeated here. The 2014 to 2020 Ordnance Survey map shows the study area as it exists today, the large housing states can be seen in the central zone and in other distinct locations across the map base (Figure 14). The 2021 Google Earth image shows the layout of the study area, and the estates across this part of the borough can also be seen on this aerial image (Figure 15). The Southwark 2.0 District Heating Network Proposed Primary Network (shown in blue on Figure 16) shows the first proposed routes and a walkover survey of these areas took place on 25th January 2023 and is presented as Plates 1 to 78.

4.129 A large number of the GLHER records within the Study Area refer to post medieval and modern archaeological remains which are not discussed in detail here unless relevant to the impact of the Southwark 2.0 DHN scheme. The dense distribution of records across the whole LDO Study Area amounts to hundreds of individual records and all these records could not be discussed within this assessment report. The density of these records can be appreciated in part by study of Figure 2b and Figure 2i, which shows the principal records for the later periods and listed and locally buildings across the study area.

4.130 Overall, historic mapping suggests that the LDO Study Area comprised an area of open pasture and later markets gardens before it was developed with terraced housing and industrial works buildings in the late 19th century. It was subject to severe wartime bomb damage, followed by demolition and redevelopment in the immediate post-war period, with a further full site clearance and redevelopment in the late 20th or early 21st century.

4.131 Therefore, a low archaeological potential is considered across the LDO Study Area for the post medieval and modern periods. Modern building foundations and deep Made Ground of negligible significance are likely to be present in many of the DHN trench routes, but are not deemed of high archaeological significance and, therefore, are not discussed further in this assessment.

5 THE DISTRICT HEATING NETWORK MITIGATION STRATEGY

5.1 The principles of the LDO Study Area and the example of the DHN of the Southwark 2.0 scheme are set out in the Southwark 2.0 District Heating Network Project Overview document, which is shown as Appendix 1.

5.2 Existing national policy guidance for archaeology (the NPPF as referenced in section 2) enshrines the concept of the 'significance' of heritage assets. Significance as defined in the NPPF centres on the value of an archaeological or historic asset for its 'heritage interest' to this or future generations.

5.3 In line with the Brief, pre-application consultation, and the results of this assessment, a programme of proportionate and targeted archaeological watching brief and potentially excavation work will be required during the DHN pipe installation groundworks, to confirm the potential extent, character, date and significance of any archaeological remains which may be present.

5.4 The 'Principles of Archaeological Investigation and Notification' strategy sets out a strategy for any future construction-integrated archaeological works, including targeted excavation, watching brief or other strategies (Appendix 4).

Assessment of Significance

5.5 The assessment concludes that the LDO Study Area contains the potential to inform on some of the earliest archaeology of Southwark and other areas and themes of significance, as follows:

- Mesolithic and early prehistoric sites along the Old Kent Road;
- The palaeoecological environment and prehistoric archaeology locations from the shoreline and relict fills of the large late glacial Bermondsey Lake and the associated riverine geology and topology seen on sites such as Bramcote Grove and Bricklayers Arms Railway Depot (where intact later prehistoric trackways and structures survive);
- To further define the course of the River Peck and any other watercourses of Southwark and their formation processes and relationship to the prehistoric, Roman and later landscapes:
- The route of the Roman road of Watling Street and roadside activity following its projected line just south of the Old Kent Road, especially in Brimmington Park and evidence of the enigmatic Lewes to London secondary Roman road;
- Additional information on the history of Old Kent Road, including any evidence for the establishment of the modern alignment, as a medieval drovers' route from Canterbury and connections with Chaucer, Dickens and other stories and social histories;
- Post medieval industrial archaeology relating to the Grand Surrey Canal, bridging points; the industry of gas engineer George Livesey and the numerous local industries that have grown up around the village cores of Bermondsey, Peckham and Camberwell. The DHN works could inform on these stories and many others including the rebuilding of this part of London following the Second World War and the growth of the 1950s estates and make a valuable and authentic contribution to local initiatives, social value and public benefit by knowledge sharing for the public good.

5.6 The desk based assessment has identified five areas where the archaeological potential is higher on the Proposed Primary Network Phase 1 and Phase 2 areas (Figure 16), as follows:

- Surrey Canal Road to Ilderton Road (Bermondsey Lake prehistory and Grand Surrey Canal industrial archaeology)
- Old Kent Road (Prehistoric and Roman)

- Brimmington Park (the projected line of Roman Watling Street)
- Asylum Road area (Roman secondary road archaeology and evidence of the River Peck)
- Peckham Canal Walk (Grand Surrey Canal industrial archaeology)

5.7 The primary objective of this desk-based assessment was to inform approaches to the recording and understanding of buried archaeological to be detailed in a Written Scheme of Investigation. The objective is for both documents to support the Local Development Order and their use enforced by conditions attached to the order.

5.8 The decision on the precise nature of what level of mitigation strategy will be required to safeguard archaeological interest remains with Southwark Council's Borough Archaeologist as advisor to the Local Planning Authority. This desk based assessment is simply an evidence-base designed to support the Local Planning Authority in performing their statutory duties and enabling informed planning decisions based on sufficient supportive evidence to be made.

5.9 As the installation of the Southwark 2.0 District Heating Network progresses and new DHN routes are designed and confirmed, and programmes are known (across the LDO study Area) then bespoke written schemes of investigation will need to be prepared and submitted to support these new routes and mitigate any potential harm to buried archaeological heritage assets from the impact of the DHN pipe laying and trenching regime

5.10 The assessment advises that a reasonable and pragmatic watching brief strategy needs to be agreed with the Borough Archaeologist in accordance with the Brief and any future conditions that may be applied to the Local Development Order Consent. This needs to reflect a proportionate response to the significance of the archaeology, and potential for survival in each location where archaeological sensitivity is identified. For some areas this will require full archaeological excavation, rather than watching brief works and tighter controls on the monitoring of the opening of the trenching work in certain areas, to ensure this is carried out to archaeological best practice and that archaeological remains of potential national significance – such as the structural evidence of the London Roman roads is preserved from harm and preserved by recording, excavation, publication and archiving. The opportunities for the dissemination of the results for public engagement and community benefit will also need to be explored.

5.11 For much of the LDO Study Area, the watching brief could generally be in the form of scheduled site visits when stretches of trenching have been opened and exposed, This is a suitable and proportionate strategy for mitigating harm without imposing an onerous and expensive archaeological regime in the majority of the LDO Study Area locations. The Southwark 2.0 DHN trenching, for example, has only a very small and localised impact on potential archaeology in each of its locations. The obvious public benefits that the scheme delivers for Southwark residents and for the environment could be argued to outweigh the harm of minimal impact to archaeological deposits, if the potential harm is mitigated by a small scale archaeological watching brief being maintained and full excavation being applied in localised areas of high significance.

5.12 The assessment suggests that it would not be fair or proportionate to impose a full time watching brief on a scheme of this nature, as robust and positive outcomes for the archaeology can be delivered by occasional monitoring and recording visits. Similar strategies have been achieved on other large utility projects across London such as the Thames Water Victorian Watermain Replacement (VMR) project and a similar strategy should be adopted here. This also ensures that elements of the DHN strategy are not unnecessarily delayed and elements of the scheme such as road closures and diversions are kept to a minimum. More details about the project can be found in the attached document –Project Overview (Appendix 1).

5.13 One point is clear and that is that the nature of impacts from this proposal is different to the VMR water main replacement scheme, for example, where much of the work involved replacement and relining within existing areas of trench-cut excavation. The DNHs works will involve entirely new

construction which is likely to be manoeuvred in and around existing services through will be at a deeper depth than most utilities in the roads and will be cut through what are likely to be less disturbed areas generally.

5.14 The ‘Principles of Archaeological Investigation and Notification to the LPA’ strategy sets out a strategy for any future construction-integrated archaeological works, including targeted excavation, watching brief or other strategies (Appendix 4).

6 SUMMARY AND CONCLUSIONS

6.1 The LDO Study Area encloses an area in south Southwark of c. 505 hectares (5,050,000 square metres). The objective of the DHN's within the LDO Study Area is to supply low carbon heat to council-managed housing estates across Southwark, comprising nearly 2,700 properties, enabling them to connect to combined heat and power, reducing the reliance on natural gas or oil boilers while also reducing emissions of CO2 and NOx gases.

6.2 To enable the efficient installation of the Southwark 2.0 DHN and future DHN's a Local Development Order (LDO) is being applied for and this document forms an appendix or addendum to support the LDO application regarding archaeological interest.

6.3 This assessment is in accordance with a Southwark Council Brief (Appendix 2), central and local government policy and guidance on archaeology and planning, and the 'Standard and Guidance for Historic Environment Desk-Based Assessments' as set out by the Chartered Institute for Archaeologists (CIfA, October 2020). The Brief identifies that the assessment will form a robust basis for any future written schemes of investigation (WSIs) that will provide a proportionate response commensurate to any archaeological impacts identified.

6.4 In 2013, Veolia ES (UK) Limited and Southwark Council delivered the South East London Combined Heat and Power (SELCHP) District Heating Network, and now Southwark Council, with Veolia as the delivery partner, aim to extend the existing agreement in the Old Kent Road and North Peckham areas of Southwark (Figures 1 and 16).

6.5 In terms of relevant, nationally significant designated archaeological heritage assets, no Scheduled Monuments, World Heritage Sites, Registered Parks or Gardens, Historic Battlefields or Protected Wrecks lie within the LDO Study Area, but the study area does include large areas of the Southwark Tier 1 Archaeological Priority Area (APA) of 'North Southwark and Roman Roads', and contains the historic Southwark Tier 2 Archaeological Priority Area of 'Peckham Village'; as well as several listed and locally listed buildings, conservation areas and London Square areas. The neighbouring Archaeological Priority Areas (APAs) of the London Borough of Lewisham in the immediate vicinity of SELCHP are also referenced within this report.

6.6 As the LDO Study Area is so large, it has not been practical or possible to discuss every archaeological site or findspot in detail but the assessment provides an informed high-level overview of the archaeological resource (Figure 1). The assessment also provides detailed focus on the first two areas of Proposed Primary Network pipework delivery, known as the Phase 1 and Phase 2 works, in the form of a walkover survey; the results of which are submitted as a series of annotated photographic plates (Plates 1 to 78).

6.7 The assessment concludes that the LDO Study Area contains the potential to inform on some of the earliest archaeology of Southwark and contribute to areas, stories and themes of significance, as follows:

- Mesolithic and early prehistoric sites along the Old Kent Road;
- The palaeoecological environment and prehistoric archaeology from the shoreline and relict fills of the large late glacial Bermondsey Lake and its associated riverine geology and topology;
- To further define the course of the River Peck and any other watercourses of Southwark and their formation processes and relationship to the prehistoric, Roman and later landscapes:
- The route of the Roman road of Watling Street and roadside activity following its projected line just south of the Old Kent Road, especially in Brimmington Park and evidence of the enigmatic Lewes to London secondary Roman road;

- Inform on the complex histories of the Old Kent Road, its links to pilgrims, drovers and industrialists, and connections with Chaucer, Dickens and other social histories;
- Post medieval industrial archaeology relating to the Grand Surrey Canal, bridging points, the industry of gas engineer George Livesey and the numerous local industries of the village cores of Bermondsey, Peckham and Camberwell;
- The rebuilding of London following the Second World War and the growth of the 1950s estates, making a valuable and authentic contribution to local initiatives, social value and public engagement by knowledge sharing for the public good.

6.8 Although the pipe trench groundworks along each road in the LDO Study Area will be of a small scale, the cumulative impact of the whole scheme is identified as significant, presenting an opportunity to record archaeological transects through the geology and topography of the landscape. This could provide information on the spatial distribution of archaeological sites and the formation processes that have led to this distribution.

6.9 The assessment notes that the DHN's across the LDO Study Area provide an opportunity to investigate the archaeology of 'road systems,' which is a different model to the archaeology of 'property parcels' (even those that front onto or abut roads) and is subject to different change scenarios and iterative stages of development activity. In summary, the absence of archaeology in property plots adjoining the road network sites is not necessarily indicative of archaeology being also absent in the nearby road systems (and vice-versa).

6.10 On the balance of the evidence, the assessment concludes that the construction activity associated with the proposed DHN's will have a generally low impact on buried archaeological heritage assets of high to moderate archaeological significance and a low to negligible impact on built heritage assets; additionally these impacts can be mitigated by the implementation of a programme archaeological watching brief works targeted on areas of archaeological sensitivity identified in this assessment.

6.11 The DHN's are anticipated to cut through mainly modern made-ground and road make-up deposits for much of its below ground level impact, and the report concludes that it is unlikely that there will be any remains of national significance encountered that might present a constraint to the DHN proposal or form a material design consideration.

6.12 The risk of harm to archaeological deposits can also be weighed against the demonstrable public and environmental benefits delivered by the scheme, and mitigated by design, route changes, watching brief fieldwork and a programme of public engagement, ensuring the results of any significant archaeological discoveries are disseminated.

6.13 In line with the Brief, pre-application consultation, and the results of this assessment, a watching brief will be required, to confirm the potential extent, character, date and significance of any archaeological remains which may be present. The assessment identifies five areas of archaeological potential for the Proposed Primary Network Phase 1 and Phase 2 areas (Figure 16), as follows:

- Surrey Canal Road to Ilderton Road (Bermondsey Lake prehistory and Grand Surrey Canal industrial archaeology)
- Old Kent Road (Prehistoric and Roman)
- Brimmington Park (the projected line of Roman Watling Street)
- Asylum Road area (Roman secondary road archaeology and evidence of the River Peck)
- Peckham Canal Walk (Grand Surrey Canal industrial archaeology)

6.14 The objective of this assessment is to quantify archaeological significance across the LDO Study Area, and to inform any future Written Scheme of Investigation prepared to safeguard the archaeological interest identified, in accordance with the Brief and Policy 23 Archaeology of the Southwark Local Plan 2022.

6.15 The 'Principles of Archaeological Investigation and Notification to the LPA' strategy sets out a strategy for any future construction-integrated archaeological works, including targeted excavation, watching brief or other strategies (Appendix 4).

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Cartographic

1729 Senex Map of Surrey

1766 Rocque Map of London

1768 Map of Surrey

1797 Stockdale Map of London

1800 Milne Map of London

1807 Stockdale Map of London

1809 Laurie & Whittle Map of London

1823 Thompson Map of London

1833 Crutchley Map of London

1835 Cross Map of London

1837 Camberwell Parish Tithe Map

1938 Greenwood Map of London

1842 Deptford Parish Tithe Map

1848 Wyld Map of London

1861-62 Weller Map of London

1862 Stanford Map of London

1873-76 Ordnance Survey (1:1056)

1888 Bacon Map of London

1895 Ordnance Survey (1:1056)

1916 Ordnance Survey (1:2500)

1939-45 LCC Bomb Damage Map

1945 Aerial Photograph

1947-49 Aerial Photograph

1950-52 Ordnance Survey (1:2500)

1969-72 Ordnance Survey (1:1250)

1991 Ordnance Survey (1:1250)

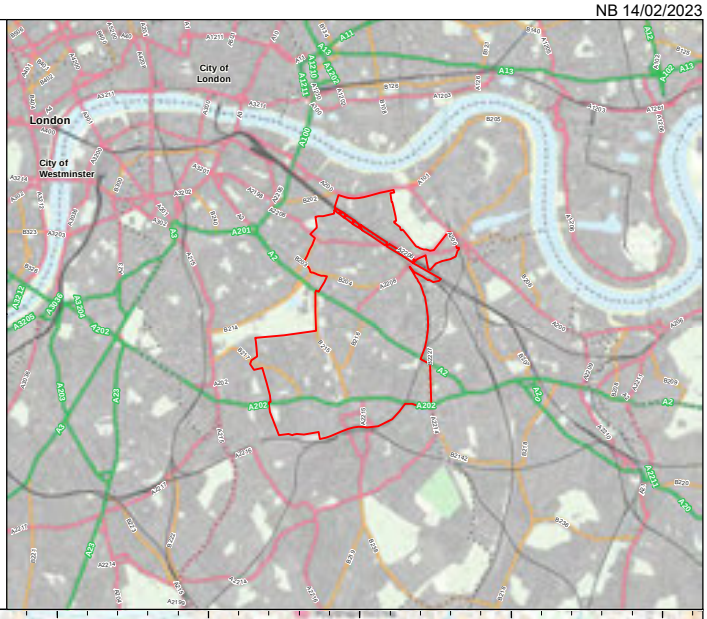
1994 Ordnance Survey (1:10000)

1999 Aerial Photograph

2003 Google Earth Image

2022 Google Earth Image

FIGURES



Site Boundary

N

0 250 500m

Scale at A4: 1:25,000

rps
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Figure 1

Site Location

NAME 14/02/2023

1005546
1002058
1001980
1001993
1000092
Tower of London
1002061
1456951
1433280
1012707
1012806
1002054
1422618
1001979
1005556
1001983
1001984
1000838
SOUTHWARK PARK
1423608
1021239
1000816
KENNINGTON PARK
1000822
MYATT'S FIELDS
1000831
RUSKIN PARK
1000824
NUNHEAD CEMETERY (ALL SAINTS)

Legend

- Site Boundary

Designated Heritage Assets:

- Scheduled Monuments
- World Heritage Site
- Registered Parks and Gardens

N

0 250 500m

Scale at A3: 1:22,000

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Figure 2a

Designated Heritage Assets Plot

Project Ref: N:\28000 - 28999\28727 - District Heat Network\Figures\Mapping\GIS\HER plot.mxd

