



**CHARLTON RIVERSIDE  
Anchor and Hope Lane  
London SE7**

Royal Borough of Greenwich

Historic environment assessment

November 2016



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Anchor and Hope Lane  
London SE7**

**Historic environment assessment**

NGR 541116 178946

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# Executive summary

Leopard Guernsey Anchor Propco Limited has commissioned MOLA to carry out a historic environment assessment in advance of proposed development at Charlton Riverside in the Royal Borough of Greenwich. The Proposed Development falls within two main plots of land (Plot A and Plot B) and entails the demolition of existing buildings and erection of 9 buildings ranging from 2 to 28 storeys in height for Class C3 residential use, with Class B1 employment space and flexible uses comprising Class A1 (retail), Class A3 (Café/ Restaurant), Class D1 (Community Use) and Class D2 (Leisure) at ground floor and first floor level, alterations to existing vehicular access and creation of new pedestrian access from Hope and Anchor Lane and the riverside, creation of new areas of open space and landscaping together with the provision of associated car parking, cycle space, refuse and recycling storage, plant and all other associated works. The site would have a new basement level across c 50% of the footprint of the area of Plot A, beneath the residential towers (around 30% of the entire site footprint). Foundations would be piled.

This desk-based study assesses the impact on buried heritage assets (archaeological remains). Buried heritage assets that may be affected by the Proposed Development comprise:

- **Palaeoenvironmental remains.** The entire site lies on the River Thames floodplain. Prior to drainage and reclamation in the later medieval and post-medieval periods the area would have been intertidal marshland, and possibly within a creek across the marsh. Thick alluvial deposits including peat (the remains of the vegetation of a former landsurface) have high potential to contain pollen and floral and faunal macrofossils such as seeds, plant fragments and molluscs, which can be used to reconstruct past environments from the prehistoric period onwards, of low or medium heritage significance.
- **Early to mid-20th century industrial remains.** Historic maps show a rope-works and rope-walk buildings on the site. There is high potential for their footings, of low/very low significance.
- **Evidence of post-medieval wetland management.** There is moderate potential for drainage ditches and possible timber revetments of river walls established in order to reclaim the Thames marshland. Such remains would be of low significance. Ground consolidation deposits are likely to be present, of very low significance.
- **Previously unrecorded prehistoric remains.** Whilst unsuitable for settlement, the intertidal wetland is likely to have been exploited throughout the prehistoric and possibly later periods. Little past investigation has been carried out but based on assumptions about use of the resources of the floodplain, there is uncertain, possibly moderate potential for timber trackways, hulked boats, jetties and fish traps, deeply buried at the base of the alluvium, with good preservation due to waterlogging. Significance would depend on the nature and extent of the remains, but might be medium.

The site's location in the floodplain marsh would in the historic periods have been an unattractive location for settlement: the areas of settlement were located further south, on the Upper Chalk terrace, and whilst the floodplain may have been exploited for its wetland resources, there are few recorded remains or find spots within the study area to indicate any intensity to this activity.

Archaeological survival will be high within thick alluvial deposits. British Geological Survey data indicates that these are overlain by 5.5–7.9m of undated made ground which will have buried (and protected) any early remains. Post-medieval remains would be in the upper levels of this sequence.

The construction of a new basement to a formation level of 2.9m below ground level in the north-east of the site would within its footprint entirely remove any remains contained in the made ground but would not have an impact on any palaeoenvironmental or prehistoric remains in the underlying alluvium. Piled foundations would entirely remove any remains from the footprint of each pile; the severity of the impact would depend on pile size, type and density, which is not currently known.

In view of the size and nature of the Proposed Development and its location within an area of high archaeological potential associated with the prehistoric and later potential of the marshes and riverfront, further archaeological investigation may be required. Geoarchaeological boreholes and sampling could serve as a feasible mitigation strategy for deeply buried remains affected by significant piling (if proposed) in terms of clarifying the subsurface topography of early landscapes and past environments. Such work, carried out under the terms of a standard archaeological planning condition, could be combined with a geotechnical survey and would need to be undertaken in accordance with an approved

*Written Scheme of Investigation (WSI). Whilst the significance of the post-medieval remains is not considered sufficient to warrant any further archaeological work, it presents an opportunity for drawing out the site's 20th century industrial history. MOLA's community outreach team, in particular the flagship Time Truck programme could be used in this instance to highlight the site's potential for place-making and community engagement.*

# 1 Introduction

## 1.1 Origin and scope of the report

- 1.1.1 Leopard Guernsey Anchor Propco Limited has commissioned MOLA (Museum of London Archaeology) to carry out a historic environment assessment in advance of proposed development at Charlton Riverside, London SE7 (National Grid Reference 541116 178946: Fig 1). The development proposals fall within two main plots of land (Plot A and Plot B) and entail the demolition of existing buildings and erection of 9 buildings ranging from 2 to 28 storeys in height for Class C3 residential use, with Class B1 employment space and flexible uses comprising Class A1 (retail), Class A3 (Café/ Restaurant), Class D1 (Community Use) and Class D2 (Leisure) at ground floor and first floor level, alterations to existing vehicular access and creation of new pedestrian access from Hope and Anchor Lane and the riverside, creation of new areas of open space and landscaping together with the provision of associated car parking, cycle space, refuse and recycling storage, plant and all other associated works. The site would have a new basement level across c 50% of the footprint of the area of Plot A, beneath the residential towers (around 30% of the entire site footprint). Foundations would be piled.
- 1.1.2 This desk-based study assesses the impact of the scheme on buried heritage assets (archaeological remains). It forms a technical appendix in support of an Environmental Statement, assessing the impact of the Proposed Development (hereafter referred to as the 'site') on the historic environment. It will enable the archaeological advisors to the local planning authority (LPA) to formulate an appropriate response in the light of the impact upon any known or possible heritage assets. These are parts of the historic environment which are considered to be significant because of their historic, evidential, aesthetic and/or communal interest.
- 1.1.3 This report deals solely with the archaeological implications of the Proposed Development and does not cover possible built heritage issues, except where buried parts of historic fabric are likely to be affected. Above ground assets (ie, designated and undesignated historic structures and conservation areas) on the site or in the vicinity that are relevant to the archaeological interpretation of the site are discussed. Whilst the significance of above ground assets is not assessed in this archaeological report, direct physical impacts upon such arising from the development proposals are noted. The report does not assess issues in relation to the setting of above ground assets (eg visible changes to historic character and views).
- 1.1.4 The assessment has been carried out in accordance with the requirements of the National Planning Policy Framework (NPPF) (DCLG 2012, 2014; see section 10 of this report) and to standards specified by the Chartered Institute for Archaeologists (CIfA Dec 2014a, 2014b), Historic England (EH 2008, 2015), and the Greater London Archaeological Advisory Service (GLAAS 2015). Under the 'Copyright, Designs and Patents Act' 1988 MOLA retains the copyright to this document.
- 1.1.5 Note: within the limitations imposed by dealing with historical material and maps, the information in this document is, to the best knowledge of the author and MOLA, correct at the time of writing. Further archaeological investigation, more information about the nature of the present buildings, and/or more detailed proposals for redevelopment may require changes to all or parts of the document.

## 1.2 Designated heritage assets

- 1.2.1 The site does not contain any nationally designated (protected) heritage assets, such as scheduled monuments, listed buildings or registered parks and gardens. The closest listed building to the site is the Grade II listed Fossdene School, 635m to the south-west. Owing to the distance from the site it has not been included in the gazetteer.
- 1.2.2 The site is within the Greenwich Peninsula and Foreshore area of high archaeological potential (AHAP). English Heritage (now Historic England) reappraised the archaeological priority areas in 2011 and the recommendations have been adopted in the current local plan. The AHAP

recognises the prehistoric and palaeoenvironmental potential of this area and its historic connection with the riverfront maritime industry (EH 2011).