NB 23/02/2023

Legend

Site Boundary

Non-designated Heritage Assets:

HER Records Points

HER Records Polygons

N

0 250 500m

Scale at A3: 1:20,000

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Figure 2b

HER Records Plot

Project Ref: N:\28000 - 28999\28727 - District Heat Network\Figures\Mapping\GIS\HER plot.mxd

NAME 13/02/2023

Project Ref: N:\28000 - 28999\28727 - District Heat Network\Figures\Mapping\GIS\HER plot.mxd

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Legend

Site Boundary

Non-designated Heritage Assets:

Prehistoric Points

- Prehistoric
- Mesolithic - Neolithic
- Mesolithic - Bronze
- Neolithic
- Bronze Age
- Late Iron Age

Prehistoric Polygons

- Prehistoric
- Mesolithic
- Bronze
- Prehistoric - Late Bronze Age
- Early Mesolithic - Late Bronze Age

N

0 250 500m

Scale at A3: 1:15,000

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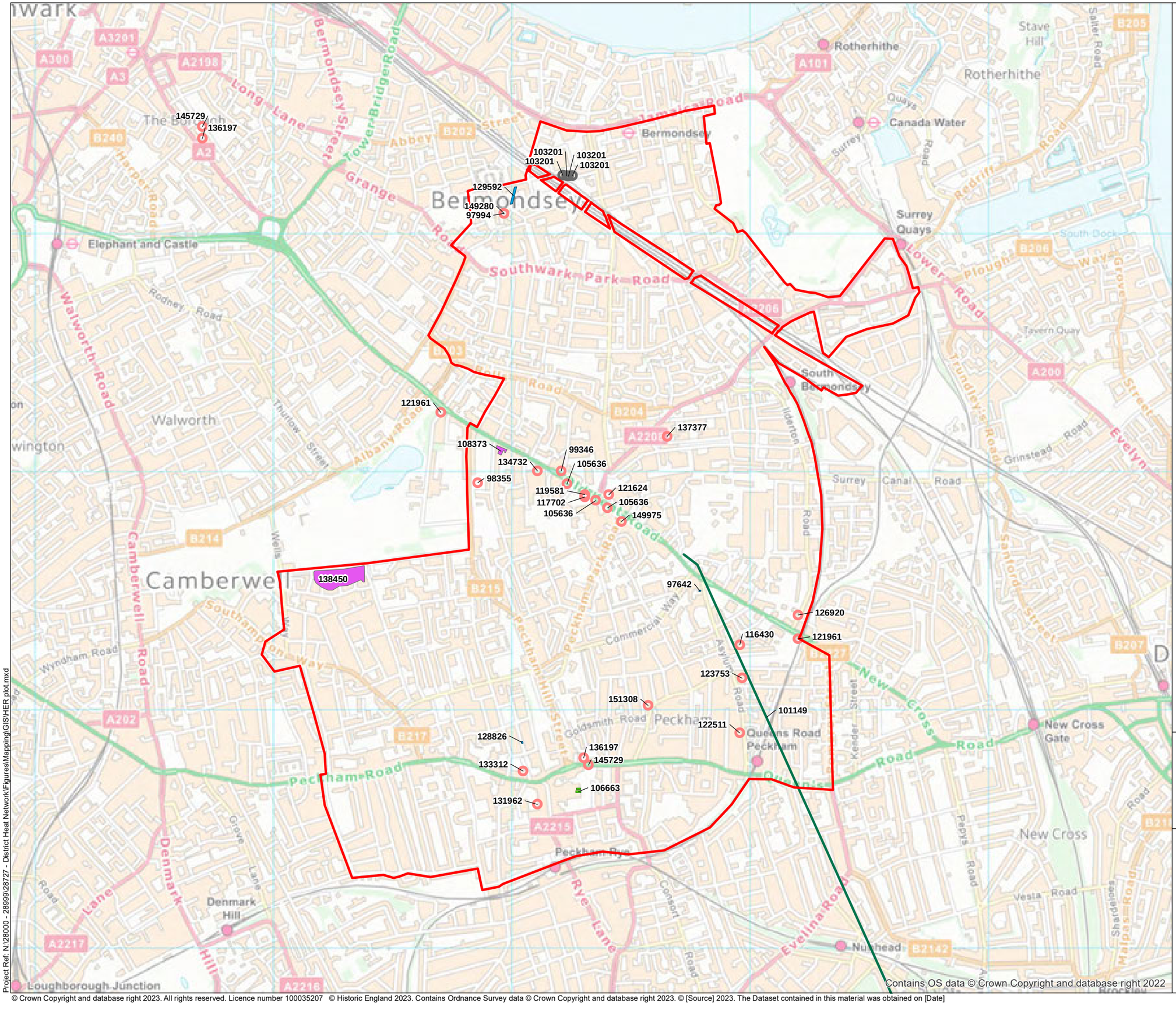
Figure 2c

Prehistoric HER Plot

NAME 13/02/2023



Project Ref: N:\28000 - 28999\28727 - District Heat Network\Figures\Mapping\GIS\HER plot.mxd

Legend

- Site Boundary

Non-designated Heritage Assets:

- Roman Road

Roman Points

- Roman
- Late Iron Age - Roman

Roman Polygons

- Roman - Modern
- Roman
- Roman - Medieval

N

0 250 500m

Scale at A3: 1:15,000

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Figure 2d

Roman HER Plot

NAME 13/02/2023

Legend

Site Boundary

Non-designated Heritage Assets:

Medieval Points

- Medieval
- Medieval - Tudor
- Late Medival - Modern

Medieval Polygons

- Prehistoric - Medieval
- Medieval
- High Medieval
- High Medieval - Modern

N

0 250 500m

Scale at A3: 1:15,000

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Figure 2e

Medieval HER Plot

Project Ref: N:\28000 - 28999\28727 - District Heat Network\Figures\Mapping\GIS\HER plot.mxd

NAME 14/02/2023

Verney Road/Bramcote Road, [Varcoe Road]

Leyton Square, Maismore Street, London

Commercial Road (Sumner Road)

Lyndhurst Square, Lyndhurst Way, Denmark Hill, London

Elm Grove/Holly Grove, [South Grove]

Legend

- Site Boundary
- London Square Areas

Archaeological Priority Areas

- North Southwark and Roman Roads
- Peckham Village
- Thames Alluvial
- Thames and Ravensbourne Terrace Gravels
- Watling Street and the 'Deep-Ford'

N

0 250 500m

Scale at A3: 1:15,000

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Figure 2f

Archaeological Priority Areas and London Square Areas

Project Ref: N:\28000 - 28999\28727 - District Heat Network\Figures\Mapping\GIS\HER plot.mxd

NAME 14/02/2023

Legend

- Site Boundary

Non-designated Heritage Assets:

- CivilWarDefs_Geometry_line
- CivilWarDef_Geometry_poly

N

0 250 500 m

Scale at A3: 1:15,000

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Figure 2g

Civil War Defences Plot

Project Ref: N:\28000 - 28999\28727 - District Heat Network\Figures\Mapping\GIS\HER plot.mxd

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NAME 14/02/2023

Legend

- Site Boundary

Historic Landscape Characterisation:

- Commercial
- Industry
- Institutional
- Public Open Spaces
- Georgian Residential
- Victorian Terraces
- Inter-war suburbs
- 1945-2006 housing
- Shed Parks

N

0 250 500m

Scale at A3: 1:15,000

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Figure 2h

Historic Landscape Characterisation Plot

Project Ref: N:\28000 - 28999\28727 - District Heat Network\Figures\Mapping\GIS\HER plot.mxd

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NAME 22/02/2023

Legend

- Site Boundary

Previous Archaeological Work:

- HER Events Points
- HER Events Lines
- HER Events Polygons

N

0 250 500 m

Scale at A3: 1:30,000

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Figure 2i

HER Events Plot

Project Ref: N:\28000 - 28999\28727 - District Heat Network\Figures\Mapping\GIS\HER plot.mxd

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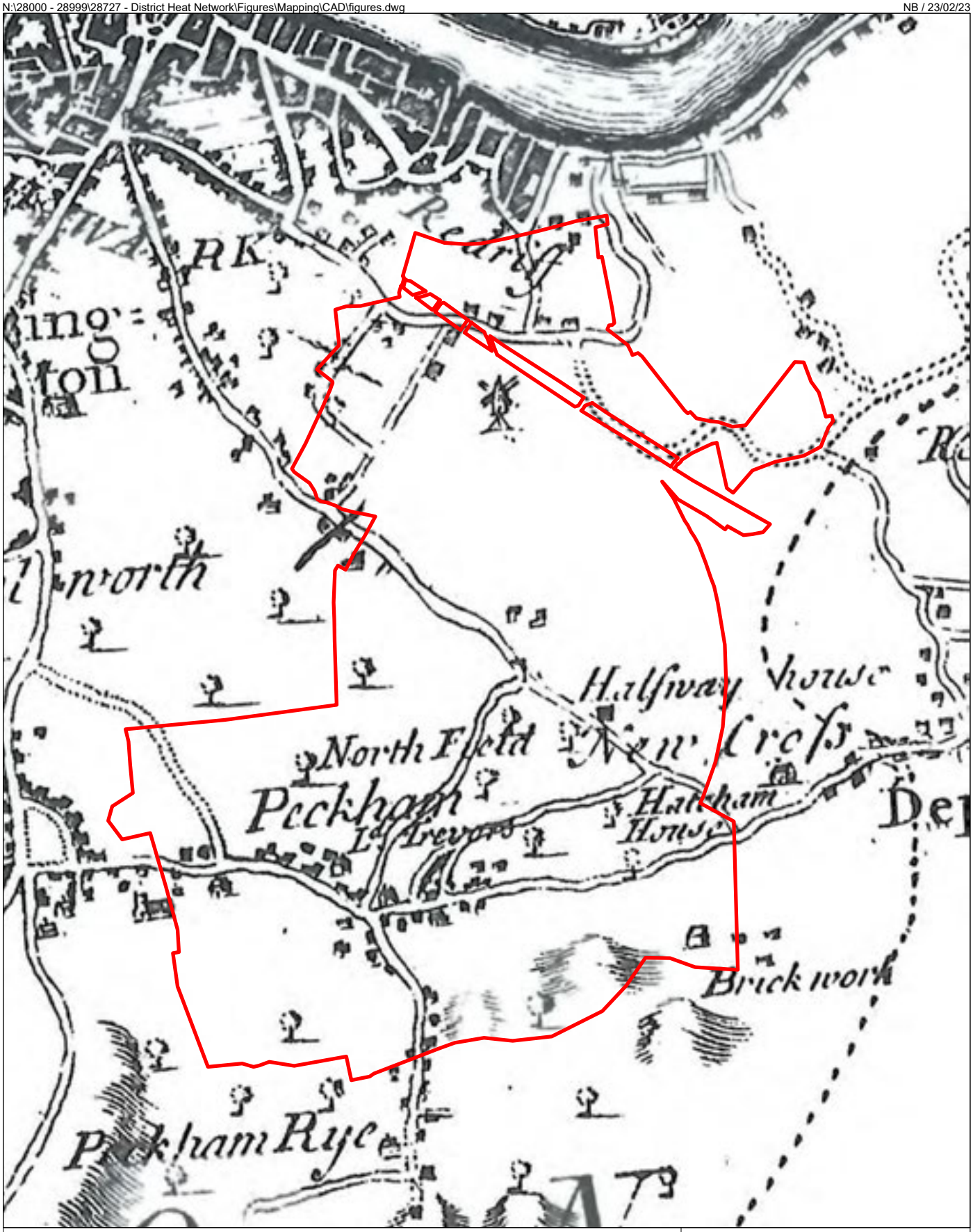

Site Boundary (approximate)

N

0 200 400m

Scale at A4: 1:20,000 (approximate)

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Figure 3

1729 Senex Map of London

Site Boundary (approximate)

N

Not to Scale
Illustrative Only

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Figure 4

1738 Vertue Map of the London Civil War Defences

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Figure 5

1746 Rocque Map of the 10 Miles around London

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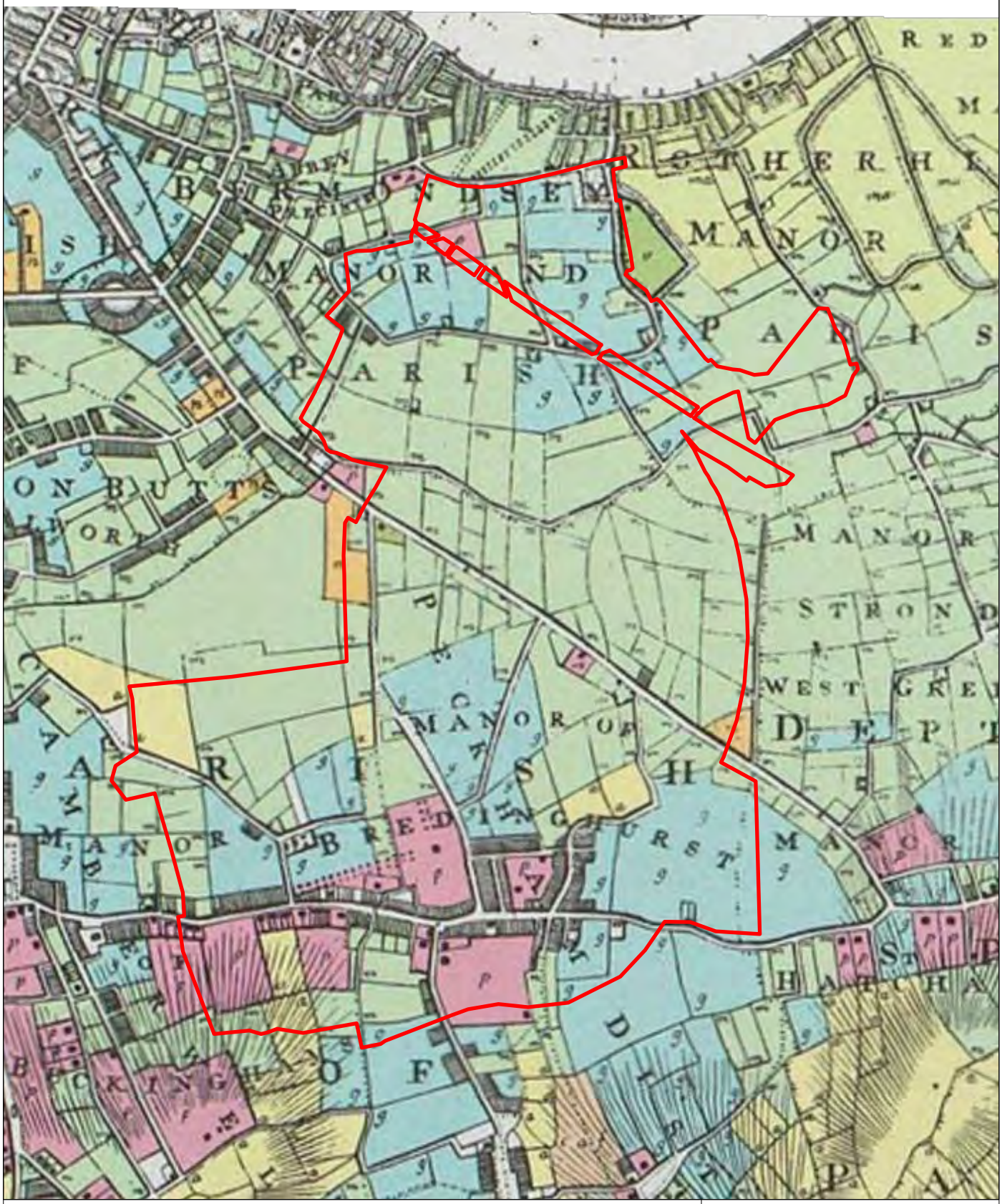
Figure 6

1768 Rocque Map of Surrey



Site Boundary (approximate)

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Scale at A4: 1:20,000 (approximate)