1.2.3 The site does not lie within a local authority conservation area.

## 1.3 Aims and objectives

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1.3.1 The aim of the assessment is to:

- identify the presence of any known or potential buried heritage assets that may be affected by the Proposed Development;
- describe the significance of such assets, as required by national planning policy (see section 9 for planning framework and section 10 for methodology used to determine significance);
- assess the likely impacts upon the significance of the assets arising from the proposals; and
- provide recommendations for further assessment where necessary of the historic assets affected, and/or mitigation aimed at reducing or removing completely any adverse impacts upon buried heritage assets and/or their setting.

## 2 Methodology and sources consulted

- 2.1.1 For the purposes of this report the documentary and cartographic sources, including results from any archaeological investigations in the site and a study area around it were examined in order to determine the likely nature, extent, preservation and significance of any buried heritage assets that may be present within the site or its immediate vicinity. This information has been used to determine the potential for previously unrecorded heritage assets of any specific chronological period to be present within the site.
- 2.1.2 In order to set the site into its full archaeological and historical context, information was collected on the known historic environment features within a 1km-radius study area around it, as held by the primary repositories of such information within Greater London. These comprise the Greater London Historic Environment Record (GLHER) and the London Archaeological Archive and Research Centre (LAARC). The GLHER is managed by Historic England and includes information from past investigations, local knowledge, find spots, and documentary and cartographic sources. The LAARC includes a public archive of past investigations and is managed by the Museum of London. The study area was considered through professional judgement to be appropriate to characterise the historic environment of the site. Occasionally there may be reference to assets beyond this study area, where appropriate, eg, where such assets are particularly significant and/or where they contribute to current understanding of the historic environment.
- 2.1.3 In addition, the following sources were consulted:
- MOLA – in-house Geographical Information System (GIS) with statutory designations GIS data, prehistoric ‘key activity indicators’ for London, past investigation locations, projected Roman roads and burial grounds from the Holmes burial ground survey of 1896; georeferenced published historic maps; Defence of Britain survey data, in-house archaeological deposit survival archive; and archaeological publications;
  - Historic England – information on statutory designations including scheduled monuments and listed buildings, along with identified Heritage at Risk;
  - The London Society Library – published histories and journals;
  - Greenwich Heritage Centre, Woolwich – historic maps;
  - Groundsure– historic Ordnance Survey maps from the first edition (1860–70s) to the present day;
  - British Geological Survey (BGS) – solid and drift geology digital map; online BGS geological borehole record data;
  - Leopard Guernsey Anchor Propco Limited – architectural drawings (Simpson Haugh and Partners/ April 2016), existing site survey (Greenhatch Group/23.09.2015);
  - Internet – web-published material including the LPA local plan, and information on conservation areas and locally listed buildings.
- 2.1.4 The assessment included a site visit carried out on the 14th of September 2016 in order to determine the topography of the site and existing land use and the nature of the existing buildings on the site, and to provide further information on areas of possible past ground disturbance and general historic environment potential. The site is a working industrial estate, and access was extremely limited. Only the entrance way was considered safe enough to observe.
- 2.1.5 Fig 2 shows the location of known historic environment features within the study area. These have been allocated a unique historic environment assessment reference number (**HEA 1, 2, etc**), which is listed in a gazetteer at the back of this report and is referred to in the text. Where there are a considerable number of listed buildings in the study area, only those within the vicinity of the site (eg within 100m) are included, unless their inclusion is considered relevant to the study. Conservation areas and areas of high archaeological potential are not shown. All distances quoted in the text are approximate (within 5m).
- 2.1.6 Section 10 sets out the criteria used to determine the significance of heritage assets. This is based on four values set out in Historic England’s *Conservation principles, policies and guidance* (EH 2008), and comprise evidential, historical, aesthetic and communal value. The

report assesses the likely presence of such assets within (and beyond) the site, factors which may have compromised buried asset survival (ie present and previous land use), as well as possible significance.

- 2.1.7 Section 11 includes non-archaeological constraints. Section 12 contains a glossary of technical terms. A full bibliography and list of sources consulted may be found in section 13 with a list of existing site survey data obtained as part of the assessment.

## 3 Site location, topography and geology

### 3.1 Site location

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- 3.1.1 The Charlton Riverside site is located off Anchor and Hope Lane, Charlton SE7 (NGR 541116 178946: Fig 1). The site comprises two main parcels of land; 'Plot A' to the north-east, the rectangular VIP Trading Estate with the access road to Anchor and Hope Lane, and a footpath to the Thames foreshore; and 'Plot B' to the south-west is Rope Walk Business Park, a smaller rectangle of land adjacent to Anchor and Hope Road. The site is bounded by industrial estates to the north, south and east. To the west it is bounded by Anchor and Hope Lane, and two residential areas of Derrick Gardens and Atlas Gardens. The site falls within the historic parish of Charlton, and lay within the county of Kent prior to being absorbed into the administration of the Greater London Borough of Greenwich.
- 3.1.2 The main body of the site lies c 250m south of the River Thames, although the footpath in the north-eastern section extends to the Thames foreshore.

### 3.2 Topography

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- 3.2.1 Topography can provide an indication of suitability for settlement, and ground levels can indicate whether the ground has been built up or truncated, which can have implications for archaeological survival (see section 5.2).
- 3.2.2 The topography of the site slopes gently from north to south. In the northern projection of the site, ground level is c 4.9m above Ordnance Datum (OD), within the area of the VIP Trading Estate, ground level is c 3.6m OD sloping down to 3.4m OD in the south-west corner, with localised variations.
- 3.2.3 In the southern-most parcel of land, ground levels broadly slope down from the south to north. In the north-east corner of this parcel, ground level is 3.4m OD, but rises in the south to 3.7m OD.
- 3.2.4 The ground levels on the site are entirely artificial and reflect substantial made ground deposits introduced in the post-medieval period (possibly earlier) as part of reclamation of the former low-lying marshland. The obscured natural subsurface topography is reflected in the levels of the deeply buried underlying geology, which is discussed below.

### 3.3 Geology

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- 3.3.1 Geology can provide an indication of suitability for early settlement, and potential depth of remains.
- 3.3.2 The British Geological Survey (BGS) digital data indicates that the entire site overlies alluvium associated with the former River Thames floodplain, over Shepperton Gravels. The edge of the floodplain, defined by the underlying Upper Chalk geology, lies just south of Woolwich Road, 400m to the south of the site.
- 3.3.3 At the time of writing no geotechnical surveys have been carried out within the site and the levels of natural are uncertain, as is the nature of the subsurface topography. The Thames was originally a braided, rather than single, channel and flowed across a broad floodplain of gravel islands ('eyots') and deeper channels, with intertidal marsh between. The eyots which may have been suitable for dry land activities prior to rising water levels in the later prehistoric. This landscape has been buried beneath alluvium and subsequently very thick deposits of made ground used in the reclamation of the marsh.
- 3.3.4 The BGS notes four historic boreholes immediately north of the site, drilled for engineering (non-archaeological) purposes. These provide a general indication of the geology levels that might be present on the site. Table 1, below, presents the results of these four boreholes.

*Table 1: summary of geotechnical data (ref BGS digital data)  
Levels are in metres below ground level (mbgl)*

<b>BH/TP ref.</b>	<b>Ground Level(m OD)</b>	<b>Modern made ground</b>	<b>Undated made ground</b>	<b>Alluvium</b>	<b>Top of natural (eg gravel)</b>
TQ47NW1623	5.2	0–0.2	0.2–7.0	7.0–11.0	11.0
TQ47NW1624	5.2	0–0.3	0.3–7.9	7.9–9.1	9.1
TQ47NW1625	5.2	0–0.2	0.2–5.5	5.5–9.7	9.7
TQ47NW1626	5.2	0–0.8	0.8–6.0	6.0–8.7	8.7

- 3.3.5 Within each of the boreholes, modern made ground layers of reinforced concrete and tarmac, overlay a thick deposit described as alluvium/made ground comprising mottled grey clay with gravel, chalk, brick and silt inclusions. As these appear to be an interface between the underlying alluvium (which was found to contain peat deposits) and the concrete surface, they have been interpreted as undated made ground, and may represent redeposited alluvium with other materials, forming a succession of reclamation dumps.
- 3.3.6 The underlying terrace gravels lie at 8.7–9.7m below ground level (mbgl) in three of the boreholes. Within Borehole TQ47NW1623 the gravel deposits lie much deeper at 11.0mbgl, likely indicating the presence of a deep palaeochannel. Similar sub surface topography has been identified in other geotechnical surveys 210m west of the site (**HEA 4**), and 865m west of the site (**HEA 3**), indicating the presence of braided channels within the Thames floodplain.

## 4 Archaeological and historical background

### 4.1 Overview of past investigations

- 4.1.1 No archaeological investigations have been carried out within the site. The archaeological potential of the New Charlton area is little understood, as, other than a number of geoarchaeological and foreshore surveys, only one archaeological evaluation has taken place within the 1km study area to date. This was carried out off the floodplain on the Upper Chalk, 660m to the south-west of the site at Victoria Way (**HEA 7**) and uncovered post-medieval plough marks along with worked and fire-cracked undated prehistoric flint.
- 4.1.2 Conversely the geoarchaeological potential and sub-surface topography of the site is reasonably well understood, as five investigations, including those closest to the site at Lombard Wall, 215m west (**HEA 4**), comprised geoarchaeological surveys which have been used to produce sub-surface deposit models. One investigation, 230m north of the site comprised a foreshore survey and recording of the hulked remains of the HMS Duke of Wellington, a ship of the line dating to 1852 (**HEA 1**).
- 4.1.3 The results of these investigations, along with other known sites and finds within the study area, are discussed by period, below. The date ranges below are approximate.

### 4.2 Chronological summary

#### *Prehistoric period (800,000 BC–AD 43)*

- 4.2.1 The Lower (800,000–250,000 BC) and Middle (250,000–40,000 BC) Palaeolithic saw alternating warm and cold phases and intermittent perhaps seasonal occupation. During the Upper Palaeolithic (40,000–10,000 BC), after the last glacial maximum, and in particular after around 13,000 BC, further climate warming took place and the environments changed from steppe-tundra to birch and pine woodland. It is probably at this time that England saw continuous occupation. Erosion has removed much of the Palaeolithic land surfaces and finds are typically residual. There are no known finds dated to this period within the study area.
- 4.2.2 The Mesolithic hunter-gather communities of the postglacial period (10,000–4000 BC) inhabited a still largely wooded environment. The river valleys and coast would have been favoured in providing a predictable source of food (from hunting and fishing) and water, as well as a means of transport and communication. Evidence of activity is characterised by flint tools rather than structural remains. There are no known finds dated to this period within the study area.
- 4.2.3 The Neolithic (4000–2000 BC), Bronze Age (2000–600 BC) and Iron Age (600 BC–AD 43) are traditionally seen as the time of technological change, settled communities and the construction of communal monuments. Farming was established and forest cleared for cultivation. An expanding population put pressure on available resources and necessitated the utilisation of previously marginal land.
- 4.2.4 Nearby geoarchaeological investigations at Lombard Wharf, c 200m west of the site (**HEA 4**) and at Bugsbys Way, 515m south-west of the site (**HEA 2**) provide a strong indication of what prehistoric conditions were like in the immediate vicinity of the site from the Mesolithic to Early Bronze Age periods. The boreholes drilled at Bugsbys Road (**HEA 2**) indicate a predominantly wetland area, interspersed with gravel 'eyots' (raised gravel islands). A major channel was inferred between the eyots comprising of thick peat deposits dated to these periods.
- 4.2.5 The later geoarchaeological investigation at 50 Lombard Wall (**HEA 4**) identified a similar underlying geology, with braided river channels, peat deposits, and gravel eyots. A number of boreholes also identified the presence of prehistoric activity in the area of the site. This comprised of cereal pollens and a disturbed assemblage of plant species (QUEST 2012), no archaeological remains were recovered.
- 4.2.6 Evidence for scrubby alder carr woodland was identified at the Greenwich Millennium Village site, 900m west of the site (**HEA 3**). These woodland environments, superseding the earlier channels would have likely occurred in the late Mesolithic to Bronze Age periods.

- 4.2.7 Consultation with Mary Ruddy, head of MOLA's geoarchaeology and environmental team, confirms that the site lay on the edge of a channel in the River Thames in the surrounding floodplain. Whilst this would not have been an attractive settlement location for early humans, the area was likely heavily exploited for wetland resources including fish, fowl and game. The site lies 1.6km north-east of Black Wall Lane, where MOLA geoarchaeologists identified the presence of a deep channel with a nearby timber trackway connecting the edge of the gravel terrace to eyots within the floodplain, and it is possible that similar activity occurred in the vicinity of the site.
- 4.2.8 Iron Age activity has been identified 2.2km east of the site at the site of the former Woolwich Power station. Excavations on the site uncovered the remains of two substantial ditches, up to 3.0m in depth surrounding two round houses and a collection of pits, over an area of about 15–17 acres. This has been interpreted as a possible riverside *oppidum* (town) (Philip 2010).
- 4.2.9 Worked and fire cracked undated prehistoric flint artefacts were uncovered during an evaluation in 1993, 660m south-west of the site (**HEA 7**). The significance of these finds is uncertain but indicate activity on the Upper Chalk slope close to the edge of the Thames floodplain.
- 4.2.10 As noted above, current understanding of the nature and extent of prehistoric activity in the area is very limited as there has been only one archaeological investigation (not including geoarchaeological surveys) in the study area. Any remains of this period will be deeply buried and largely inaccessible, other than where they are exposed on the Thames foreshore. The past activity will be very much linked to the nature of the subsurface topography, which in the absence of any geotechnical data for the site, is uncertain. Gravel eyots would have provided dry land suitable for various activities, prior to rising water levels in the later prehistoric (the presence of peat is also an indicator of former dry land where vegetation could form). Between the eyots, which may have been connected with timber trackways as found elsewhere the Lower Thames Estuary, was intertidal marsh. This may have been exploited for a range of predictable resources.

#### *Roman period (AD 43–410)*

- 4.2.11 Conditions for the development of the Roman settlement of *Londinium* (London) were laid out during the Roman invasion of Britain in AD 43 (Merrifield 1965, 23). Whereas Julius Caesar's campaigns into Britain halted at the River Thames, those under Claudius continued to the northern bank, with the construction of a bridge (*ibid.* 25) at a shallow point in the Thames. Although it is likely a settlement existed at present London by AD 50, the earliest documentary evidence for *Londinium* dates the town to c AD 60 (*ibid.*, 41), when it was considered a *colonia* (the highest category of Roman provincial town). The earliest remains place the centre of the town to the north of Lombard Street and Fenchurch Street c 8.3km north-west of the site, where the main administrative buildings and market place were established.
- 4.2.12 The projected line of the Roman road from Dover to London lies 1.5km south of the site. The road passes close to a Roman temple complex within Greenwich Park, 2.2km south-west of the site. Antiquarian excavations in the early 20th century, along with later investigations by the Department of Greater London Archaeology (now MOLA) and Southwark and Lambeth Archaeological Excavation Committee (SLAEC) in the late 20th century, uncovered the remains of three buildings and a ditch. Within the study area, the possible remains of a roadside fort are noted on the GLHER 700m south-east of the site (**HEA 8**), on the edge of the gravel terrace.
- 4.2.13 During the Roman period, the site would have lain within the marshland floodplain of the River Thames. As with the prehistoric, understanding of the nature and extent of Roman activity is limited in the study area due to the lack of past investigation. Resources of the intertidal marshes were important during this period, as demonstrated elsewhere along the Lower Thames Estuary in the form of pottery manufacture and salt production (from evaporation) and fish processing on a large scale. Evidence of such activity will be deeply buried.