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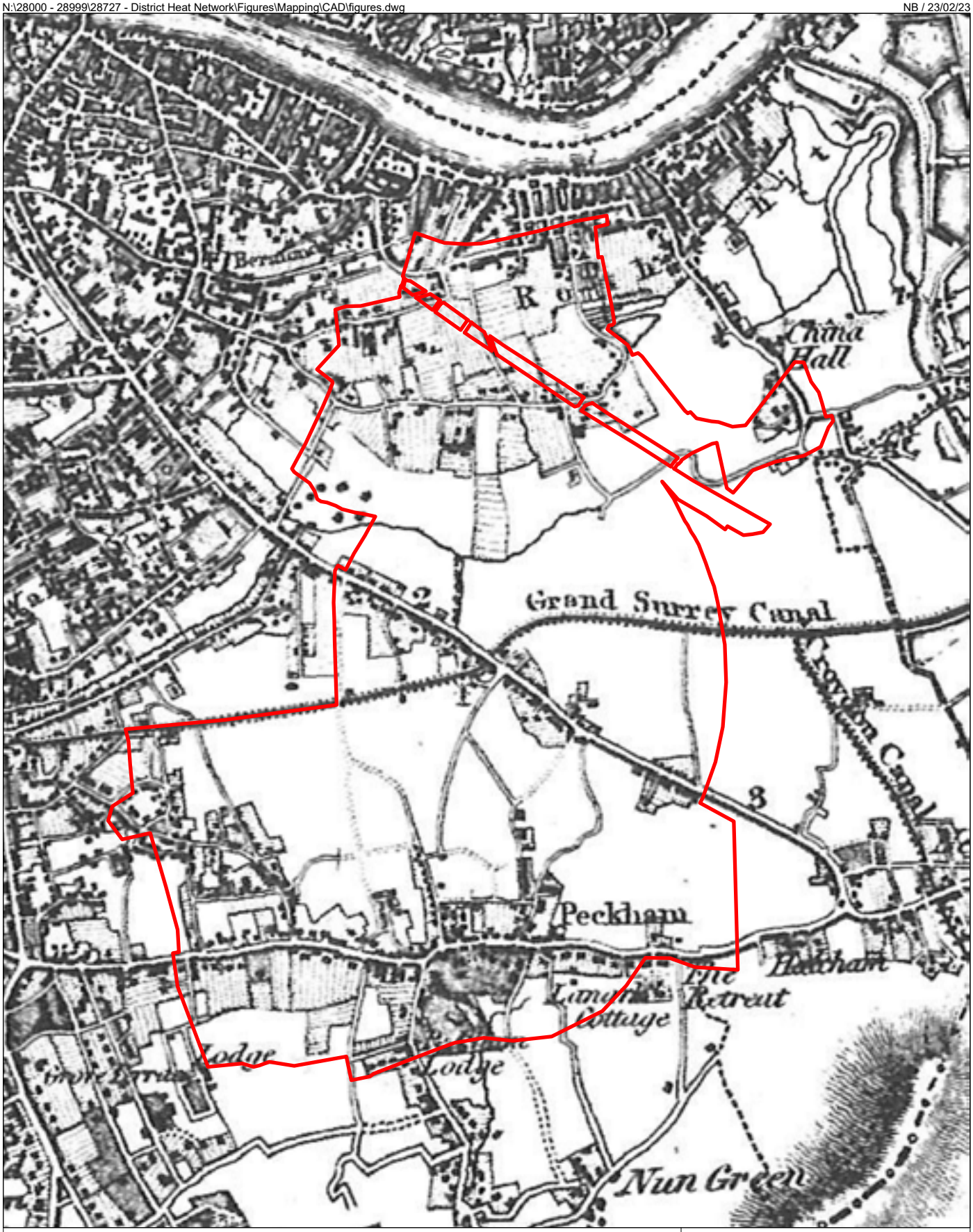
Figure 7

1800 Milne Land Use Map of London



Site Boundary (approximate)

N

0 200 400m

Scale at A4: 1:20,000 (approximate)

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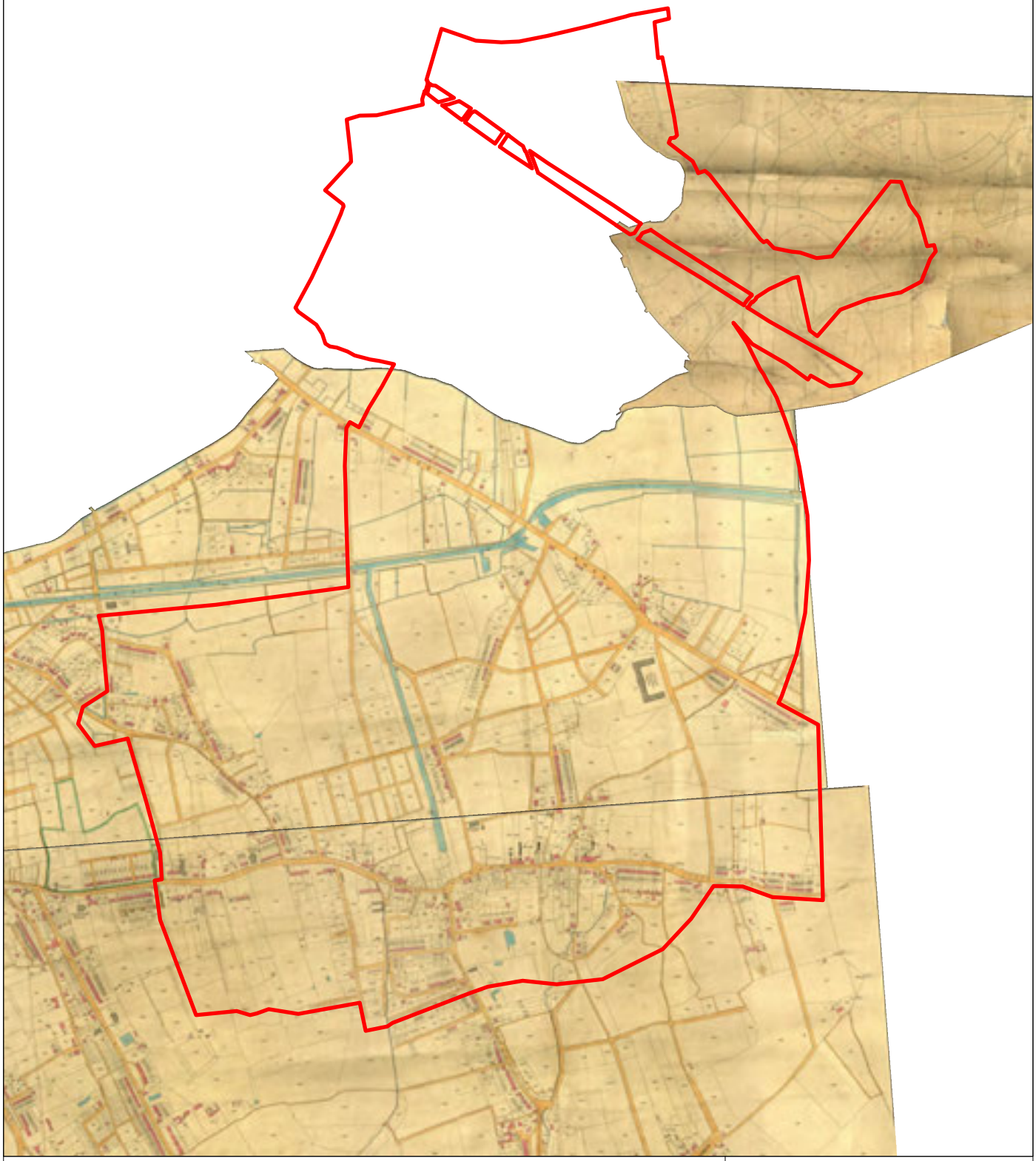
Figure 8

1823 Greenwood Map of Surrey



Site Boundary

N

0 200 400m

Scale at A4: 1:15,000

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Figure 9
1842 Camberwell Tithe Map and 1844 St Mary Rotherhithe Tithe Map

Site Boundary

N

0 200 400m

Scale at A4: 1:15,000

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Figure 10

1873 Ordnance Survey Map

Site Boundary

N

0 200 400m

Scale at A4: 1:15,000

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Figure 11

1939-1945 LCC Bomb Damage Map and Key

Site Boundary

N

0 200 400m

Scale at A4: 1:15,000

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Figure 12

1945 Google Earth Image

Site Boundary

N

0 200 400m

Scale at A4: 1:15,000

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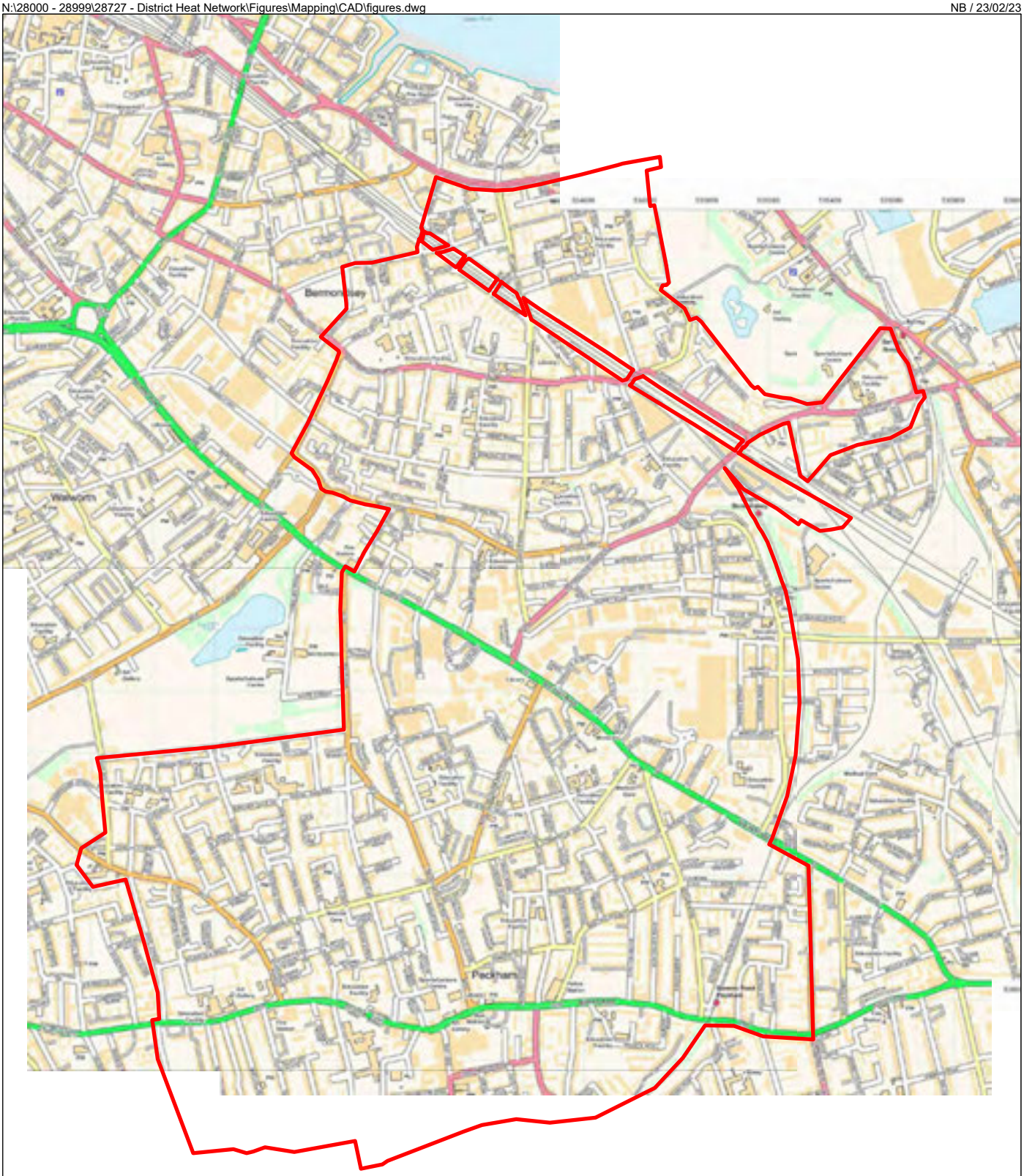
Figure 13

1948 Ordnance Survey Map



Site Boundary

N

0 200 400m

Scale at A4: 1:15,000

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Figure 14

2014-2020 Ordnance Survey Map

Site Boundary

N

0 200 400m

Scale at A4: 1:15,000

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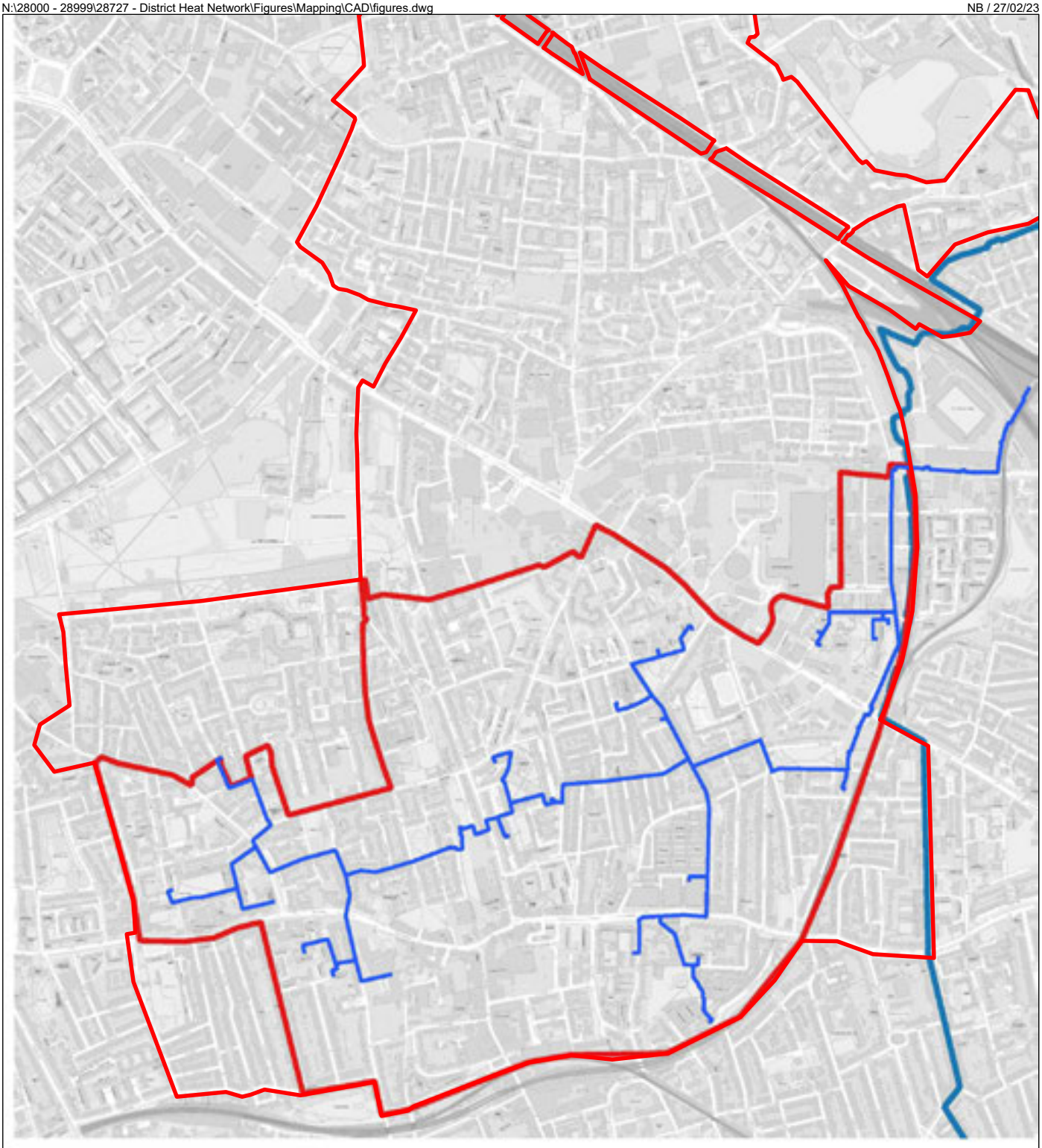
Figure 15

2021 Google Earth Image



Key

Proposed Primary Network

SELCHP Facility

Site Boundary

N

0 200 400m

Scale at A4: 1:15,000

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Figure 16

Routes of District Heating Network

PLATES

Plate 1: Mercury Way, at the junction with Surrey Canal Road just in the London Borough of Lewisham. At the start of the District Heat Network walkover survey route from SELCHP (South East London Combined Heat and Power) in Lewisham to Peckham Square and then from Queen's Road, Peckham to the Cossall Estate on 25th January 2023. The Brief required that the assessment included a walkover survey of the routes proposed for the major engineering works to install the connections. Particularly the walkover noted elements of street furniture of potential interest that may be impacted by the excavation works, although only Plate 54 identified any surviving street furniture of note.

Plate 2: Bridge spanning the Grand Surrey Canal, Surrey Canal Road at the junction of Mercury Way in Lewisham, the Grand Surrey Canal ran along the route of Surrey Canal Road.

Plate 3: Looking West along Surrey Canal Road, the canal line is still legible in the modern landscape.

Plate 4: Looking East along Surrey Canal Road, the modern Rail Bridge spanning Surrey Canal Road.

Plate 5: Looking North from Surrey Canal Road towards Millwall Football Club in Lewisham

Plate 6: Warehouses surviving on the southern side of the Grand Surrey Canal on Surrey Canal Road, a reminder of the industrial heritage of the area.

Plate 7: Elements of potential canalside architecture surviving by the Railway Bridge on Surrey Canal Road

Plate 8: The westernmost railway bridge over Surrey Canal Road, the northern edge of the former canal can be seen in the raised bank to the left of the image.

Plate 9: Surrey Canal Road looking East from the junction with Ilderton Road, the current ground surface falls away to the east, as the historic canal was bridged at this point.

Plate 10: Junction of Surrey Canal Road and Ilderton Road, looking northeast, the rising ground reflects the rise for the bridge.

Plate 11: Looking South from the bridge at the junction of Surrey Canal Road and Ilderton Road

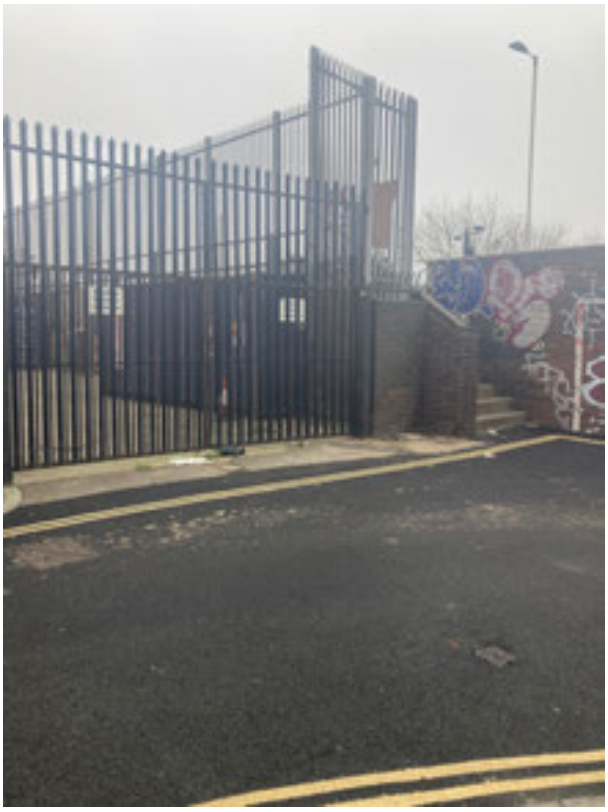


Plate 12: View having descended the stairs from the much higher level of Ilderton Road down to Record Street. The change in ground level is at least a 2m drop down from Ilderton Road (right).