#### *Early medieval (Saxon) period (AD 410–1066)*

- 4.2.14 Following the withdrawal of the Roman administration from England in the early 5th century AD the whole country fell into an extended period of socio-economic decline. In the 9th and 10th centuries, the Saxon Minster system began to be replaced by local parochial organisation, with

formal areas of land centred on nucleated settlements served by a parish church.

- 4.2.15 The name Charlton derives from the Old English words *ceorl* and *tun* meaning the farmstead of the freemen (*Dictionary of British Placenames*, 2011). In the time of Edward the Confessor, Charlton comprised of two manors held by the brothers Godwine and Alweard. The location of the early medieval settlement is unknown, but it is likely to be located in the area of the medieval settlement, 1.1km south of the site.
- 4.2.16 The area of Greenwich, 2.5km south-west of the site, contains evidence of an early medieval funerary landscape. The GLHER notes the presence of Anglo-Saxon inhumations in the area of Romney Road, and Park Vista, as well as a barrow group in Greenwich Park.
- 4.2.17 During the early medieval period, the site would have lain in marginal land, within marshland prone to flooding and possibly used pastoral purposes for the grazing of sheep. It would not have been suitable for settlement.

#### *Later medieval period (AD 1066–1485)*

- 4.2.18 Following the Norman Conquest (1066) the two manors of Charlton passed to William FitzOgier who held the land of Odo, the Bishop of Bayeaux and half-brother of King William the Conqueror. The land was assessed at one sulung, a unit of land measurement roughly equal to two hides unique to the county of Kent. The land was valued at £7, and contained eight acres of land, and woodland for five pigs (Williams and Martin ed. *Domesday* 1992; 16).
- 4.2.19 The main area of settlement at Charlton would have remained as it was in the early medieval period, 1.1km south of the site. No remains dating to this period have been found within the study area to date.
- 4.2.20 The site would have remained within the Thames floodplain as it had in preceding periods. It is likely that the marshland began to be drained and reclaimed, initially with the construction of river embankment walls and drainage channels dug around parcels of land. The purpose of reclamation would have been primarily economic, providing good-quality grazing for livestock and fertile land for crops. Reclamation is likely to have taken place in stages, with a number of successive river walls being constructed as more and more of the marshland was reclaimed out from the edge of the higher ground. The earliest map consulted, Rocque's map of 1746 (Fig 4), shows a road along the western side of (outside) the site which is almost certainly a river embankment (see below). This may well have been established towards the end of this period.

#### *Post-medieval period (AD 1485–present)*

- 4.2.21 The site lay within open reclaimed marshland for much of its history. Rocque's map of 1746 (Fig 4) shows the site occupied by three fields of both pasture and arable, adjacent to Manor Way (now Anchor and Hope Lane). This is almost certainly a flood defence embankment which will also have been used as a drove road for getting livestock down into the marsh. A lane to the east is probably also a river wall. These were typically constructed along the lines of creeks/fleets across the marsh. No such creek is shown by Rocque and it is likely that it had silted up and/or was infilled by this period. The most substantial development appears to have taken place 1.7km east of the site at 'The King's Yard', Woolwich. This marks the precursor to the Woolwich Arsenal and Laboratories, and denotes a Royal Dockyard. The dockyard was established in 1512 by King Henry VIII to construct his flagship *Henri a Grace Dieu*. A painting from 1790 of the dock facing south (not reproduced), clarifies details shown on the map including that the yard comprised four wet docks of various sizes, with large open spaces for the storing of raw materials. The Gun Wharf, where armaments were stored when a ship was in 'ordinary' was located to the east of Bell Water Gate; this later became the site of the Woolwich Arsenal.
- 4.2.22 The site does not appear on any further standard London maps, such as Horwood's map of 1799, Greenwood's Map of 1826, or Stanford's Map of 1862.
- 4.2.23 The Charlton parish map of 1826 (Fig 5) and the Tithe map of the parish of Charlton, dated to 1839 (Fig 6) are detailed maps but essentially show the site as it appears on Rocque's map. The site straddles three fields. The layout of these and surrounding fields is uniform indicating planned parcelling out of the marsh. Manor Way leads to a group of small buildings of unknown function beside the riverfront.

- 4.2.24 The Ordnance Survey 1st edition 25": mile map of 1869 (Fig 7) is a detailed map that shows little change within the site, which appears to remain largely agricultural in nature, now divided across two fields, however, increased industrialisation of the foreshore is shown. Charlton Wharf is shown 220m north-west of the site at the end of Anchor and Hope Lane, with a public house and a rope manufactory including rope walk immediately to the south-west of it. The main change within the site is the light railway line crossing the very eastern edge of the on a raised embankment and extending along the northern projection (Fig 11). This connects the Charlton Ballast Wharf on the foreshore to the ballast pits, 445m south-east of the site in the location of what is now The Valley, Charlton Athletic Football Ground (HEA 9).
- 4.2.25 The Ordnance Survey 2nd edition 25": mile map of 1896 (Fig 8) shows that by the end of the 19th century the agricultural fields that occupied the site have been amalgamated into one. The rail line from the Charlton ballast pits has been dismantled, although the embankment is still shown in the east of the site, extending to the foreshore. The industrialisation of the foreshore is shown to continue, spreading eastwards; a new 'silicate paint works' and associated jetty lies c 50m east of the site at what is now Riverside Wharf.
- 4.2.26 The Ordnance Survey 3rd edition 25": mile map of 1916 (Fig 9) shows the site is now occupied by allotment gardens. These may be related to the new housing estates laid out to the east of the site at Derrick Gardens and Atlas Gardens. On the opposite side of Anchor and Hope Lane, a glass bottle works has been established (in the area of the present Lombard Trading Estate). Along the foreshore a new motor spirit works and a chemical works have been established.
- 4.2.27 The London County Council (LCC) Bomb Damage Map of 1939–1945 (Fig 10) shows that the site became industrialised by the mid-20th century. The north of the site (Plot A) is wholly occupied by the buildings of a rope manufactory, although the covered rope walk itself extends beyond the site to the south. The southern part of the site (Plot B) lies within an open yard associated with the rope works. The LCC map shows no bombing damage to any of the buildings on the site. A site visit indicated that some of these buildings are still extant, but have been converted for use (Fig 13)
- 4.2.28 The Ordnance Survey 1:1250 scale map of 1953 (Fig 11) shows no change to the buildings in the site, but shows that the yard and rope works had a small rail system extending around the outside of the site and up to the foreshore along the northern projection. It is possible that this was a post-war addition to the site, or that it was not shown on the LCC Bomb Damage Map due to the small scale of that map.
- 4.2.29 The rope works appears to have remained in operation until the 1980s. The Ordnance Survey 1:1250 scale map of 1988 (not reproduced owing to quality) shows the rope manufactory buildings and rope walk have been removed and replaced with industrial units. The track has also been removed, leaving the site in its current state. The site visit noted the visible remains of the former trail track extending along the northern projection of the site (Fig 12).

## 5 Statement of significance

### 5.1 Introduction

- 5.1.1 The following section discusses past impacts on the site: generally from late 19th and 20th century developments which may have compromised archaeological survival, eg, building foundations or quarrying, identified primarily from historic maps, the site walkover survey, and information on the likely depth of deposits. It goes on to consider factors which are likely to have compromised asset survival.
- 5.1.2 In accordance with the NPPF, this is followed by a statement on the likely potential and significance of buried heritage assets within the site, derived from current understanding of the baseline conditions, past impacts, and professional judgement.

### 5.2 Factors affecting archaeological survival

#### *Natural geology*

- 5.2.1 There is no geotechnical data for the site. Based on BGS boreholes and the information from archaeological investigations in the vicinity, the predicted level of natural geology is:
- Current ground level within VIP Trading estate (Plot A) lies at 3.4–3.6m OD sloping generally down from north-east to south-west.
  - Current ground level within Rope Walk Business Park (Plot B) lies at 3.4–3.7m OD, sloping generally down from south to north.
  - The top of untruncated alluvium lies at –1.9 to –4.5m OD (5.5–7.9m below ground level/mbgl). It is not clear why the levels of the surface of the alluvium vary as the floodplain surface would have been flat.
  - The top of untruncated Gravel lies at –5.1 to –6.3m OD (8.7–9.7mbgl). This may extend deeper if within a palaeochannel. Within one borehole to the north the gravel surfaces is much deeper at 11.0mbgl, likely indicating the presence of a deep palaeochannel.
- 5.2.2 The subsurface gravels are likely to vary and the above levels are indicative only and would need to be clarified by geotechnical investigation. Between the top of alluvial deposits and the underside of the modern concrete ground slab there are very thick undated made ground deposits. These likely comprise redeposited alluvium with other materials forming successive dumping and reclamation layers.

#### *Past impacts*

- 5.2.3 Archaeological survival will be high for early remains due to the deep sequence of alluvial deposits and the 5.5–7.9m thick undated dump deposits above, which will have buried (and protected) any early remains within and beneath the alluvium.
- 5.2.4 The foundations of the late 20th century industrial units are likely to be slab or pad foundations owing to the design and nature of the buildings, and would have removed the top levels of post-medieval archaeological remains within their footprints.
- 5.2.5 Owing to the thick made ground deposits on the site, earlier and more deeply buried remains contained within alluvial deposits will be well preserved and intact.

#### *Likely depth/thickness of archaeological remains*

- 5.2.6 Post-medieval archaeological remains, relating to the industrial use of the site are likely to lie immediately beneath modern ground levels. Earlier remains, including palaeoenvironmental remains, are expected to lie beneath made ground deposits, 5.5–7.9m below ground level. Prehistoric remains such as fishtraps and hulked boats would be at the base of the alluvium, at a possible depth of 8.7–9.7mbgl (or deeper).

## 5.3 Archaeological potential and significance

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- 5.3.1 The nature of possible archaeological survival in the area of the proposed development is summarised here, taking into account the levels of natural geology and the level and nature of later disturbance and truncation discussed above.
- 5.3.2 *The site has a high potential for palaeoenvironmental remains.* For much of the site's history it has lain within open marshland in the River Thames floodplain. BGS boreholes indicate the presence of deep deposits of alluvium with possible peat horizons associated with the former intertidal marshes on the Thames floodplain. Such deposits of peat have a high potential to preserve palaeoenvironmental evidence (pollen, plant macro fossils), which if present can be utilised to reconstruct the past palaeoecology of the floodplain and environments within which prehistoric occupation occurred. Any fluvial and estuarine deposits also have the potential to preserve palaeoenvironmental remains (ostracods, foraminifera, diatoms) which can be utilised to reconstruct the past fluvial regimes and indicate the onset of tidal inundations and the transition to an estuarine river environment. Such remains would be considered to be of **low** or **medium** significance, derived from the evidential value of the remains.
- 5.3.3 *The site has a moderate potential for prehistoric remains.* There has been very little archaeological investigation in the area and the potential for this period is uncertain and based largely on assumptions about the floodplain environment. The site's location at the edge of a palaeochannel of the River Thames would not have been attractive for early human settlement, which was likely located further south on the Chalk terrace. Despite this, the predictable resources of the River Thames floodplain would have been exploited, for fish, fowl and game amongst other things. The landscape at the time would have comprised gravel eyots within deeper marshes and river channels, and efforts to make these accessible, such as the Bronze Age trackway at Blackwall Lane, undertaken. Any evidence of such wetland exploitation would be considered to be of **medium** significance based on their evidential value, and may include trackways, boats, mooring points, and fishtraps.
- 5.3.4 *The site has a low potential to contain Roman remains.* As with the prehistoric, current understanding of this period is limited in the area of the site. Although there is evidence in the wider area for Late Iron Age to Roman occupation in the form of a possible temple complex at Greenwich Park, an *Oppidum* at Woolwich, and a fort in Maryon Wilson Park, these sites are all confined to the higher gravel terrace. As in the preceding period, the site would have lain within marshland or the river channel and would not have been attractive for settlement. It is possible that the area was exploited for wetland resources in a similar manner to the preceding period, and any such remains, eg pottery and salt manufacture, fish processing etc would be considered of **medium** significance based on their evidential value. Such remains would however be very deeply buried.
- 5.3.5 *The site has a low potential for early and later medieval remains.* During the early and later medieval periods, the site would have lain within the manor of Charlton. The principal area of settlement was likely located to the south, in the area of Charlton Village on the gravel terrace; the site itself would have lain within the flood plain of the River Thames. As in preceding periods the site may have been exploited for wetland resources, or used as pastoral land.
- 5.3.6 *The site has a moderate potential for post-medieval remains.* Early historic mapping shows the site was occupied by open field in the 18th century, following successive land reclamation and wetland management schemes. Whilst evidence of post-medieval reclamation dumps would be considered of **very low** significance, evidence of wetland management, such as timber revetments and drainage channels would be considered of **low** significance, derived from evidential and historical values.
- 5.3.7 *The site has a high potential for post-medieval industrial remains.* The site was developed in the mid-20th century into a rope manufactory (possibly replacing an earlier manufactory along the foreshore to the north-west). This comprised a large building and part of the rope walk in the north east parcel, and a yard area in the south-west parcel. The manufactory was connected to surrounding industrial processes and a foreshore jetty by an internal railway system. The railway reached the foreshore along the northern projection of the site. Any such remains would be considered to be of **very low** or **low** significance based on their evidence of the industrial history of the Charlton foreshore area.

## 6 Impact of proposals

### 6.1 Proposals

- 6.1.1 The development proposals fall within two plots of land (Plot A and Plot B) and entail the demolition of existing buildings and erection of 11 buildings ranging from 2 to 28 storeys in height for Class C3 residential use, with Class B1 employment space and flexible uses comprising Class A1 (retail), Class A3 (Café/ Restaurant), Class D1 (Community Use) and Class D2 (Leisure) at ground floor and first floor level (Fig 14), alterations to existing vehicular access and creation of new pedestrian access from Hope and Anchor Lane and the riverside, creation of new areas of open space and landscaping together with the provision of associated car parking, cycle space, refuse and recycling storage, plant and all other associated works. The site would have a new basement level across c 50% of the footprint of the area of Plot A, beneath the residential towers (around 30% of the entire site footprint; Fig 15). This would extend 3.6mbgl, with an assumed extra 0.5m basement slab, bringing the formation level to 0.7m OD (2.9mbgl).
- 6.1.2 It is assumed for the purposes of assessment that the buildings would have piled foundations.

### 6.2 Implications

- 6.2.1 The identification of physical impacts on buried heritage assets within a site takes into account any activity which would entail ground disturbance, for example site set up works, remediation, landscaping and the construction of new basements and foundations. As it is assumed that the operational (completed development) phase would not entail any ground disturbance there would be no additional archaeological impact and this is not considered further.
- 6.2.2 It is outside the scope of this archaeological report to consider the impact of the proposed development on upstanding structures of historic interest, in the form of physical impacts which would remove, alter, or otherwise change the building fabric, or predicted changes to the historic character and setting of historic buildings and structures within the site or outside it.
- 6.2.3 The main potential for the site is for deeply buried palaeoenvironmental remains (low or medium significance), footings of a mid 20th century ropery (very low significance), post-medieval marsh reclamation (low or very low significance) and possibly very deeply buried (within the alluvium) prehistoric and Roman remains showing evidence of wetland exploitation (possibly high significance).

#### *Preliminary site works*

- 6.2.4 Works carried out as part of the initial site set up, including preliminary site stripping and demolition, the installation of site fencing and welfare facilities, is assumed for the purposes of this assessment to cause ground disturbance to a maximum depth of 0.5mbgl.
- 6.2.5 This would extend into undated made ground, which potentially contains remains of archaeological interest, and would entirely remove any remains to this excavation depth. This would include any remains of the mid-20th century industrial buildings that occupied the site. Earlier remains would be unaffected.