Plate 13: The storage warehouses fronting Ilderton Street, viewed from the entrance on Record Street. Distinct phases of rebuild of the walling to the right is evident. The image shows the difference in height from the Ilderton Road level.

Plate 14: Looking East along Record Street towards Ilderton Road

Plate 15: Looking South down Hatcham Road from Record Street, the surface morphology is generally flat in this area. New build developments are evident along Hatcham Road and Ilderton Road. It is possible that Hatcham Road could retain elements of the prehistoric and palaeoenvironment of the Late Glacial Bermondsey Lake.

Plate 16: The Penarth Centre on the west side of Hatcham Road, a two storey light industrial facility probably constructed in the late 1950s with brick and block elevations around a reinforced concrete frame. Note the original windows and door elements.

Plate 17: Argo House on the East side of Hatcham Road, at the junction with Penarth Street, looking South.

Plate 18: Looking North up Hatcham Road from Manor Grove

Plate 19: View looking South from the southern end of Hatcham Road, towards the northern side of the Tustin Estate on Manor Grove. The site shown centrally has been recently evaluated (AOC) and no archaeological finds or features were recovered, but a mass of subterranean utilities were encountered (Chris Constable, pers comm).

Plate 20: Looking West on Manor Grove, back towards the Tustin Estate, beside the Christ the King Chapel

Plate 21: Looking South along Ilderton Road by Canterbury Industrial Estate

Plate 22: New Student Accommodation on the east side of Ilderton Road

Plate 23: The Towers of the Tustin Estate on the east side of Ilderton Road

Plate 24: View southwest to new development on the Old Kent Road from Ilderton Road, again no significant archaeological finds or features were recovered from this site (RPS), which had been subject to below ground disturbance. The site lies on the projected aligned of the Roman road of Watling Street.

Plate 25: The junction of Ilderton Road and the Old Kent Road, looking East

Plate 26: Looking North back across the Old Kent Road (A2) towards Ilderton Street

Plate 27: The entrance to Brimmington Park on the Old Kent Road, with a locally listed period building visible in the background

Plate 28: Area of pavement by Brimmington Park where the DHN will cross to enter Brimmington Park. Any of the locations shown on Plates 28 to 31 could cross the projected line of the Roman road of Watling Street. It may be possible to record a section across the Roman road in the DHN trenching works. It is also known that Brimmington Park was formed after post-war clearance and the archaeological resource may have been removed during these works. A watching brief should be carefully maintained in this area of the DHN scheme. Looking West.

Plate 29: Approximate route of DHN through Brimmington Park looking South

Plate 30: Approximate route of the DNH pipework trench looking South, the projected route of the Roman Road tis in the pavemented area to the right of this point.

Plate 31: The foreground shows the area where the projected route of Watling Street suggests that the road could cross Brimmington Park, running on an east-west, alignment. View looking South.

Plate 32: Protected Street Art in Brimmington Park

Plate 33: The route of the DHN pipes through Brimmington Park, East of Clifton Crescent

Plate 34: The route South to Culmore Road

Plate 35: Route of the DHN, crossing Culmore Road and garden areas to the rear of Roman Way to connect with the Boiler House beyond

Plate 36: Looking West along Culmore Road, the former Carlton Tavern is just to the right of the image. Again the topography is generally level.

Plate 37: The former Carlton Tavern

Plate 38: Looking West along Culmore Road

Plate 39: General View of Brimmington Park by Culmore Road, not impacted by the DHN pipes in this area

Plate 40: The junction of Culmore Road and Asylum Road, the Asylum Tavern is to the left. The alignment of the secondary Roman road running from Watling Street on a projected course towards Lewes, could potentially cross Culmore Road in this general location, a watching brief should be maintained here to see if a section across this secondary road can be recorded.

Plate 41: The Asylum Tavern

Plate 42: Probable route of the DHN pipes heading North along Asylum Road. There is Roman archaeology in this area and the potential that some evidence of a secondary Roman Road, running from the Old Kent Road on the eastern side of Asylum Road to this approximate point

Plate 43: Christchurch Vicarage on Asylum Road a source of evidence for Roman finds in this area (East side)

Plate 44: Route along Studholme Street, note Ghost Sign

Plate 45: Looking West along Studholme Street, this area shows the post-1830s development of Peckham streets in a more geometric layout.

Plate 46: Albert Way off Studholme Street, approximate location of the course of the River Peck

Plate 47: No. 22 Albert Way, reported findspot of Roman archaeology.

Plate 48: Rear of Caroline Gardens (Asylum) on Albert Way, set piece architecture and the almshouses of the Licensed Victuallers Charity.

Plate 49: Looking West along Studholme Street from Naylor Road

Plate 50: The DHN Route crosses Naylor Road and extends West down Fenham Street

Plate 51: Fenham Road looking West

Plate 52: Fenham Road looking West from the junction with Friary Road

Plate 53: Route of DHN pipes south down Furley Road, to join the Boiler House at the Bells Gardens Estate

Plate 54: Small area of cobbled street surviving at the entrance to the Bells Gardens Estate. This was the only patch of historic street layout or street furniture surviving on the walkover route.

Plate 55: Entrance to the Boiler House for the DHN pipeworks at Bells Gardens Estate.

Plate 56: Route of the DHN network through the Bells Gardens Estate

Plate 57: Route running West through Bells Gardens, Wilmot Close

Plate 58: Further west alongside Wilmot Close and looking towards Peckham Hill Street some changes in levels is evident here, but relate solely to the layout of the estate in the 1950s and are not archaeologically significant.

Plate 59: Looking South towards the Bells Gardens 2 Boiler House

Plate 60: Peckham Hill Street looking North, the junction with Bells Gardens Estate is to the right.

Plate 61: Course of the DNH along Bonar Street, looking West towards Surrey Canal Walk

Plate 62: Route of the DHN westwards on Bonar Street to Surrey Canal Walk. The building on the left, sits on the site of Peckham Manor, Excavations here revealed no remains of the manor except some agricultural evidence, as the area had been extensively damaged by the large concrete foundation for Eagle Wharf and associated warehouses beside the canal.

Plate 63: Looking East from Surrey Canal Walk to the change in height on Bonar Street at the historic location of Eagle Wharf beside the Grand Surrey Canal, The wall may be original architecture surviving from the canal.

Plate 64: Route of the DHN along Surrey Canal Walk

Plate 65: Exit to the connection by Lisford Street

Plate 66: Elements of Canal architecture on Surrey Canal Walk

Plate 67: Cossall Park Section, Queen's Road from Wood's Road looking East

Plate 68: Early listed architecture at 10 Peckham High Street

Plate 69: Early listed architectrure at 4 Wood's Road

Plate 70: The DHN route down Wood's Road, looking North from the School

Plate 71: Looking East on Wood's Road, with Cossall Park to the right

Plate 72: The route through Cossall Park looking North to the School

Plate 73: The route through Cossall Park looking South to the Cossall Estate

Plate 74: Changes in height of the route through Cossall Park

Plate 75: The DHN connection to the Boiler House on the Cossall Estate

Plate 76: Connection at the Cossall Estate Boiler House

Plate 77: Changes in elevation in the area of the Boiler House

Plate 78: View to the Railway Bridge outside the Boiler House, looking Southeast

APPENDICES

Southwark 2.0 District Heating Network

Project Overview

Southwark Council

Date. 26.09.22

Version: 03

Prepared By: Joao Sousa

1.0 Introduction

In 2013, Veolia and Southwark Council delivered the SELCHP district heating network, for the supply of low carbon heat to a number of council housing estates, comprising nearly 2,700 properties. Having now proven the concept with 9 years of operation, the Council, with Veolia as the delivery partner, wishes to extend the existing agreement to include additional locations around SELCHP, reducing the reliance on natural gas or oil boilers while reducing emissions of CO_2 and NOx gases.

Figure 1. Existing (left) and Proposed (right) SELCHP District Heating Network

Many of the social housing stock that Southwark Council own and maintain achieve their space heating and hot water requirements through a centralised community heating network that uses natural/oil gas-fired boilers, located at boiler houses, as the primary source of heat. In most cases, the boiler houses throughout the borough were constructed and commissioned alongside the housing blocks themselves, many of which were erected in the 1960s and 1970s. The aging asset base is nearing the end of its serviceable life and in need of a major overhaul in order to return it to a high standard of operation, improving reliability and efficiency of these assets.

Integrating these existing boiler houses into a district heating network that utilises waste heat from SELCHP ERF provides a pathway to net-zero carbon for the borough, as well as building a resilient system for thousands of residences within Southwark. During the network integration, there will be scope to convert a number of the boiler houses into primary heat supply backup systems, which will ensure the security of a continuous supply of heat throughout the year and added flexibility of the system to achieve peak demands during the coldest winter months. In the future, as new low-carbon technologies become commercially viable, those systems may be converted in order to further drive down the carbon intensity of the network.

As part of a low carbon energy solution, Veolia is seeking to deliver a strategic district heating network towards North Peckham. London's heat hierarchy places the recovery of waste heat as a favoured solution to all connections (i.e. old or new). The joint efforts over the past years between the Council, GLA and Veolia have produced a new strategic plan supporting the future growth of the system.

Veolia as per Southwark Council expectation, is applying for external funding to underpin the viability of the scheme without which it won't be commercialised. Such financial support will be imperative to make it competitive when compared to the counterfactual and, to overcome the high risks and high capital costs. To accelerate the delivery of the proposed expansion project, Veolia aims to vary the existing agreements signed in 2013 between Veolia, London Borough of Southwark and SELCHP. The deed of variation will make the project commercially and legally far less complex.

2.0 The Contractor

Veolia Group

Veolia ES (UK) Limited is part of a wider Veolia group, the global leader in optimised resource management. With nearly 169,000 employees worldwide, the Group designs and provides water, waste and energy management solutions that contribute to the sustainable development of communities and industries. Through its three complementary business activities, Veolia helps to develop access to resources, preserve available resources, and to replenish them.

Innovation is at the core of Veolia's strategy and culture towards building and shaping the circular economy: to manufacture green products, to produce green energy and to develop bespoke solutions for our clients.

As part of the London Energy Strategy, Veolia has been investing in the expansion of its currently successful District Heating Network from the energy from waste facility located at South East London. Working in collaboration with either the Greater London Authority and London Borough of Southwark has shown to be crucial to overcome some of the obstacles but also, to think strategically on the energy strategy for the areas around the existing Energy from Waste plant - SELCHP.

South East London Combined Heat and Power Limited (SELCHP Ltd.)

SELCHP Ltd owns the Energy from Waste facility from which the heat for the project will be extracted and where the main energy centre will be located.

In 1986, faced with the increasing scarcity and environmental problems of landfill, the London Boroughs of Lewisham, Southwark and Greenwich came together to search for a realistic alternative. In 1988, they formed a Consortium - South East London Combined Heat and Power - from which SELCHP now takes its name.

The SELCHP facility was opened in 1994 and receives black bag waste from households and some businesses. Waste is tipped into a bunker, where a crane grabs it and places it into the feed hopper. It then drops down a feed chute onto a sloped grate, where it is constantly turned to allow all combustion phases (such as drying, ignition and combustion itself) to happen simultaneously and a constant high temperature to be maintained.

Figure 2. SELCHP facility where the main energy source is located

In 2014 working in partnership with the London Borough of Southwark a plan was conceived to supply 2,700 Southwark properties on a 5km pipework system with heat and hot water. This scheme has proven very valuable in assisting the council's fight against fuel poverty by making heat cheaper than gas and providing low carbon heat. The heating provided to the London Borough of Southwark by SELCHP has displaced gas that was previously burned to provide heating to residents and now no

longer needs to be used, which contributes significantly towards CO2 emissions reduction. The system has cut approximately 7,700 tonnes of CO2 per year.

Veolia ES SELCHP Ltd

A wholly owned subsidiary of Veolia which is contracted by SELCHP Ltd to operate and maintain the Energy from Waste plant, supply heat and maintain all equipment to ensure SELCHP Ltd complies with all obligations under its heat supply agreements. Similarly Veolia ES Southwark Ltd as the main entity in contract with London Borough of Southwark has appointed Veolia ES SELCHP Ltd to conduct all contractual management activities and is fully responsible for the district heating network at SELCHP.

3.0 The Scheme

3.1 Strategy

The new scheme sees an extension of the current network, with a priority to supply Heat from SELCHP to a mix of off-takers among which could be: a) public estates b) schools and c) new developments.

Heat will be extracted from SELCHP Energy from Waste plant in the form of steam which will then be transferred to the hot water closed loop via heat exchangers. The hot water will then circulate through a primary District Heating Network (DHN) supplying heat to each boiler house and plant room via a plate heat exchanger arrangement. Heat will then leave those energy transfer centres through secondary networks where the responsibilities of the Veolia terminates.

3.1.1 SELCHP Modifications

The SELCHP Interface has been optimised to allow the extraction of steam from the turbine, considering the initial design of the turbine to be CHP ready. The existing SELCHP interface at the Facility has been designed for 30 MW and where further equipment will be required to achieve the new peak demands of the proposed scheme. Veolia has developed two concept designs to increase its current capacity up to 60 MW by recovering waste heat from the facility either by installing an absorption heat pump and or by adding a 10MW plate heat exchanger. Such modifications are project led and are only required once peaks exceed the plant current capacity.

3.1.2 Connection to Public Estates and Schools

Boiler Houses currently provide heating and hot water via a communal heating network using gas- or oil-boilers. Boiler houses along the proposed network will be modified and with the addition of heat exchangers, they will be able to transfer heat from the Primary to the Secondary Network. Some of the boilers will be kept in these boiler houses to operate only when heat from SELCHP is unavailable (known as the Fall Back Plan). Buildings where there are no boilers present, or boilers are to be removed, are to be identified as plant rooms. Such plant rooms will contain the same equipment (heat exchangers, pumps, etc) without the presence of backup boilers.

Boiler houses in the public estates and schools are fully owned and operated by Southwark Council. Table 01 shows the boiler houses that should be considered as part of the DHN expansion scheme and can be located in Figure03.

Table 01. Main connections considered under base case scenario

Phase	Connection ID.	Connection name	Connection type	No of homes	SQM
Phase 1	E11	Tustin Estate	Public Estate	136	
Phase 1	E01	Brimmington Estate	Public Estate	672	

Phase 2	E05	Ledbury Estate	Public Estate	224	
Phase 2	S02	Camelot Primary School	School		3,500
Phase 2	E07	Hoyland Estate	Public Estate	16	
Phase 2	E04	Acorn Estate	Public Estate	266	
Phase 2	E03	Clifton Estate	Public Estate	60	
Phase 2	S11	John Donne School	School		5,100
Phase 2	E02	Cossall Estate	Public Estate	390	
Phase 2	E06	Bells Garden Estate	Public Estate	443	
Phase 2	S10	Harris Academy	School		25,000
Phase 2	E10	Pelican Estate	Public Estate	140	
Phase 2	E09	Sceaux Gardens Estate	Public Estate	482	
Phase 2	S09	Oliver Goldsmith Primary School	School		4,900
Phase 2	S06	Tuke School and Angel Oak Academy	School		31,000
Phase 2	E08	North Peckham Estate	Public Estate	848	
TOTALS				3,525	69,500

Other connection points could be considered or added during commercialization once they are identified.

Figure 3. District Heating Network Expansion towards North Peckham

3.1.3 Connection to new developments

There are several new developments within Old Kent Road (OKR) that may connect to the propose extension (not included in figure 3 as should be seen in Old Kent Road website).

3.2 Resilience Strategy

As part of the current Heat Supply Agreement design arrangement, the design will accommodate the provision of Fall Back and Fail Safe Plans to ensure resilience of the overall system. Figure 03 shows the network overview with the backup options.