#### *New basements*

- 6.2.6 The construction of a new basement level to a formation level of around 0.7m OD as assumed for the purposes of this assessment would entirely remove any archaeological within its footprint contained within the made ground levels, to this depth. This would likely comprise remains of the mid-20th century industrial buildings, and earlier post-medieval water management features as may be present.
- 6.2.7 Earlier remains within the underlying alluvial deposits would not be affected.

### *New piled foundations*

- 6.2.8 Any archaeological remains within the footprint of each pile would be removed as the pile is driven downwards. The severity of the impact would therefore depend on the pile size, type and pile density. Where the piling layout is particularly dense, it is in effect likely to make any surviving archaeological remains, potentially preserved between each pile, inaccessible in terms of any archaeological investigation in the future.
- 6.2.9 The pile type is not currently known. Augered piles/continuous flight auger (CFA) piles would minimise the impact upon possible archaeological remains whereas vibro-compacted piles may cause additional impact through vibration and deformation of fragile surrounding remains, in particular at the level of the water table.
- 6.2.10 The insertion of pile caps and connecting ground beams, along with the excavation of a pile guide trench, typically extend no more than 1.0–1.5mbgl and would remove any archaeological remains within the footprint of these works to this depth.

## 7 Conclusion and recommendations

- 7.1.1 The Charlton Riverside site comprises two main parcels of land: Plot A to the north-east is the VIP Trading Estate, and Plot B to the south-west is Ropery Business Park, off Anchor and Hope Lane. The site does not contain any statutorily designated assets such as Scheduled Monuments or Listed Buildings, but it does lie within an Area of High Archaeological Potential.
- 7.1.2 For much of the site's history it would have been within the alluvial floodplain of the River Thames. Past geoarchaeological surveys in the area suggest that the floodplain was crossed by braided channels and dotted with eyots (raised gravel islands). Whilst this was not an attractive location for early human habitation, it would probably have been exploited for its natural resources, such as fish, fowl and game. This could be evidenced by such features as trackways, such as that found at Blackwall Lane, timber boats or fish traps, all of which would be well preserved in the alluvial deposits. This pattern of activity possibly continued through to the later medieval period, as the site lay some distance from identified areas of settlement.
- 7.1.3 In the mid-20th century, the site was developed for industrial use with a rope manufactory and rope walk occupying the entirety of the north-east parcel. An internal rail system was also established to move goods between the works and surrounding industrial buildings (including chemical plants and foundries), this extended towards a small wharf on the foreshore, along the northern projection of the site.
- 7.1.4 Archaeological survival on the site is expected to be high. The main impact to post-medieval remains arises from the existing late-20th century industrial unit buildings, which likely have slab or pad foundations. This would have removed the top 0.5m of remains, but owing to the thick made ground deposits, it is likely that remains survive beneath the truncation. The site is covered with 6.4–8.0m thick deposits of made ground, which will have protected underlying alluvial deposits.
- 7.1.5 The construction of a new basement level to an assumed formation level of 2.9m below ground level in the east of the site would entirely remove within its footprint any post-medieval remains contained within made ground deposits to this depth. Earlier, more deeply buried remains would remain intact. It is assumed that the proposed high rise, mid-rise and low rise residential buildings would have piled foundations, these would entirely remove any archaeological remains within the footprint of each pile as it is driven down, but truncated preservation is expected to remain between each pile
- 7.1.6 Table 2 summarises the known or likely buried assets within the site, their significance, and the impact of the proposed scheme on asset significance.

*Table 2: Impact upon heritage assets (prior to mitigation)*

Asset	Asset Significance	Impact of proposed scheme
Palaeoenvironmental remains within alluvial deposits  (High potential)	<b>Low or Medium</b>	Very localised: new piled foundations would remove any remains within the footprint of each pile. Remains may survive in a truncated state between each pile. Asset significance would be reduced locally to <b>negligible</b> .
Post-medieval industrial remains  (High potential)	<b>Very Low or Low</b>	Preliminary site strip would truncate any remains present beneath the modern ground slab, although remains would survive beneath the level of truncation.
Post-medieval wetland management such as timber revetments and reclamation dumps (Moderate potential; high for dumps)	<b>Low</b> (very low for reclamation dumps)	In the north-east of the site, the proposed basement level would entirely remove any such remains within its footprint. Across the remainder of the site, remains would be removed by new piled foundations Asset significance would be reduced to <b>negligible</b> .

<b>Asset</b>	<b>Asset Significance</b>	<b>Impact of proposed scheme</b>
Evidence of prehistoric wetland exploitation (Moderate potential)	<b>Medium</b>	New piled foundations would remove any remains within the footprint of each pile. Remains may survive in a truncated state between each pile. Asset significance would be reduced locally to <b>negligible</b> .
Evidence of Roman wetland exploitation (Low potential)	<b>Medium</b>	

- 7.1.7 In light of the size and nature of the proposed development and its location within an AHAP, further archaeological investigation may be required. Geoarchaeological boreholes and sampling could serve as a feasible mitigation strategy for deeply buried remains affected by piling, if significant piling is proposed (ie dense layout/large piles etc). This would clarify the nature of the subsurface topography of prehistoric and later landscapes and past environments of the Thames floodplain. Such work could be combined with a geotechnical survey carried out for engineering purposes.
- 7.1.8 Any archaeological work could be carried out under the terms of a standard archaeological planning condition and would need to be undertaken in accordance with an approved Written Scheme of Investigation (WSI) and under the granting of planning consent.
- 7.1.9 Whilst the significance of the post-medieval remains is not considered sufficient to warrant any further archaeological work, it presents an opportunity for drawing out the site's 20th century industrial history. MOLA's community outreach team, in particular the flagship Time Truck programme could be used in this instance to highlight the site's potential for place-making and community engagement.

## 8 Gazetteer of known historic environment assets

- 8.1.1 The table below represents a gazetteer of known historic environment sites and finds within the 1km-radius study area around the site. The gazetteer should be read in conjunction with Fig 2.
- 8.1.2 The GLHER data contained within this gazetteer was obtained on 22/08/2016 and is the copyright of Historic England 2016.
- 8.1.3 Historic England statutory designations data © Historic England 2015. Contains Ordnance Survey data © Crown copyright and database right 2016. The Historic England GIS Data contained in this material was obtained in September 2015. The most publicly available up to date Historic England GIS Data can be obtained from <http://www.historicengland.org.uk>.

### Abbreviations

MOLA – Museum of London Archaeology (formerly MOLAS)

HER – Historic Environment Record

QUEST – Quaternary Scientific

TDP – Thames Discovery Programme

HEA No.	Description	Site code/ HER No.
1	<p><b>Charlton Foreshore (Stone Wharf, Anchor and Hope Lane)</b>  <i>Foreshore Survey and Recording. TDP 2012</i>                      Recording continued on the stack (or platform) of ships' timbers which includes frame, keel and keelson timbers from HMS Duke of Wellington, launched 1852, a first-rate ship of the line, and frame timbers from one of Anson, Edgar or Hannibal, all second-rates launched in 1860, 1858 and 1854 respectively, along with armour plate from the proto-battleship Ajax, launched in 1880. All of the above ships were broken up in 1904–5. A further causeway structure has been identified, probably built between 1874 and 1879, which comprises timbers from probably two vessels of brig/sloop size launched in 1854–1861.</p>	FGW14
2	<p><b>Greenwich Industrial Estate, Bugsby's Wharf</b>  <i>Geoarchaeological Survey. MOLAS 2002</i>                      Sediments and peat layers were recorded above the floodplain gravels in three auger holes. The sediments probably related to sand and gravel bar formation within or at the edge of braided channels that would have been common at the southern margins of the River Thames during the prehistoric periods of the Holocene epoch. A possible channel was inferred from sediments within one of the auger holes. The peat layers probably represent swampy areas that formed during sea level fluctuations in the prehistoric period between the gravel islands, or eyots. Radiocarbon dating of the main peat unit suggests formation from the late Mesolithic to the Middle Bronze Age. Modern construction had truncated the whole site.</p>	GIE02
3	<p><b>Greenwich Millennium Village</b>  <i>Geoarchaeological Survey. MOLA 2013</i>                      The early Holocene sands were found to be substantial with the bands of clays within them, often rich in dissolved chalk, indicating fluctuations in the early fluvial environment. The mid Holocene peats / organic silty clays, indicative of the change from channel marginal deposits to scrubby alder carr woodland, were seen in the geoarchaeological boreholes to give a more nuanced picture of the nature of the inundations/flooding than that recorded in the geotechnical logs. The early historic to post medieval alluvial clays have been found to be more substantial than predicted from the geotechnical logs. In GA1 &amp; GA2 the clays have revealed discrete phases of post medieval dumping or mixing of material as well as possible soil horizons. Unfortunately however, contamination (most probably diesel) was found to have percolated down from the overlying made ground to varying extents</p>	GMP12

HEA No.	Description	Site code/ HER No.
4	<p><b>50 Lombard Wall, Charlton</b>  <i>Geoarchaeological evaluation. QUEST, 2011</i></p> <p>Four geoarchaeological boreholes were put down across the site at selected locations. Combined with previous geotechnical records, a model of the sub-surface stratigraphy indicates a sequence of Shepperton Gravel overlain by sands and organic sands, alluvium (including peat) and made ground. The Shepperton Gravel undulates across the site from north down to its centre. Assessment of three boreholes indicates that peat accumulation began during the Late Neolithic/Early Bronze Age to Middle Bronze Age. Possible evidence for human activity on the gravel islands is indicated in boreholes towards the centre and south of the site, while the presence of yet towards the north provides new evidence for its expansion and decline in this part of the Lower Thames Valley.</p>	LBW11
5	<p><b>Royal Wharf</b>  <i>Geoarchaeological Survey. QUEST 2014</i></p> <p>An archaeological deposit model of the site was produced. A Shepperton Gravel surface was found to drop away steeply at the south of the site, towards the River Thames. Alluvium and peat overlay the Shepperton Gravel, the peat had an uneven distribution across the site.</p>	RWH14
6	<p><b>Thames Barrier Security Works</b>  <i>Geoarchaeological Survey. MOLA 2010</i></p> <p>No archaeological remains were found but deposits of geoarchaeological interest were identified. The main deposits recorded were clast supported gravels overlain by peat and organic clays, alluvial clay and made ground, which included redeposited alluvium and gravel. The peats and organic clay deposits may be of a Mesolithic date in the deeper areas of the site and Neolithic to Bronze Age across the rest of the site</p>	UNT10
7	<p><b>Victoria Way, Charlton</b>  <i>Evaluation. MOLAS, 1993</i></p> <p>Natural sands were truncated though ploughmarks, dating to the 17th to 19th century, were revealed. Other features included postholes, relating to fences and gates, and later foundations. Worked and fire cracked prehistoric flints were also recorded</p>	VWC93 071423/00/00
8	<p><b>Maryon Park/Hanging Wood</b></p> <p>Roman remains were found during gravel extraction and a rescue excavation carried out by local amateurs recording a Roman settlement. The site of a ditched enclosure and settlement dating to the Roman period is noted on the GLHER, as is the findspot of a Roman pottery vessel</p>	070388/00/00 070229/00/00 MLO99540
9	<p><b>Valley Grove</b></p> <p>Chalk and sand pit noted on the GLHER</p>	071798/00/00
10	<p><b>Findspot- Willoughby Walk</b></p> <p>Post-medieval finds are noted at this location found through dredging. They include a lamp fitting, valve, rivet, hammer head, gauge, two unidentified metal objects, two net sinkers, and pulley</p>	MLO107613 MLO107614 MLO107615 MLO107616 MLO107489 MLO89686 MLO107038 MLO50311 MLO107403
11	<p><b>Findspot – Willoughby Walk</b></p> <p>A mammoth tooth is noted on the GLHER</p>	MLO104823
12	<p><b>Findspot – Bradfield Road (River Thames)</b></p> <p>Part of an 11th to mid-12th century cooking pot was recovered from the River Thames near Silvertown, Newham.</p>	MLO3160

# 9 Planning framework

## 9.1 National Planning Policy Framework

9.1.1 The Government issued the National Planning Policy Framework (NPPF) in March 2012 (DCLG 2012) and supporting Planning Practice Guidance in 2014 (DCLG 2014). One of the 12 core principles that underpin both plan-making and decision-taking within the framework is to 'conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations' (DCLG 2012 para 17). It recognises that heritage assets are an irreplaceable resource (para 126), and requires the significance of heritage assets to be considered in the planning process, whether designated or not. The contribution of setting to asset significance needs to be taken into account (para 128). The NPPF encourages early engagement (i.e. pre-application) as this has significant potential to improve the efficiency and effectiveness of a planning application and can lead to better outcomes for the local community (para 188).

9.1.2 NPPF Section 12: Conserving and enhancing the historic environment, is produced in full below:

**Para 126.** Local planning authorities should set out in their Local Plan a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. In doing so, they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance. In developing this strategy, local planning authorities should take into account:

- the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
- the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;
- the desirability of new development making a positive contribution to local character and distinctiveness; and
- opportunities to draw on the contribution made by the historic environment to the character of a place.

**Para 127.** When considering the designation of conservation areas, local planning authorities should ensure that an area justifies such status because of its special architectural or historic interest, and that the concept of conservation is not devalued through the designation of areas that lack special interest.

**Para 128.** 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.

**Para 129.** Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.

**Para 130.** Where there is evidence of deliberate neglect of or damage to a heritage asset the deteriorated state of the heritage asset should not be taken into account in any decision.

**Para 131.** In determining planning applications, local planning authorities should take account of:

- the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
- the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and

- the desirability of new development making a positive contribution to local character and distinctiveness.

**Para 132:** When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I and II\* listed buildings, grade I and II\* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.

**Para 133.** Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

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

**Para 134.** Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.

**Para 135.** The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

**Para 136.** Local planning authorities should not permit loss of the whole or part of a heritage asset without taking all reasonable steps to ensure the new development will proceed after the loss has occurred.

**Para 137.** Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites and within the setting of heritage assets to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably.

**Para 138.** Not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance. Loss of a building (or other element) which makes a positive contribution to the significance of the Conservation Area or World Heritage Site should be treated either as substantial harm under paragraph 133 or less than substantial harm under paragraph 134, as appropriate, taking into account the relative significance of the element affected and its contribution to the significance of the Conservation Area or World Heritage Site as a whole.

**Para 139.** Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.

**Para 140.** Local planning authorities should assess whether the benefits of a proposal for enabling development, which would otherwise conflict with planning policies but which would secure the future conservation of a heritage asset, outweigh the disbenefits of departing from those policies.