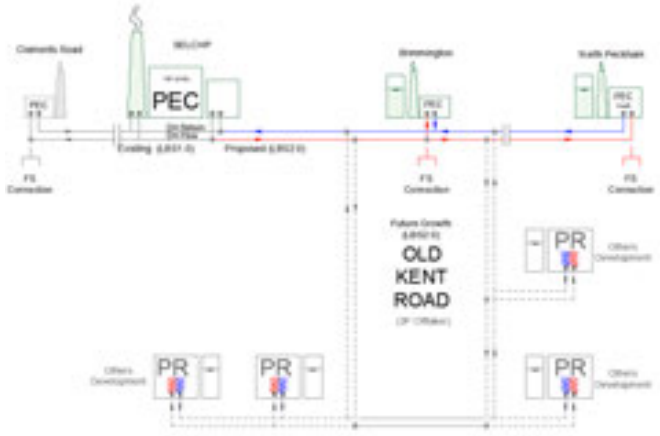
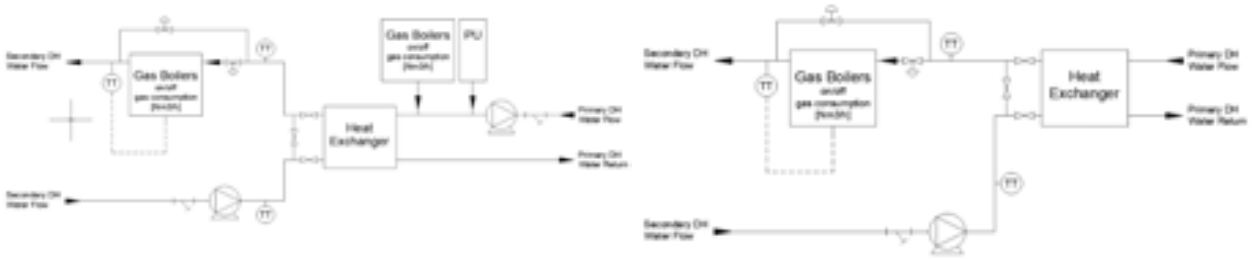


Figure 4. District Heating Network Main Energy Centre and backup units

3.2.1 Fall Back Plan

The Fall Back (FB) Plan provides heat to the primary network through backup systems (boilers) in the event of inability to supply heat from SELCHP. Brimmington and North Peckham Boiler Houses will provide 'fall back' heat to the Primary Network. These systems will be commissioned with several operational modes working in conjunction with SELCHP plant.



3.2.2 Fail Safe Plan

As a further resilience, the Fail Safe (FS) Plan will be actioned in the event of inability to supply Heat from SELCHP or from the Fall Back Plan. The Fail Safe Plan is the temporary provision of Heat by the use of portable boilers.

3.3 Programme

The delivery of the scheme started in Q1-2021 with a HNIP application. After a successful funding application, Veolia started in a commercialisation phase envisaged to terminate in March 2023. Delays in design expect commercialisation to finish end of July'23. With completion of commercialisation having all contracts signed, Veolia expects to start construction immediately after in August 2023 terminating 2 years later with the commissioning of the entire Southwark 2.0 system. The table below presents the key dates of the construction programme.

Table 8. Key project milestones

Timeline	Date
SELCHP Approval in Proceed	31 Oct. 2022
SELCHP Agree HoT's for Southwark 2.0	31 Dec. 2022
Draft of the Steam and O&M Agreements deed of variations	31 Mar. 2023
Execution of the Heat Supply Agreement with LBoSouthwark including Deed of Variation of the Steam and O&M Agreement	19 Jul. 2023
Construction commencement	01 Aug. 2023
Heat on Phase 1	31 Oct. 2024
Heat On Phase 2	31 Oct 2025
Full Commissioning	31 Dec. 2025

4.0 Delivery Structure and Contractual Arrangements

Internal and external legal counsel has confirmed that the contractual arrangement between Veolia ES Southwark Limited and London Borough of Southwark for the proposed project will be through a deed of variation of the existing Heat Supply Agreement signed 14 June 2013.

Similar to the current agreement, the variation will include the full delivery of construction works and the provision of heat supply services over a 25-year term. Veolia will therefore be responsible for the design, specification, procurement, funding, construction, commissioning, setting to work and on-going operation, maintenance and life cycle replacement of the entire system.

4.1 Delivery of Works

Veolia ES Southwark Ltd as the main entity entering in agreement with Southwark Council will design, construct, operate and maintain, through sub-contract arrangements with Veolia ES SELCHP Ltd, the energy centre, the heat network and all heat transfer stations downstream of SELCHP.

4.1.1 Construction

The construction of most of the works will be undertaken by Veolia's subsidiary companies such as Eneteq and Veolia Engineering Services following their successful tender for the works.

4.1.2 Ownership

The boiler houses will remain in the ownership of the Council while operation passes to Veolia for a defined term, along with the ownership of the pipework assets, through an agreement, to operate and maintain during the contract term. The equipment installed at SELCHP Interface will be owned by Veolia and or SELCHP Ltd depending on the design arrangements and criticality.

4.1.3 Operation and Maintenance (O&M)

Veolia ES SELCHP Ltd as the management subsidiary appointed by Veolia ES Southwark Ltd will be contracted to operate and maintain either the Energy Recovery Facility DH related equipment, the primary network, and all boiler houses and plant rooms. This will fall under the Pipe Company main duties.

The agreements with the Council will grant access rights to the facility and to the boiler houses/plant rooms to allow VES SELCHP to comply with its obligations under the Heat Supply Agreement.

The maintenance of the SELCHP energy centre will be covered by a variation of the existing steam agreement and O&M agreement where VES SELCHP.

Schedule 1

Typical Trench Details

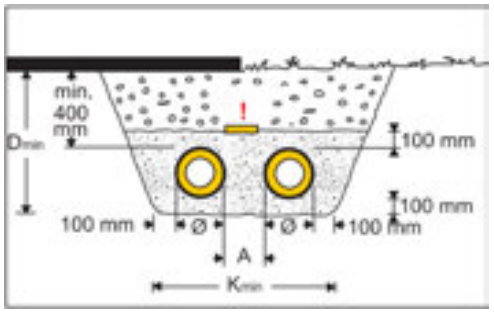


Figure 1. Single pipe installation between DN50 (140mm) to DN400 (OD 630mm)

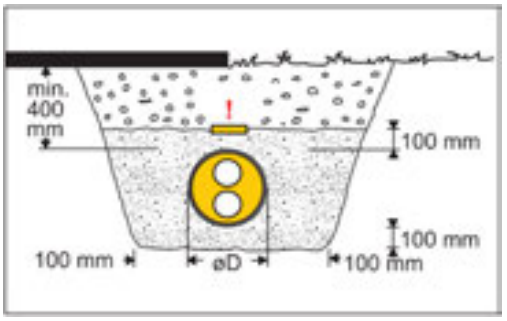


Figure 2. Twin pipe installation up to DN200 (OD 630mm)

Typical Valve Chamber

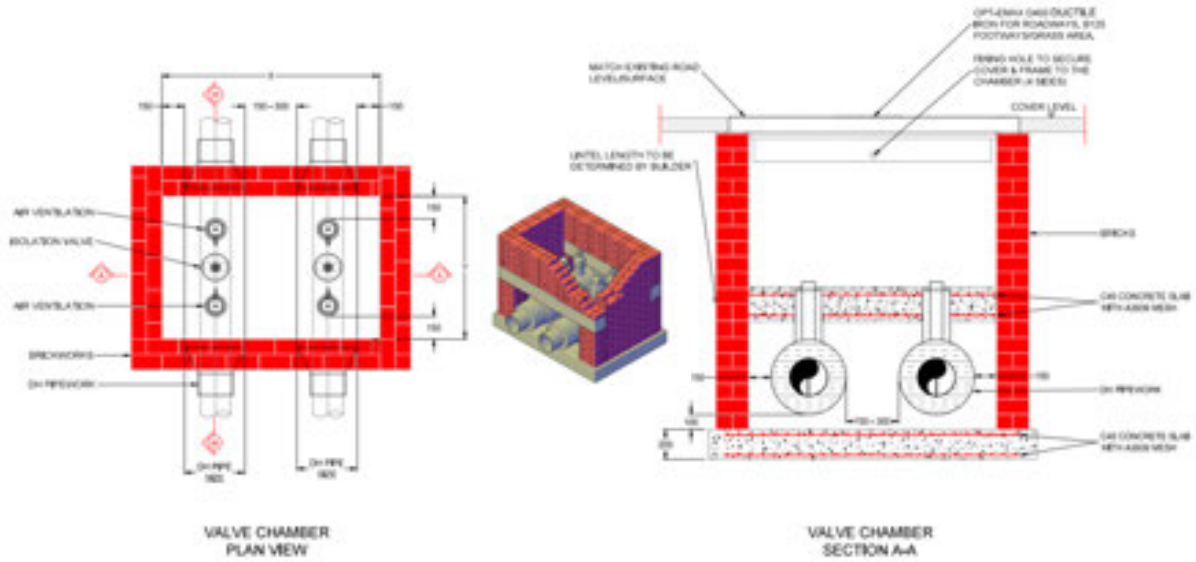


Figure 3. Typical valve chamber

Typical Communications Chamber

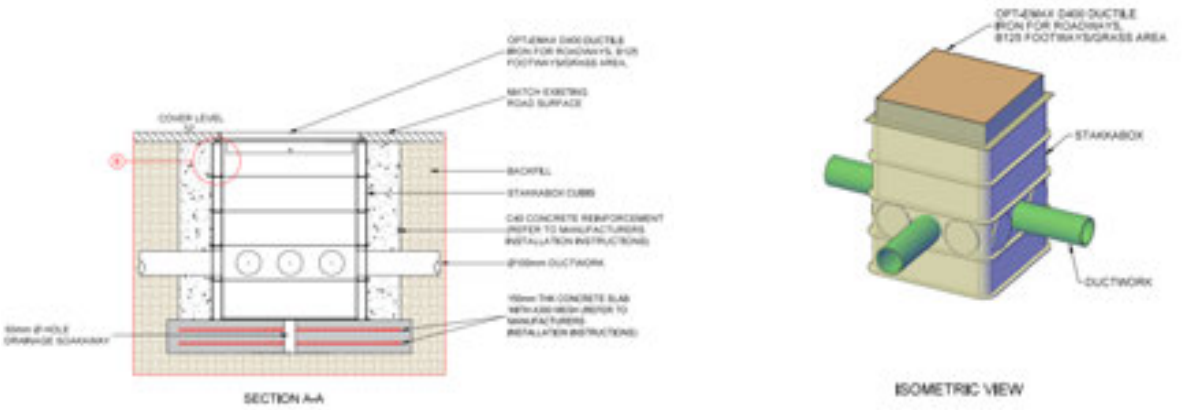


Figure 4. Typical communications chamber (fibre cables connected between boiler houses)

Construction space allowance

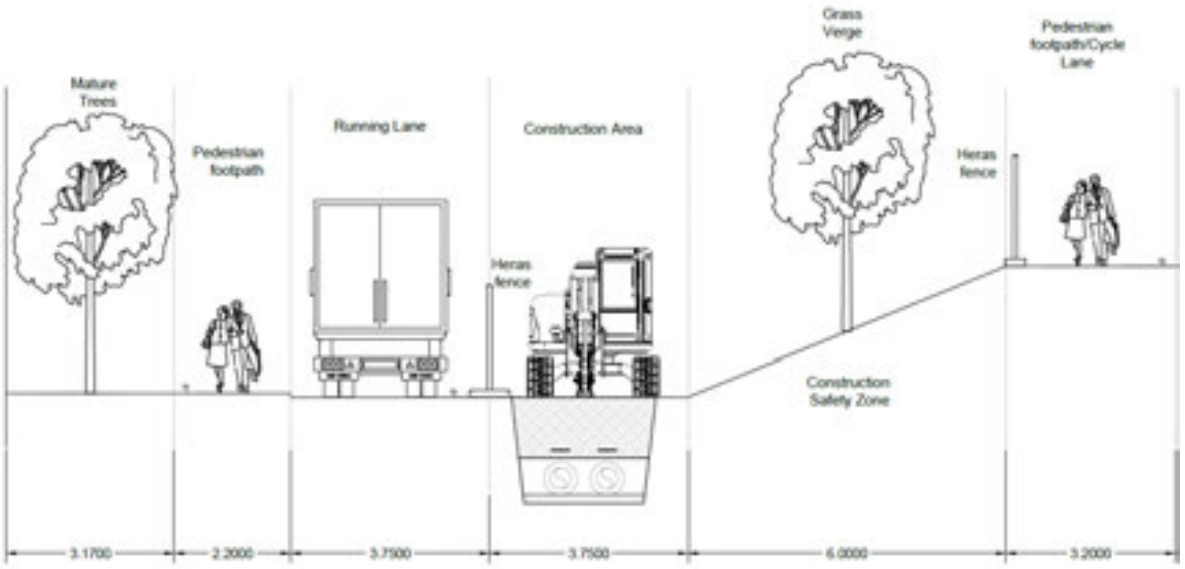


Figure 5. Proposed elevation view of the construction along Surrey Canal Road (space allowance will depend of each section, traffic management requirements and pedestrian/cyclists lanes)

Archaeological Brief: desk-based assessment to support the application for a Local Development Order for the Southwark District Heating System.

Planning and Development Background

The purpose of this desk-based assessment is to inform archaeological responses to the impacts of the proposed District Heating System. The Objectives of the district heating system are to enable development sites in the Old Kent Road and North Peckham area to connect to combined heat and power linked to the SELCHP plant in Lewisham. To enable the efficient installation of this system Southwark Council are discussing an application for a Local Development Order to permit the necessary development works to be undertaken, and for this order to aid the management of the historic archaeological resource within the designated area. The desk-based assessment is to provide a robust basis for a written scheme of investigation that will provide for the archaeological response to the different impacts of the scheme.

The CIfA define a desk-based assessment as:

"*…a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage assets and, in England, the nature, extent and quality of the known or potential archaeological, historic, architectural and artistic interest. Significance is to be judged in a local, regional, national or international context as appropriate."* CIfA (December 2014).

Stages one and two of this project include the construction of underground connections from SELCHP south, broadly in alignment with Ilderton Road, and south across the Old Kent Road, please see attached plan. These works consist of buried pipework constructed in open cut trenches, service access, monitoring shafts and utilities cabinets, please see attached drawings showing the construction of the scheme. At present, due to ongoing design works the exact depths and nature of associated impacts cannot be determined; the work on the desk-based assessment will need to progress alongside the design of the scheme due to the requirements of the timetable.

More details about the project can be found in the attached document – Southwark 2.0 District Heating Network Project Overview. Please note the diagrams of the trenches on page 9 do not reflect accurate scale of the trenches.

The Local Development Order will grant permission for the construction of a district heating system within the area in the attached map. The development permitted will mainly comprise the laying of pipes, cables, wires below ground; street furniture, informational signage above ground; and other engineering works as required. Local

development orders can have attached conditions to secure an appropriate archaeological response which will be informed by archaeological documentation.

Policy, Standards and Guidance

The adoption of the Southwark Plan (2022) means policy P23 Archaeology is the basis for the development management of archaeology within the borough. Policy P21 details significant designated and non-designated heritage assets within the Borough. The London Plan (2021) provides regional policy in the form of policy HC1 Heritage Conservation and Growth. Section 16 of the National Planning Policy Framework provides the framework of national historic environment policies.

Standard and guidance for desk-based assessments are provided by the Chartered Institute for Archaeologists Standard and guidance for historic environment desk-based assessment (October 2020 https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf).

Guidance for Archaeological Projects in Greater London (April 2015) produced by GLAAS provides some advice for the production of desk-based assessments. This document is acknowledged to be far out of date and is currently being revised. It should be noted this document has limited relevance for Southwark in its present form.

Historic Environment Background

The area to be covered by this assessment is detailed in the attached map and supplied shape file. This includes a variety of archaeological landscapes within Southwark. Much of the area is included in Southwark's revised archaeological priority areas. The definition of these areas is very broad.

It must be noted that the majority of the pipework will be within roads, paths and open spaces. A number of the open spaces will be part of modern estates constructed on the site of earlier housing.

In very broad and general terms, much of North Peckham, south of the Old Kent Road, represents a 'new town' of the 1830s onwards with a long period of development during that century over what was formerly agricultural fields. Growing levels and changes of industry, severe bombing and, in the post-war period, the construction of new estates, open spaces and larger scale industry characterises much of this area. In more recent years further change is happening with the redevelopment of many former industrial sites as mixed use developments.

The major connection into Southwark from SELCHP in Lewisham is along Surrey Canal Road. This road runs along the line of the former Grand Surrey Canal. Works within the road may reveal remains of the canal structure.

Ilderton Road, north of the Old Kent Road generally develops with the construction of the Grand Surrey Canal, as a mixed area of small-scale, largely secondary industry and housing. Over time the scale of industry increases and changes, displacing the housing and associated services, such as chapels, washhouses and laundries. Following bomb damage in the post war period large areas of housing were

redeveloped as estates, which, in part are now beginning to undergo redevelopment and larger-scale industrial sites are now changing use to mixed use developments.

North of the Old Kent Road there are significant archaeological finds of the Bronze Age in and around Bramcote Grove, where a trackway has been excavated indicating investment in the exploitation of the watery prehistoric landscape of this area and likely settlement on higher, dryer ground. In other locations to the north of the Old Kent Road, in the former APZ known as the Bermondsey Lake there finds of similar trackways of platforms have been identified.

The Old Kent Road, and its immediate vicinity, especially the likely course of Roman Watling Street, most probably to the south of the modern alignment, has the potential for significant roman archaeology in the form of the fabric of the road itself, roadside settlement, possibly burials and evidence for land management and exploitation. We also do not understand the likely shift of the Old Kent Road from the Watling Street, or Roman, alignment to the modern alignment, and when that happened.

Much of the area south of the modern Old Kent Road alignment is likely to be within field systems in use during the medieval and post medieval periods. Map evidence suggests a relatively complex sequence of development of agriculture in this area due to the watery landscape in and around the course of the River Peck with a mix of common fields and assarts. We do not have clear information about the formation and development of the field systems north of Peckham.

In the area of Asylum Road there is evidence for Roman settlement, the course of the River Peck and the projected line of the London to Lewes Roman Road. At some point this must meet Watling Street, the relationship between this junction and the line of the River Peck may mean there is the potential for the site of a Roman bridge or river crossing to be found.

At present our understanding of the construction impacts from this proposal are limited. Engagement with the design team will be necessary to understand potential impacts upon geoarchaeological remains and the potential for preservation of such remains under construction works.

These points represent very broad objectives for the historic environment assessment.

Whilst many of these points discuss the industry and settlement most of the major construction will be undertaken in road corridors therefore impacts are likely to be very different.

Objectives

The primary objective of this work is to produce a desk-based assessment to inform approaches to the recording and understanding of buried archaeological to be detailed in a Written Scheme of Investigation. As the design of the scheme develops the objective is for the desk-based assessment to provide detailed baseline information to inform the written scheme of investigation. The objective is for both documents to be attached to the Local Development Order and their use enforced by conditions attached to the order.

Due to the scale of the development area covered in this document there is likely to be public interest in the potential archaeology of the area. Full consideration should be given to ensuring this document is written so major points that may be of public interest can be understood by non-specialists.

Specific Archaeological Requirements

This project will be undertaken by a suitably qualified and experienced archaeological organisation working to the bylaws and standards and guidance of the Chartered Institute for Archaeologists. The organisation should be able to demonstrate a successful track-record of archaeological work within Southwark or adjacent south-London Boroughs.

A search of the GLHER should be obtained based upon the boundary of the LDO area. Whilst this is significantly more restricted that generally requested for this part of Southwark thought and consideration should be applied to known archaeology just outside the area, such as the timber trackway at Bramcote Grove. This document should not simply be a thoughtless narrative of the HER data found in this search; simply reciting HER points will not provide an adequate or acceptable document.

The appointed archaeologist should undertake a walkover survey of the routes proposed for the major engineering works to install the connections. Particularly this should note elements of street furniture of potential interest that may be impacted by the excavation works

The purpose of this assessment is to identify locations of potential archaeological significance within the area of the designed network to enable the targeting of archaeological resources at the areas of significance and greatest potential impact from the works within the designed scheme. These conclusions will then inform responses to be detailed in a WSI. This point should be carefully considered by the archaeologists working on this project.

Early in the project planning stage of the desk-based assessment a meeting will be arranged with the Borough Archaeologist of Southwark to discuss what construction information has been obtained and detail of the archaeological background. The borough archaeologist is happy to be consulted, as necessary during this project. Before the final submission of a completed document a Word draft should be submitted for comment with accompanying illustration.

Public Engagement

Whilst this document is a desk-based assessment, the assessment may identify areas or themes that may be of potential public interest, such as the fabric of Roman roads or potential prehistoric evidence in the form of causeways, for example. The desk-based assessment should identify potential locations to inform the production of the WSI to plan for such engagement.

Sources of Data

The following sources represents minimum requirements, and in no way should limit the commissioned archaeologists work.

Archaeological Archives

Greater London Historic Environment Record

Archaeology data service for relevant fieldwork-based reports.

Relevant borehole data. It should be noted much of the construction will be within roads and paths so whilst existing services will have an impact, survival of deposits is probably less predictable than in development sites.

Southwark geology mapping, this is a layer available at maps.southwark.gov.uk. If you open the map system to the default page, and at the top right there is a label for 'Map Configuration', it will probably read 'default' as you first open the system, click here and scroll down to Southwark Geology. This dataset appears to be finer grained than that available at the BGS. This material is sourced from Landmark.

Southwark Local List Consultation. Southwark Council is currently consulting the general public on the production of a local list of buildings that are important to the residents of Southwark. Details of the list can be found here https://www.southwark.gov.uk/planning-and-building-control/design-and-conservation/local-list-consultation

Key publications

These are some useful suggestions, in no way is this all that should be examined.

Blanch, William Hartnett 1875 Ye Parish of Camberwell: its history and antiquities. Google books link https://www.google.co.uk/books/edition/Ye_Parish_of_Cam%CC%83erwell/4T7EoVPGa00C?hl=en This is a somewhat idiosyncratic volume, it is remarkably similar to many other privately published histories of Camberwell at this time, I wonder if they just copy each other…, but Blanch reports detail of the section through Watling Street found during the construction of the Grand Surrey Canal.

Davis, Bernard F. The Roman Road from West Wickham to London. Surrey Archaeology Collections volume 43, pages 61-83 https://archaeologydataservice.ac.uk/library/browse/details.xhtml?recordId=3181716 . This article provides much of the evidence for the line of the London to Lewes Road, north of Queen's Road in Peckham. It also includes data on a possible alignment of Watling Street which requires comment.

Thomas, Christopher, Rackham, James, Barham, AJ, Brach, N, Glorgi, J, Goodburn, D, Lowe, J, Neil, V, Rackham, J and Smith, D, (and other authors) 1996, Bramcote Green, Bermondsey: A Bronze Age Trackway and Palaeoenvironmental Sequence. Proceedings of the Prehistoric Society Volume 62, Pages 221-253. Link via Cambridge Core https://www.cambridge.org/core/journals/proceedings-of-the-prehistoric-society/article/abs/bramcote-green-bermondsey-a-bronze-age-trackway-and-palaeoenvironmental-sequence/1C69FF0EA8905C6D3F8A4573E9636708 Whilst Bramcote Grove is to the north of the LDO area other platforms or trackways have been identified north of the Old Kent Road in the area of the former Bricklayers Arms depot.

Merriman, N. 1992. Predicting the unexpected: prehistoric sites recently discovered under alluvium in central London in Alluvial Archaeology in Britain eds. Needham. S, and Macklin. M, Oxbow Monograph 27. I have not read this article, but all other publications about the Bricklayers Arms prehistoric platform are a single line long and not particularly helpful, hopefully this is more instructive.

Sidell, Jane, Cotton, Jonathan, Rayner, Louise and Wheeler, Lucy, 2002. The Prehistory and Topography of Southwark and Lambeth. MoLAS Monograph 14. This volume provides an expansive background to the area around the Old Kent Road.

Documentary Archives

Desk-based assessments should include a statement detailing which archives and libraries have been examined to inform the study. The sources detailed here represent a minimum standard for documentary searches.

All desk-based assessments produced in Southwark should include a survey of documentation held by the Southwark Local Studies Library and Archive and the London Metropolitan Archive.

Informed searches should be made of the catalogues of the British Library and National Archives to see if useful material may be present.

The ownership of the property should be examined to see if it has been in the ownership of any institution or charity that holds archive material, or has placed such material in a public archive. Where a desk-based assessment covers a larger area, or includes numerous properties this type of research should be considered and targeted.

Libraries

The Southwark Local Studies Library contains many of the published reports on archaeological work in Southwark. Searches should also be made of the following publications at a minimum:

Surrey Archaeological Society Collections;

London and Middlesex Archaeological Society Transactions; and

The London Archaeologist.

The Guildhall Library contains a wealth of published information on the archaeology and local history of London.

British History Online https://www.british-history.ac.uk/ is an exceptionally useful resource for some obscure general London histories. It should be noted material for Southwark will come under sections on London and the south-east.

The Victoria County History of Surrey and The Place Names of Surrey both provide much useful background information. Various volumes of the Survey of London cover parts of north Southwark. Thomas Allen's 'A New and Complete History of the County of Surrey' dating from 1830 provides much contemporary information from the time it was written as well as historical material. Manning and Bray's 'History of

Surrey' remains a key source but appears to only be available in selected libraries due to its age.

For Camberwell Parish there are a number of local historians that provide coverage for the villages of Camberwell, Peckham and Dulwich. Many rewrite the same material. Most useful among these volumes is 'Ye Parish of Camberwell' by WH Blanch. Copies of this volume can be found on Google Books.

Mapping

The earliest maps of area include Rocque's 10 miles around London map. Copies can be seen on the Council's Web site. The Camberwell Parish Tithe Map should also be examined. Other manuscript maps dating to before the publication of ordnance survey maps should be examined. Many can be found on the Layers of London web site. Strip maps of coaching routes whilst not representative may well name significant locations on the Old Kent Road.

GAZETTEER Prehistoric GLHER Records

PRN	Mon_Name	Period
119785	21-35 Marborough Grove (Mesolithic Linear Feature)	[17262] Mesolithic
106663	Aylesham Centre (Late Bronze Age Findspot)	[17277] Prehistoric, [17265] Neolithic, [17366] Late Bronze Age, [17260] Roman, [17390] Early Medieval, [17296] Medieval
98192	Former Mawbey School (Bronze Age Buried Land Surface)	[17269] Bronze Age
148897	Varcoe Road (Middle Bronze Age Buried Land Surface)	[17328] Middle Bronze Age, [17366] Late Bronze Age
147410	551 Old Kent Road (Prehistoric Archaeological Feature)	[17277] Prehistoric, [17277] Prehistoric
115126	Storks Road (Prehistoric Findspot)	[17277] Prehistoric
143444	Verney Road (Bronze Age Trackway)	[17317] Early Mesolithic, [17366] Late Bronze Age, [17269] Bronze Age
144480	Sumner Road (Prehistoric Findspot)	[17277] Prehistoric
112536	Southwark Integrated Waste Management Facility (Prehistoric Buried Land Surface)	[17277] Prehistoric
108856	Peckham High Street (Prehistoric Findspot)	[17277] Prehistoric, [17369] Uncertain
109913	Peckham Park Road (Middle Palaeolithic Findspot)	[17281] Middle Palaeolithic
103201	Spa Road Sorting Office (Late Iron Age Ditch & Pit)	[17385] Late Iron Age, [17260] Roman, [17385] Late Iron Age, [17260] Roman
137788	Sharratt Street (Mesolithic Findspot)	[17262] Mesolithic, [17265] Neolithic
149290	South Eastern Gas Works (Middle Palaeolithic Findspot)	[17281] Middle Palaeolithic
104347	Coopers Road Estate (Prehistoric Buried Land Surface)	[17277] Prehistoric, [17277] Prehistoric
113710	Silwood Estate (Mesolithic Buried Land Surface)	[17262] Mesolithic, [17269] Bronze Age
151155	Silwood Street (Bronze Age Buried Land Surface)	[17269] Bronze Age
95593	Ossory Road (Prehistoric Water Channel)	[17277] Prehistoric
121588	Ossory Road (Mesolithic Findspot)	[17262] Mesolithic, [17356] Late Mesolithic, [17254] Middle Neolithic, [17265] Neolithic
108905	Bricklayers Arms Railway Yard Rolls Road (Neolithic Findspot, Findspot & Findspot)	[17277] Prehistoric, [17265] Neolithic
138188	Old Kent Road (Mesolithic Occupation Site)	[17262] Mesolithic, [17265] Neolithic
146641	Old Kent Road (Bronze Age Findspot)	[17269] Bronze Age
148747	1-83 Peckham High Street (Prehistoric Findspot, Findspot & Findspot)	[17277] Prehistoric
141643	Bricklayers Arms Railway Yard Rolls Road (Bronze Age Structure)	[17277] Prehistoric, [17269] Bronze Age
142703	Rolls Road (Late Bronze Age Buried Land Surface)	[17269] Bronze Age, [17366] Late Bronze Age
143313	Ossory Road (Prehistoric Ditch & Enclosure)	[17277] Prehistoric
99350	556-596 Old Kent Road (Neolithic Ditch)	[17277] Prehistoric, [17265] Neolithic

Roman HER Records

PRN	Mon_Name	Period
103201	Spa Road Sorting Office (Late Iron Age Ditch & Pit)	[17385] Late Iron Age, [17260] Roman, [17385] Late Iron Age, [17260] Roman
149975	The Cockneys (Roman Quarry & Gravel Pit)	[17260] Roman
121624	Camberwell Marshes (Roman Road & Causeway)	[17260] Roman
121961	Old Kent Road (Roman Road)	[17260] Roman
123753	115 Asylum Road (Roman Road)	[17260] Roman
126920	Creekside (Roman Road)	[17260] Roman
122511	Asylum Road (Roman Ditch)	[17260] Roman
119581	556-596 Old Kent Road (Roman Road, Ditch & Buried Land Surface)	[17260] Roman
145729	Kent Street (Roman Findspot)	[17260] Roman
105636	556-588 Old Kent Road (Roman Ditch, Pit, Gully & Occupation Site)	[17260] Roman
97994	Grange Road Croda Gelatine Works (Roman Ditch)	[17260] Roman
98355	59 Trafalgar Avenue (Garden Of) (Roman Road & Buried Land Surface)	[17260] Roman
134732	Ossory Road (Roman Layer)	[17260] Roman
137377	Old Kent Road (Roman Findspot - lamp)	[17260] Roman
149280	Grange Road Croda Gelatine Works (Roman Inhumation)	[17260] Roman
116430	79 Asylum Road (Garden Of) (Roman Road & Buried Land Surface)	[17260] Roman
136197	Tabard Street (Roman Findspot & Findspot - Vessel)	[17260] Roman
117702	Old Kent Road (Roman Road & Ditch)	[17260] Roman
99346	Old Kent Road (Roman Inhumation)	[17260] Roman
151308	Peckham High Street (Roman Findspot & Findspot)	[17260] Roman
131962	Peckham High Street (Roman Findspot)	[17260] Roman
133312	1-83 Peckham High Street (Roman Findspot)	[17260] Roman
106663	Aylesham Centre (Late Bronze Age Findspot)	[17277] Prehistoric, [17265] Neolithic, [17366] Late Bronze Age, [17260] Roman, [17390] Early Medieval, [17296] Medieval
138450	Gloucester Grove, St George's Way (Post Medieval Artefact Scatter)	[17260] Roman, [17257] Post Medieval, [17308] 17th Century, [17326] 19th Century
108373	430-432 Old Kent Road (Roman Ditch)	[17260] Roman, [17260] Roman, [17248] 3rd Century, [17323] 4th Century
97642	4-10 Asylum Road (Roman Buried Land Surface)	[17260] Roman, [17260] Roman, [17260] Roman
129592	Spa Road (Roman Ditch & Post Hole)	[17260] Roman
128826	Lisford Street (Roman Pit)	[17260] Roman
101149	Beckenham (Roman Road)	[17260] Roman, [17346] 2nd Century

Medieval HER Records

PRN	Mon_Name	Period
106663	Aylesham Centre (Late Bronze Age Findspot)	[17277] Prehistoric, [17265] Neolithic, [17366] Late Bronze Age, [17260] Roman, [17390] Early Medieval, [17296] Medieval

106251	Lisford Street (Medieval Findspot)	[17296] Medieval, [17257] Post Medieval
147790	Storks Road (High Medieval Findspot)	[17301] High Medieval, [17314] Victorian, [17380] 13th Century, [17326] 19th Century
120172	47-71 Peckham High Street (Pre-Conquest Pit)	[17320] Pre-Conquest, [17301] High Medieval
138333	74-76 Spa Road (Medieval Buried Soil Horizon)	[17369] Uncertain, [17296] Medieval, [17296] Medieval, [17257] Post Medieval
128376	Peckham High Street (Late Medieval Post Built Structure)	[17358] Late Medieval, [17340] Tudor, [17293] 14th Century, [17324] 15th Century, [17358] Late Medieval, [17340] Tudor, [17293] 14th Century, [17324] 15th Century, [17358] Late Medieval, [17340] Tudor, [17293] 14th Century, [17324] 15th Century
134782	Ruby Street (Medieval Manor House)	[17296] Medieval
105806	Grange Road Croda Gelatine Works (Medieval Water Channel)	[17296] Medieval, [17340] Tudor
98260	St Thomas Watering Place (Medieval Gallows)	[17296] Medieval, [17257] Post Medieval
137430	Peckham High Street (Medieval Village)	[17390] Early Medieval, [17296] Medieval, [17257] Post Medieval
107759	1-83 Peckham High Street (Medieval Ditch, Pit & Post Hole)	[17296] Medieval
107818	StaffordShireSt (Medieval Findspot)	[17296] Medieval
124797	Peckham Hill Street (Medieval Manor House)	[17296] Medieval
131211	Peckham (Medieval Tile Kiln)	[17296] Medieval
131433	Peckham (Medieval Windmill)	[17296] Medieval
151095	556-596 Old Kent Road (Medieval Market Garden)	[17296] Medieval, [17257] Post Medieval
105530	Ossory Road (Medieval Buried Soil Horizon)	[17296] Medieval, [17340] Tudor, [17257] Post Medieval

APPENDIX 4 PRINCIPLES OF ARCHAEOLOGICAL INVESTIGATION AND NOTIFICATION TO THE LPA

JAC28727
Appendix 4 Principles of Archaeological Investigation and Notification to the LPA
2
26 April 2023

Contents

1 INTRODUCTION

1.1 This 'Principles of Archaeological Investigation and Notification to the LPA' document forms Appendix 4 of the archaeological desk based assessment (ADBA) prepared by RPS Group Limited on behalf of the London Borough of Southwark and Veolia ES (UK) Limited.

1.2 The first draft of this document was submitted on 31st March 2023 and has been reviewed by Dr Chris Constable of Southwark Council (LBS) and this version incorporates advice received on 21st April 2023. Dr Constable noted that further design work is required on the scheme, so its likely impacts can be analysed and a range of archaeological approaches considered (Section 3).

1.3 The aim of the appendix is to support the LDO application and identify where possible the below ground archaeological potential of the proposed Local Development Order study area and set principles for future archaeological mitigation works, particularly here for the Southwark 2.0 DHN (Figure 1).

1.4 The appendix addresses in part – and as far as is possible at this stage of the LDO application because the routes and design have not yet been confirmed - the requirement of the Southwark Council Brief (Appendix 2, November 2022) to set out in principle guidelines towards a high-level Written Scheme of Investigation (WSI) to enable a clear strategy for archaeological interest to be safeguarded. It sets out the over-arching 'Principles of Archaeological Investigation and Notification to the LPA' framework that will need to be applied for any future archaeological mitigation works required by LBS. Once further design and route data is confirmed, Dr Constable advises that bespoke archaeological WSIs will need to be prepared, to safeguard archaeological interest during the groundworks for future DHNs.

1.5 The LDO applies to a large area of Southwark (Figure 1), the DBA assessment covers the whole LDO Study Area but also highlights one area of proposed District Heat Network extension within the LDO area, known as the Southwark 2.0 Proposed Primary Network (Figure 16 of the ADBA, with route shown in blue, Figure 1 of this assessment).

1.6 Within the Southwark 2.0 route, the desk based assessment identified five areas of archaeological potential. The areas are shown on Figure 1 of this Appendix (the general areas delineated by a cloud symbol) and are as follows:

1) Surrey Canal Road to Ilderton Road (Bermondsey Lake prehistory and Grand Surrey Canal industrial archaeology). A Watching Brief with potential for localised Excavation and Environmental Sampling is likely to be required.

2) Old Kent Road (Prehistoric and Roman). A Watching Brief during removal of road surface deposits to the first archaeological horizon, followed by close monitoring and full archaeological Excavation, Recording and Public Engagement if nationally significant remains are observed, as advised by the Council's Archaeological Advisor.

3) Brimmington Park (the projected line of Roman Watling Street). The route of Roman Watling Street is believed to cross Brimmington Park and as the proposed pipe route does not involve road closures, the mitigation here would be an Archaeological Evaluation in advance of pipe trenching works, followed by full archaeological Excavation, Recording and Public Engagement if nationally significant archaeological deposits are encountered, as advised by the Council's Archaeological Advisor.

4) Asylum Road area (Roman secondary road archaeology and evidence of the River Peck). A Watching Brief with the potential for archaeological works to be extended to Excavation and Environmental Sampling is likely to be required.

5) Peckham Canal Walk (Grand Surrey Canal industrial archaeology). A Watching Brief with potential for localised Excavation and Environmental Sampling is also likely to be required.

1.7 Each of these areas is an area of identified archaeological significance, and different archaeological mitigation strategies will need to be applied to each area depending on the nature of the archaeology present, its significance rating and whether archaeology of national significance could be encountered. All of these matters will be subject to review once further detailed design and methodology information is available. As a provisional guide the areas are shown on Figure 1 following a traffic light system:

- Red: Potential National Significance
- Amber: Potential National Significance but more likely to be Regional Significance.
- Green: Potential National Significance but most likely to be of Local Significance.

1.8 For all areas shown in Green on Figure 1, it is likely that a programme of archaeological observation and recording will be required, perhaps only in localised areas (Watching Brief).

1.9 This Appendix is in accordance with a Southwark Council Brief (Appendix 2), central and local government policy and guidance on archaeology and planning, and the general standards and guidance for archaeological fieldwork as set out by the Chartered Institute for Archaeologists (CIfA, 2020).

1.10 The Brief identifies that the desk based assessment will form a robust basis for any future written schemes of investigation (WSIs) that will provide more proportionate responses commensurate to any archaeological impacts identified. This appendix forms a preliminary baseline Written Scheme of Investigation (in principle) for any future works and sets outline principles on how to engage with and notify the Council, that can be revised when the specific details of the DHN schemes come forward.

1.11 As the LDO Study Area is so large, it has not been practical or possible to provide an overarching bespoke WSI at this stage, which would be able to provide sufficient detail of archaeological responses to different areas of the development. At the current time, it is not possible to cover every potential archaeological site or findspot in detail and address its mitigation needs, but the assessment provides an informed high-level overview of the archaeological resource (Figure 1).

1.12 The desk based assessment also provided additional detailed focus on areas of the Southwark 2.0 Proposed Primary Network pipework delivery, in the form of a walkover survey; the results of which were submitted as a series of annotated photographic plates in the desk based assessment (Plates 1 to 78).

2 PRINCIPLES OF CONSTRUCTION PRACTICE AS SET OUT IN THE CEMP

2.1 A Construction Environmental Management Plan (CEMP) and an Arboriculture Assessment has been produced as appendices to support the Local Development Order (LDO). Both these assessments detail specific methods of working which will be applied and will link to the investigative procedures associated with archaeology. The CEMP needs to be shared with the Council's Archaeological Advisor.

2.2 The Framework Construction Environmental Management Plan (CEMP) has been prepared by a separate team at RPS to support the development of a Local Development Order (LDO) for the London Borough of Southwark (LBOS) with respect to District Heat Networks (DHN).

2.3 The objective of this appendix is to set out a similar range of 'principles' that can be applied to managing the archaeological requirements of the project, particularly for any future Written Schemes of Investigation prepared to safeguard the archaeological interest identified, in accordance with the Brief and Policy 23 Archaeology of the Southwark Local Plan 2022.

2.4 There are areas of the proposed schemes where archaeological excavation is needed and for these areas, sufficient time and resources will need to be incorporated and programmed in advance within the construction programme to ensure that the archaeological work can be adequately undertaken (Figure 1).

2.5 Engagement, consultation and notice to the Council's Archaeologist needs to be built into the strategy to ensure the archaeological work can take place. A mechanism for a weekly monitoring meetings and weekly updates to the Council's Archaeologist, including a review of the timetable and foresight of the next proposed areas for excavation, together with monitoring visits of the site works that have been undertaken needs to be established at the earliest stages of each scheme.

3 PRINCIPLES AND OPTIONS FOR ARCHAEOLOGICAL MITIGATION RESPONSES

3.1 Following review of the desk based assessment the Council's Archaeology Officer, Dr Chris Constable, has advised that a range of varied archaeological mitigation responses will be necessary to mitigate any potential harm to buried archaeology from the below-ground impact of the proposed DHNs groundworks.

3.2 The desk based assessment identified areas of the LDO Study Area that will require additional archaeological safeguards beyond maintaining a watching brief inspection and monitoring strategy and these are shown on Figure 1.

3.3 The decision on the precise nature of what level of mitigation strategy will be required to safeguard archaeological interest remains with Southwark Council's Borough Archaeologist, as advisor to the Local Planning Authority.

3.4 Although the pipe trench groundworks along each road in the LDO Study Area will be of a small scale, the cumulative impact of the whole scheme is identified as significant, presenting an opportunity to record archaeological transects through the geology and topography of the landscape. This could provide information on the spatial distribution of archaeological sites and the formation processes that have led to this distribution, of equal importance is identifying areas across the network where archaeological interest is demonstrably absent.

3.5 The assessment recognises the potential of the DHN to inform on the effective integration of London's heritage in regenerative change and make a positive contribution to 'sensitivity mapping', 'characterisation' and the understanding of thematic research objectives for Southwark - aimed at understanding, protecting and celebrating the wider archaeological environment of this part of the borough.

3.6 The assessment notes that the DHN provides an opportunity to investigate the archaeology of 'road systems,' which is a different model to the archaeology of 'property parcels' (even those that front onto or abut roads) and is subject to different change scenarios and iterative stages of development activity. In summary, the absence of archaeology in property plots adjoining the road network sites is not necessarily indicative of archaeology being also absent in the nearby road systems (and vice-versa).

3.7 The objective of this appendix is to inform any future Written Scheme of Investigations prepared to safeguard the archaeological interest identified, in accordance with the Brief and Policy 23 Archaeology of the Southwark Local Plan 2022.

AREAS OF HIGH ARCHAEOLOGICAL POTENTIAL REQUIRING AN EXCAVATION MITIGATION STRATEGY (Figure 1, Areas 1 to 5)

3.8 The desk based assessment identified five areas where the archaeological potential is higher on the Southwark 2.0 DHN area (ADBA Figure 16, and Figure 1 of this Appendix), and a programme of bespoke archaeological fieldwork including targeted archaeological excavation works will be required for these areas, to confirm the potential extent, character, date and significance of any archaeological remains which may be present.

3.9 The desk based assessment concluded that the LDO Study Area contains the potential to inform on some of the earliest archaeology of Southwark and contribute to areas, stories and themes of significance. The five areas of identified archaeological potential for the Proposed Primary Network Southwark 2.0 Phase 1 and Phase 2 areas (Figure 1), are as follows:

1) Surrey Canal Road to Ilderton Road (Bermondsey Lake prehistory and Grand Surrey Canal industrial archaeology). A Watching Brief with potential for localised Excavation and Environmental Sampling is likely to be required.

2) Old Kent Road (Prehistoric and Roman). A Watching Brief during all below road surface groundworks will be required, with the potential for works to continue as full archaeological Excavation, Recording and Public Engagement if nationally significant remains are observed during the watching brief monitoring works, as advised by the LBS's Archaeological Advisor.

3) Brimmington Park (the projected line of Roman Watling Street). The route of Roman Watling Street is believed to cross Brimmington Park and as the proposed pipe route does not involve road closures, the mitigation here would be an Archaeological Evaluation in advance of Pipe trenching works, followed by full archaeological Excavation, Recording and Public Engagement if nationally significant archaeological deposits are encountered, as advised by the LBS's Archaeological Advisor.

4) Asylum Road area (Roman secondary road archaeology and evidence of the River Peck). A Watching Brief with potential for Excavation and Environmental Sampling is likely to be required.

5) Peckham Canal Walk (Grand Surrey Canal industrial archaeology). A Watching Brief with potential for localised Excavation and Environmental Sampling is likely to be required.

3.10 As the installation of the Southwark 2.0 District Heating Network progresses and new DHN routes are designed and confirmed, and programmes are known (across the LDO study Area) then bespoke written schemes of investigation will need to be prepared, agreed and formally submitted LBS to support these new routes and mitigate any potential harm to buried archaeological heritage assets from the impact of the DHN pipe laying and trenching regime

3.11 The assessment advised that a reasonable and pragmatic archaeological strategy needs to be agreed with the Borough Archaeologist in accordance with the Brief and any future conditions that may be applied to the Local Development Order Consent. This needs to reflect a proportionate response to the significance of the archaeology, and potential for survival in each location where archaeological sensitivity is identified.

3.12 For some localised areas there will be a requirement for full archaeological excavation, rather than simple watching brief works and tighter controls on the monitoring of the opening of the trenching work in certain areas. This is to ensure that archaeological best practice is carried out and that archaeological remains of potential national significance – such as the structural evidence of the London Roman roads - are preserved from harm and preserved by recording, excavation, publication and archiving. The opportunities for the dissemination of the results for public engagement and community benefit will also need to be explored.

3.13 The areas of significance identified for the Southwark 2.0 DHN are as follows:

- The Mesolithic and early prehistoric sites along the Old Kent Road (Figure 1, Areas 2 and 3).
- The palaeoecological environment and prehistoric archaeology from the shoreline and relict fills of the large late glacial Bermondsey Lake in the north of the LDO Study Area and its associated riverine geology and topology (Figure 1, Area 1 and 2);
- To further define the course of the River Peck and any other watercourses of Southwark and their formation processes and relationship to the prehistoric, Roman and later landscapes (Figure 1, Area 4);
- The route of the Roman road of Watling Street and roadside activity following its projected line just south of the Old Kent Road, especially in Brimmington Park and evidence of the enigmatic Lewes to London secondary Roman road (Figure 1, Areas 2 to 4);
- Potential evidence for the dating and construction of the modern alignment of the Old Kent Road (Figure 1, Areas 2 and 3);

- Inform on the complex histories of the Old Kent Road, its links to pilgrims, drovers and industrialists, and connections with Chaucer, Dickens and other social histories (Figure 1, Areas 2 and 3);
- Post medieval industrial archaeology relating to the Grand Surrey Canal, bridging points, the industry of gas engineer George Livesey and the numerous local industries of the village cores of Bermondsey, Peckham and Camberwell (Figure 1, general watching brief areas and Areas 1 and 5)(;
- The rebuilding of London following the Second World War and the growth of the 1950s estates, their valuable and authentic contribution to local initiatives, social value and public engagement by knowledge sharing for the public good.

WATCHING BRIEF STRATEGY FOR THE MAJORITY OF THE SOUTHWARK 2.0 DHN STUDY AREA (Figure 1, areas shown in green)

3.14 The assessment concluded that areas of the Southwark 2.0 DHN contain a lower potential to inform on the archaeology of Southwark and contribute to areas, stories and themes of significance. For these areas, a watching brief mitigation strategy will most probably be appropriate and may apply across much of the pipe route, with the contingency to extend to excavation and recording if archaeological remains of national significance are encountered during the works (Figure 1, areas shown in green).

3.15 For much of the LDO Study Area, the watching brief could generally be in the form of scheduled site visits when stretches of trenching have been opened and exposed. This is a suitable and proportionate strategy for mitigating harm without imposing an onerous and expensive archaeological regime in the majority of the LDO Study Area locations. The Southwark 2.0 DHN trenching, for example, has only a very small and localised impact on potential archaeology in each of its locations (Figure 1, Areas 1 to 5).

3.16 In some areas of the Southwark 2.0 DHN it is possible that an archaeologist may need to get into the trench to undertake archaeological work. Engagement with the design of the scheme should show what training, H&S requirements, *etc*. are necessary to enable this. This may require review following the appointment of the principal construction contractor. As much of the construction work will be within roads, there will be little opportunity to step trenches to enable safe access, or to use trench boxes - where areas of services are encountered. Reasonable steps to advance the archaeological objectives should be explored and reviewed with the Archaeological Consultant and the Council's Archaeologist.

3.17 The obvious public benefits that the scheme delivers for Southwark residents and for the environment could be argued to outweigh the harm of minimal localised impact to archaeological deposits, if the potential harm is mitigated by a small scale archaeological watching brief being maintained and full excavation only being applied in localised areas of high significance. The planning balance will need to be applied to archaeological strategies across the LDO study area.

3.18 The assessment suggested that it would not be fair or proportionate to impose a full time watching brief on a scheme of this nature, as robust and positive outcomes for the archaeology can be delivered by occasional monitoring and recording visits. Similar strategies have been achieved on other large utility projects across London such as the Thames Water Victorian Watermain Replacement (VMR) project and a similar strategy could be adopted here.

3.19 This also ensures that elements of the DHN strategy are not unnecessarily delayed and elements of the scheme such as road closures and diversions are kept to a minimum. More details about the project can be found in the attached document –Project Overview (Appendix 1).

3.20 As noted above appropriate public engagement, consultation and notice opportunities need to be built into the archaeological strategy in consultation with the Archaeological Consultant and agreed with the London Borough of Southwark (see Section 8)

4 STANDARDS, GUIDANCE AND PROJECT CONTROLS

4.1 All archaeological works will be carried out In accordance with the Framework Construction Environmental Management Plan's (CEMP) final established overall construction environmental management processes and procedures to minimise environmental impacts. All works will comply with the current local and national policy and guidance, particularly, as set out in the CEMP:

• Ancient Monuments and Archaeological Areas Act 1979;

• Treasure Act 1996 Code of Conduct 1997; and

• The Burial Act 1857 and all other legal regimes refereeing to human remains and human burials.

4.2 The CEMP establishes the overall construction environmental management process and procedure to minimise environmental impacts, but the CEMP is currently an initial Framework CEMP and has been prepared in advance of the appointment of a Principal Contractor. The Principal Contractor, when appointed would use this Framework CEMP as a basis for further preparation of its own document. This document, therefore, provides a set of standard guidelines to be adhered to in developing DHN's with the LBS. A similar strategy will be devised for the required archaeological works.

4.3 The principal mitigation measures to safeguard archaeology are currently:

- The principal method of safeguarding archaeological interest will be by observation and recording of archaeological and environmental finds, features and deposits along the DHN routes;
- The archaeological mitigation strategy for each area of DHN needs to be provided by RPS as the Archaeological Consultant, agreed with the Council's Archaeologist; and carried out by an approved Archaeological Contractor, registered with the Chartered Institute for Archaeologists (RO of CIfA) and appropriately experienced in projects such as the DHN schemes;
- Construction groundworks shall not commence on any DHN schemes, new roads or routes until the Principal Contractor has secured the implementation of a programme of archaeological work in accordance with the written scheme of investigation for archaeological work which has been submitted to and approved by the Council's Archaeologist;
- The LBS and the Archaeological Consultant shall be given an appropriate period of notice from the initial notification date to ensure that the agreed resources required to carry out the archaeological mitigation, can be mobilised on-site and finances are in place to pay for these works, their reporting, archiving, publication and delivery of public engagement opportunities;
- As a minimum, a weekly monitoring meeting or email update will take place with or be provided to the Council's Archaeologist, including a review of the timetable and foresight of the proposed areas for excavation in the following weeks, together with an update of what site works have been undertaken;
- The Principal Contractor must stop any affected tasks immediately in the event of an unexpected archaeological find; and must notify the Archaeological Consultant, Contractor and LBS upon the discovery of any potential heritage assets and will follow the given recommendations.

4.4 Were significant features to be found the level of archaeological coverage would need to be reviewed in consultation with the Archaeology Officer of the London Borough of Southwark, the Principal Contractor, and the RPS Archaeological Consultant, and any additional requirements discussed. This WSI may need to be amended and added to as further information about the programme of works becomes available.

4.5 All works on site will be conducted in accordance with the Health and Safety at Work Act 1974. The Principal Contractor will ensure that appropriate industry standards for health and safety are applied and that continuous improvement in safety performance is sought.

4.6 The Principal Contractor will produce a health and safety management system which will include documentation defining internal arrangements for managing health and safety at the site and integrate this with the Risk and Method Statement (RAMS) of the attendant archaeological contractor.

4.7 The Principal Contractor will be responsible for assessing and managing all potential health and safety risks where the project interfaces with the public e.g., public engagement concerning archaeology, monitoring visits by the archaeological team and the Southwark Archaeology Officer (see Public Engagement strategy in Section 8). The Principal Contractor will display the appropriate signage where risks are displayed to the public.

4.8 All relevant health and safety regulations determined by the on-site Principal Contractor must be followed. A range of general health and safety data must be provided by the Archaeological Contractor and a detailed risk assessment and management strategy (RAMS) for the project be prepared. In particular, the machine should be kept away from unsupported trench edges and full PPE be used by all personnel as necessary.

4.9 No personnel are to work in unsupported excavations. Excavation areas or trenches deeper than 1.2m cannot be entered to be without appropriate enabling works. Trenches may need to be widened, stepped, battered back or shored in localised areas to facilitate excavation of deep archaeological features – as the work is mainly within roadways this could only happen in the most exceptional circumstances.

4.10 Most excavation will be in roadways and is likely to involve management or excavation for the trench around existing utilities and services. Planning for this project from the start should identify the H&S and training requirements for archaeologists to work on this and safely access the trenching. RPS and the archaeological sub-contracting organisation must be satisfied that the Principal Contractor has provided all information reasonably obtainable on contamination and the location of live services before any site work takes place.

4.11 Archaeologists are not to enter any trenches with live services or utilities, and health and safety is paramount above all other considerations. Archaeologists are only permitted to enter trenches if this is a clear requirement of the archaeological strategy for areas of high potential, and a bespoke strategy and RAMS has been agreed by the Council's Archaeologist, the Principal Designer and Health and Safety Advisors for the scheme, as well as the consultant and the archaeological contractor's safety advisors (Figure 1). Principal Contractor and their site operative may have to agree and approve dynamic risk assessments as appropriate. The works are principally an observation and recording approach conducted from a safe distance away from the edge but from the top of the DHN trench.

4.12 The Principal Contractor and Archaeological team will provide appropriate signage to notify the public if archaeological discoveries of interest have been made (see Section 8).

4.13 The site and any archaeological discoveries made will be protected by 1.8m – 2.0m high physical barriers which will surround the site, most probably Heras fencing or a similar design. In some areas a physical barrier may consist of a chain link fence which will be temporarily installed around each work area. The fencing will be moved as the construction activity progresses along the construction route.

4.14 Site accommodation is to be provided by the Principal Contractor for the visiting archaeologist. It envisaged that the site accommodation would be in the form of a small mobile compound unit which would be located within the footprint of the proposed works area. Site storage for archaeological equipment may possibly be occasionally required and should be provided to enable work to progress

efficiently. This approach would mean that the potential impact on local roads and traffic would be minimal as the archaeological team would not need to supply their own welfare and vehicle.

4.15 The Principal Contractor should provide mobile accommodation units that include the provision of a chemical toilet with handwashing facilities. Somewhere to shelter from extremes of weather and make project notes will also need to be provided, as appropriate.

4.16 The success of the archaeological element of the project relies on agreed methods of communication to be used during the construction.

4.17 Internal communication will include kick-off meetings, toolbox talks and regular meetings between internal stakeholders, site inductions and site briefings, as a minimum.

4.18 Any human remains must be covered and protected from public view. Removal can only take place under appropriate licence and in accordance with Ministry of Justice and environmental health regulations and current guidance and legislation on the accidental disturbance of human remains.

5 ARCHAEOLOGICAL MITIGATION FIELDWORK OBJECTIVES

5.1 The objectives of the archaeological mitigation strategies are to contribute to knowledge of the archaeology of the LDO Study Area, through the recording of any archaeological remains exposed because of excavations in connection with the groundworks. Particular attention will be made to the character, height below ground level, condition, date and significance of the deposits. The objective is also to disseminate the knowledge gained through a programme of public engagement (Section 8)

5.2 The fieldwork presents an opportunity to address the following general research questions:

- Can the groundworks inform on the geology and topography of Southwark, especially regarding evidence of the palaeoenvironment of areas such as Bermondsey Lake?
- Is there any evidence for prehistoric to medieval activity, and what is the nature of this?
- Can the works inform on the Roman road network of Southwark?
- What evidence is there for post-medieval activity, and what is the significance of this?
- At what level do archaeological deposits survive in the highways across Southwark?
- Can the watching brief works inform on the site-specific research questions of local archaeological sites?

5.3 The archaeological mitigation programme will take place during contractors' groundworks and will involve generally archaeological monitoring and recording in-construction to identify, investigate and record any archaeological remains (see Section 6 below for archaeological responses and fieldwork options).

5.4 The DHN scheme provides archaeological opportunities to search for areas of identified archaeological significance over a large area in plan, including searching for nationally significant archaeology such as the major Roman road of Watling Street or the poorly understood, but also very important, secondary Roman road running between London and Lewes road – whose exact course is currently unknown. In this situation equal weight of significance must be recognised for identifying areas negative for archaeological remains. If archaeology is not present, for reasons other than massive modern disturbance and it is evident that the natural stratigraphic matric is intact, then this can be equally as important as finding positive evidence. Opportunities to prove a negative survival for archaeology can also be exceptionally useful. In this light, at a minimum the project should provide an article detailing the fieldwork, approach and results for publication in the London Archaeologist. To return to public engagement part of this is obviously publication and presentation to archaeological societies etc. This should be detailed in the public engagement section.

6 FIELDWORK METHODOLOGIES

6.1 Archaeological observations will generally be carried out during contractor's groundworks, the level of coverage being determined by the nature of the works and by the extent of deposits that are exposed. Potential remains will be investigated by hand, with recording and recovery of dating evidence as appropriate.

6.3 The LBS will be kept advised of the progress of the fieldwork in weekly updates, as detailed above, and immediately for any significant finds or remains that may require additional archaeological work. Close liaison and communication will be maintained with the groundworks team and all stakeholders to ensure a presence on site as and when necessary.

6.4 Interim written reports will be submitted at regular intervals, as set out by the LBS. Where possible such reports will attempt to group together discreet geographical areas.

6.5 Reasonable access to the site is to be arranged for representatives of the Local Planning Authority and Dr Chris Constable, Archaeological Advisor, who will wish to make site inspections to ensure that the archaeological investigations are progressing satisfactorily.

6.6 This will involve an archaeologist being in attendance as the pipe trench is opened up and if archaeological remains are exposed adequate time should be allowed for investigation and recording, although every effort will be made not to disrupt the contractor's programme. Where possible, excavation should be undertaken using a flat bladed bucket (preferably working in a single direction, although it is acknowledged that this will often be impracticable) to enable archaeological remains to be cleanly recorded prior to disturbance from being driven over. If highly significant archaeological remains are encountered, machine excavation will cease to allow the remains to be investigated further. If necessary, further resources may need to be discussed by all parties and these resources allocated as appropriate.

6.7 The archaeologist will inspect the surfaces revealed. Any archaeological structures or features revealed will be recorded in plan and section as necessary, in accordance with current guidance. The main contractor will allow the archaeological contractor reasonable time and resources to undertake any inspection or recording required.

6.8 The field and post-excavation work will be carried out in accordance with current standards and guidance for archaeological projects.

6.9 Archaeological deposits and features will be investigated and recorded in stratigraphic sequence, and where appropriate finds dating and environmental evidence recovered.

6.10 The investigations will be recorded onto the DHN project survey plans and related to the Ordnance Survey grid. The fieldwork record will be supplemented as appropriate by a detailed photographic record. Photographs should ensure that images are taken that locate the area of investigation and lock the discoveries into visible landmarks, to avoid monotony of images and to assist with archiving of the results and contextual analysis.

6.11 Finds and samples will be treated in accordance with the appropriate guidelines, including the Museum of London's 'Standards for the Preparation of Finds to be permanently retained by the Museum of London'. Finds and artefacts will be retained and bagged with unique numbers related to the context record, although building material may be discarded following professional assessment. All assessment of finds and samples will be undertaken by appropriately qualified staff.

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7 REPORTING, PUBLICATION AND THE SITE ARCHIVE

7.1 Archaeological reporting will be in accordance with current standards and guidance for archaeological projects in London and the scope will be advised by the Council's Archaeologist in consultation with the Archaeological Consultant. The level and scope of reporting should be proportionate to the nature of the results encountered on-site.

7.2 A programme for reporting will need to be agreed, as the DHNs could take place over a series of years and reports should be regularly produced to contribute public benefit, share knowledge and to inform on future DHN works and keep the Historic Environment Record (HER) updated of any new discoveries of interest. Copies of the report or interim reports will be supplied to the Client, the LBS, the OASIS ADHS and GLHER databases and to appropriate local libraries or research facilities.

7.3 The project reports will include details of any archaeological remains or finds, an interpretation of the deposits investigated and trench plans located to the Ordnance Survey grid. Short summaries of the fieldwork will be appended using the OASIS Data Collection Form, and in paragraph form suitable for publication within the 'excavation round-up' of the London Archaeologist. Areas of excavation may require their own conservation, post excavation assessment, publication, deposition of the archive and public engagement measures.

7.4 At present there is no provision for the further analysis or publication of significant findings. Should these be made the requirement would be discussed with the LBS and other key stakeholders. The future WSI should make provision for this.

7.5 All records from the archaeological project, will be ordered in line with Museum of London Guidelines for the Preparation of Archaeological Archives and will be deposited in the Museum of London Archaeological Archive and Research Centre (LAARC) unless the finds are suitable for display in one of Southwark's local museums.

7.6 The integrity of the site archive should be maintained, and the landowner will be urged to donate any archaeological finds to the relevant museum. The Principal Contractor will endeavour where practicable to establish a protocol for identifying the ownership of any finds recovered during the work, to ensure that the legal rights of potential owners are safeguarded.

8 PUBLIC ENGAGEMENT

8.1 The Principal Contractor will appoint a Community Liaison Officer. The Community Liaison Officer will undergo liaison with LBS, residents, businesses and other interested parties to keep them informed of developments on site and upcoming activities that could potentially impact them. The information will also notify the interested parties that the archaeological historic environment is safeguarded by the archaeological monitoring works and any archaeological remains will be professionally recorded as part of the groundworks.

8.2 The Principal Contractor's point of contact will need to be provided with regular updates on the archaeological findings to deal with any queries and provide immediate responses to any issues raised.

8.3 Opportunities for public engagement, including the public display of findings of the work, knowledge sharing, interpretation and public benefit will be explored. Opportunities to enhance and contribute to local heritage themes, interest and initiatives should be explored.

8.4 The Principal Contractor will be responsible for assessing and managing all potential health and safety risks where the project interfaces with the public e.g., public engagement concerning archaeology, monitoring visits by the archaeological team and the Southwark Archaeology Officer

8.5 The Principal Contractor will display the appropriate signage where risks are displayed to the public. As a minimum, the Archaeological Consultant working with the Council's Archaeologist and the Archaeological Contractor will provide appropriate signage to notify the public if archaeological discoveries of interest have been made or are anticipated.

8.6 For each DHN scheme a robust strategy and programme for delivering public benefit and social value, must be built into the archaeological written scheme of investigation. The scope, nature and resourcing required for this should be determined in consultation with the Council's Archaeologist and approved by the LBS prior to the commencement of any groundworks. The scope will need to be agreed and approved by the LPA in writing.

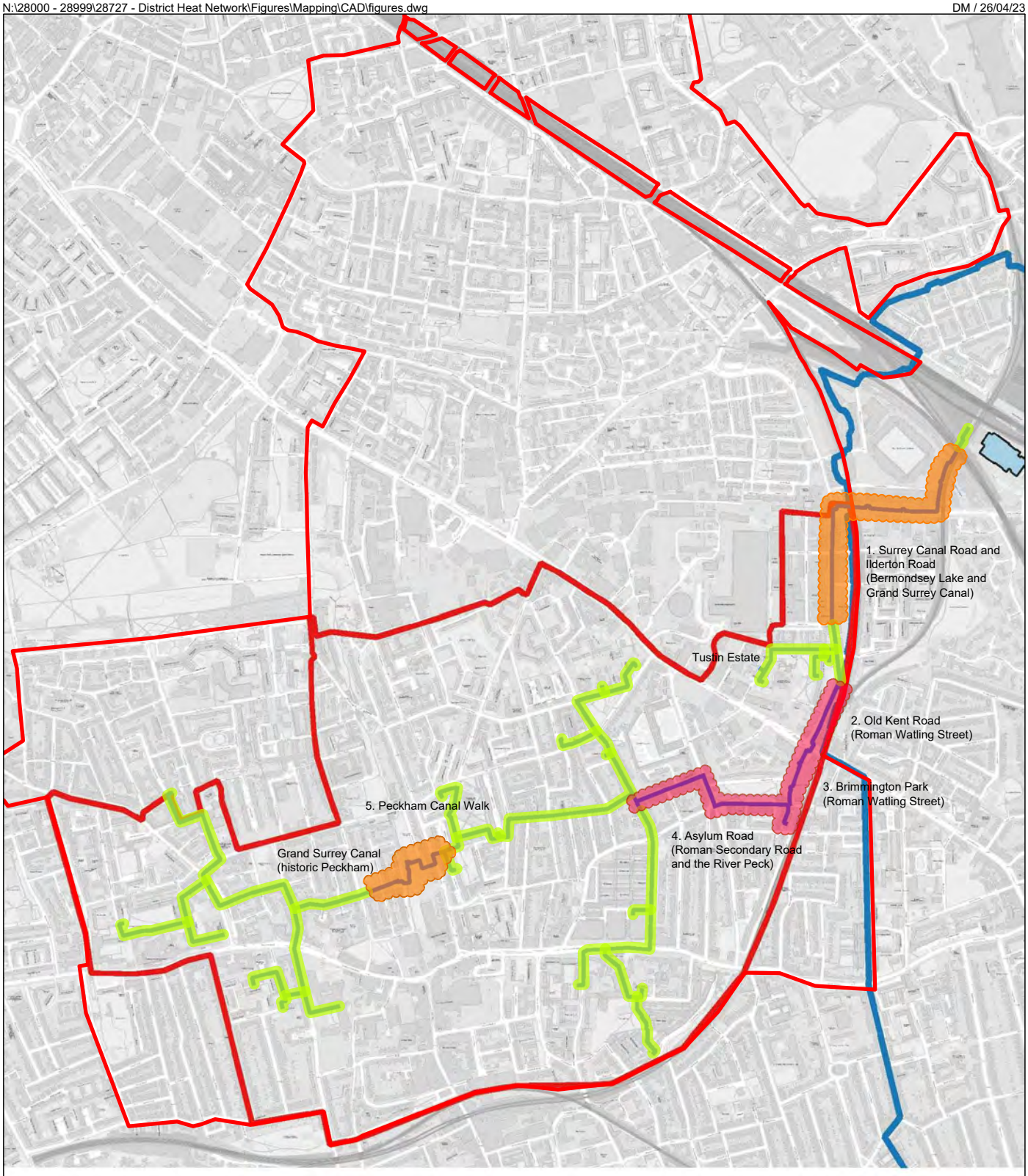
9 SUMMARY AND CONCLUSIONS

9.1 All archaeological works and mitigation measures will be carried out In accordance with the Framework Construction Environmental Management Plan's (CEMP) final established overall construction environmental management processes and procedures to minimise environmental impacts. All works will be in accordance with the Brief and with any future WSI or WSIs for the relevant area of DHN, which will have been submitted to the London Borough of Southwark and approved in writing.

9.2 The CEMP establishes the overall construction environmental management process and procedure to minimise environmental impacts, but the CEMP is currently an initial Framework CEMP and has been prepared in advance of the appointment of a Principal Contractor. The Principal Contractor, when appointed would use this Framework CEMP as a basis for further preparation of its own document. This document, therefore, provides a set of standard guidelines to be adhered to in developing DHN's with the LBS. A similar strategy will be devised for the required archaeological works. The principal mitigation measures to safeguard archaeology are currently:

- Construction groundworks shall not commence on any DHN schemes, new roads or routes until the until the Principal Contractor has secured the implementation of a programme of archaeological work and public engagement in accordance with a written scheme of archaeological investigation which has been submitted to and approved in writing by the LBS Archaeological Officer, for the Local Planning Authority.
- The LBS and the Archaeological Consultant shall be given an appropriate period of notice from the initial notification date to ensure that a suitable programme of works is agreed. This will set out the programme and timetable for the works and demonstrate that the necessary time and financial resources are in place to complete the necessary archaeological mitigation. Sufficient time needs to be provided to allow the key stakeholders to be mobilised on-site and that financial agreements are in place to pay for these works.
- The Principal Contractor will stop work immediately or when safe to do so, in the event of an unexpected archaeological finds of significance; and will notify the Archaeological Consultant, Contractor and LBS and will follow the given recommendations.

9.3 Once the Principal Contractor is appointed formal Written Schemes of Investigation will be prepared and a suitably qualified archaeological contractor appointed. The WSI will be prepared by the Archaeological Consultant in close consultation with the Council's Archaeologist.



LDO Site Boundary

Southwark 2.0
Proposed Primary Network

N

0 200 400m

Scale at A4: 1:15,000

High Archaeological Significance (National Significance)

Moderate Archaeological Significance (Regional Significance)

Areas of Archaeological monitoring in construction watching brief (Local Significance)

A TETRA TECH COMPANY

Appendix 4

Figure 1

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