**Para 141.** Local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.

## 9.2 Greater London regional policy

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### *The London Plan*

- 9.2.1 The overarching strategies and policies for the whole of the Greater London area are contained within the London Plan of the Greater London Authority (GLA March 2015). Policy 7.8 relates to Heritage Assets and Archaeology:
- A. London's heritage assets and historic environment, including listed buildings, registered historic parks and gardens and other natural and historic landscapes, conservation areas, World Heritage Sites, registered battlefields, scheduled monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and of utilising their positive role in place shaping can be taken into account.
  - B. Development should incorporate measures that identify, record, interpret, protect and, where appropriate, present the site's archaeology.
  - C. Development should identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate.
  - D. Development affecting heritage assets and their settings should conserve their significance, by being sympathetic to their form, scale, materials and architectural detail.
  - E. New development should make provision for the protection of archaeological resources, landscapes and significant memorials. The physical assets should, where possible, be made available to the public on-site. Where the archaeological asset or memorial cannot be preserved or managed on-site, provision must be made for the investigation, understanding, recording, dissemination and archiving of that asset.
  - F. Boroughs should, in LDF policies, seek to maintain and enhance the contribution of built, landscaped and buried heritage to London's environmental quality, cultural identity and economy as part of managing London's ability to accommodate change and regeneration.
  - G. Boroughs, in consultation with English Heritage [now named Historic England], Natural England and other relevant statutory organisations, should include appropriate policies in their LDFs for identifying, protecting, enhancing and improving access to the historic environment and heritage assets and their settings where appropriate, and to archaeological assets, memorials and historic and natural landscape character within their area.
- 9.2.2 Para. 7.31 supporting Policy 7.8 notes that 'Substantial harm to or loss of a designated heritage asset should be exceptional, with substantial harm to or loss of those assets designated of the highest significance being wholly exceptional. Where a development proposal will lead to less than substantial harm to the significance of a designated asset, this harm should be weighed against the public benefits of the proposal, including securing its optimal viable use. Enabling development that would otherwise not comply with planning policies, but which would secure the future conservation of a heritage asset should be assessed to see if the benefits of departing from those policies outweigh the disbenefits.'
- 9.2.3 It further adds (para. 7.31b) 'Where there is evidence of deliberate neglect of and/or damage to a heritage asset the deteriorated state of that asset should not be taken into account when making a decision on a development proposal'.
- 9.2.4 Para. 7.32 recognises the value of London's heritage: '...where new development uncovers an archaeological site or memorial, these should be preserved and managed on-site. Where this is not possible provision should be made for the investigation, understanding, dissemination and archiving of that asset'.

## 9.3 Local planning policy

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- 9.3.1 Following the Planning and Compulsory Purchase Act 2004, Planning Authorities have replaced their Unitary Development Plans, Local Plans and Supplementary Planning Guidance with a new system of Local Development Frameworks (LDFs). UDP policies are either 'saved' or 'deleted'. In most cases archaeology policies are likely to be 'saved' because there have been no significant changes in legislation or advice at a national level.
- 9.3.2 The Royal Borough of Greenwich adopted its Core Strategy in July 2014. Policy DH(m) covers archaeology and states:

### **Policy DH(m) Archaeology**

The Royal Borough will expect applicants to properly assess and plan for the impact of proposed developments on archaeological remains where they fall within 'Areas of High Archaeological Potential (AHAPs)' as shown on Figure 5 [pg. 113 of the Core Strategy]. In certain instances preliminary archaeological site investigations may be required before proposals are considered. The Royal Borough will seek to secure the cooperation of developers in the excavation, recording and publication of archaeological finds before development takes place by use of planning conditions/legal agreements as appropriate.

At identified sites of known archaeological remains of national importance, including scheduled monuments, there will be a presumption in favour of the physical preservation of the remains in situ and to allow for public access and display and to preserve their settings. For sites of lesser importance the Royal Borough will seek to preserve the remains in situ, but where this is not feasible the remains should either be investigated, excavated and removed from the site, or investigated, excavated and recorded before destruction. Appropriate conditions/legal agreements may be used to ensure this is satisfied.

## 10 Determining significance

10.1.1 'Significance' lies in the value of a heritage asset to this and future generations because of its heritage interest, which may be archaeological, architectural, artistic or historic. Archaeological interest includes an interest in carrying out an expert investigation at some point in the future into the evidence a heritage asset may hold of past human activity, and may apply to standing buildings or structures as well as buried remains. Known and potential heritage assets within the site and its vicinity have been identified from national and local designations, HER data and expert opinion. The determination of the significance of these assets is based on statutory designation and/or professional judgement against four values (EH 2008):

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

10.1.2 Table 3 gives examples of the significance of designated and non-designated heritage assets.

*Table 3: Significance of heritage assets*

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

10.1.3 Unless the nature and exact extent of buried archaeological remains within any given area has been determined through prior investigation, significance is often uncertain.

## 11 Non-archaeological constraints

- 11.1.1 It is anticipated that live services will be present on the site, the locations of which have not been identified by this archaeological report. Other than this, no other non-archaeological constraints to any archaeological fieldwork have been identified within the site.
- 11.1.2 Note: the purpose of this section is to highlight to decision makers any relevant non-archaeological constraints identified during the study, that might affect future archaeological field investigation on the site (should this be recommended). The information has been assembled using only those sources as identified in section 2 and section 14.4, in order to assist forward planning for the project designs, working schemes of investigation and risk assessments that would be needed prior to any such field work. MOLA has used its best endeavours to ensure that the sources used are appropriate for this task but has not independently verified any details. Under the Health & Safety at Work Act 1974 and subsequent regulations, all organisations are required to protect their employees as far as is reasonably practicable by addressing health and safety risks. The contents of this section are intended only to support organisations operating on this site in fulfilling this obligation and do not comprise a comprehensive risk assessment.

## 12 Glossary

<i>Alluvium</i>	Sediment laid down by a river. Can range from sands and gravels deposited by fast flowing water and clays that settle out of suspension during overbank flooding. Other deposits found on a valley floor are usually included in the term alluvium (eg peat).
<i>Archaeological Priority Area/Zone</i>	Areas of archaeological priority, significance, potential or other title, often designated by the local authority.
<i>Brickearth</i>	A fine-grained silt believed to have accumulated by a mixture of processes (eg wind, slope and freeze-thaw) mostly since the Last Glacial Maximum around 17,000BP.
<i>B.P.</i>	Before Present, conventionally taken to be 1950
<i>Bronze Age</i>	2,000–600 BC
<i>Building recording</i>	Recording of historic buildings (by a competent archaeological organisation) is undertaken <i>'to document buildings, or parts of buildings, which may be lost as a result of demolition, alteration or neglect'</i> , amongst other reasons. Four levels of recording are defined by Royal Commission on the Historical Monuments of England (RCHME) and Historic England. Level 1 (basic visual record); Level 2 (descriptive record), Level 3 (analytical record), and Level 4 (comprehensive analytical record)
<i>Built heritage</i>	Upstanding structure of historic interest.
<i>Colluvium</i>	A natural deposit accumulated through the action of rainwash or gravity at the base of a slope.
<i>Conservation area</i>	An area of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance. Designation by the local authority often includes controls over the demolition of buildings; strengthened controls over minor development; and special provision for the protection of trees.
<i>Cropmarks</i>	Marks visible from the air in growing crops, caused by moisture variation due to subsurface features of possible archaeological origin (i.e. ditches or buried walls).
<i>Cut-and-cover [trench]</i>	Method of construction in which a trench is excavated down from existing ground level and which is subsequently covered over and/or backfilled.
<i>Cut feature</i>	Archaeological feature such as a pit, ditch or well, which has been cut into the then-existing ground surface.
<i>Devensian</i>	The most recent cold stage (glacial) of the Pleistocene. Spanning the period from c 70,000 years ago until the start of the Holocene (10,000 years ago). Climate fluctuated within the Devensian, as it did in other glacials and interglacials. It is associated with the demise of the Neanderthals and the expansion of modern humans.
<i>Early medieval</i>	AD 410–1066. Also referred to as the Saxon period.
<i>Evaluation (archaeological)</i>	A limited programme of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area.
<i>Excavation (archaeological)</i>	A programme of controlled, intrusive fieldwork with defined research objectives which examines, records and interprets archaeological remains, retrieves artefacts, ecofacts and other remains within a specified area. The records made and objects gathered are studied and the results published in detail appropriate to the project design.
<i>Findspot</i>	Chance find/antiquarian discovery of artefact. The artefact has no known context, is either residual or indicates an area of archaeological activity.
<i>Geotechnical</i>	Ground investigation, typically in the form of boreholes and/or trial/test pits, carried out for engineering purposes to determine the nature of the subsurface deposits.
<i>Head</i>	Weathered/soliflucted periglacial deposit (ie moved downslope through natural processes).
<i>Heritage asset</i>	A building, monument, site, place, area or landscape positively identified as having a degree of significance meriting consideration in planning decisions. Heritage assets are the valued components of the historic environment. They include designated heritage assets and assets identified by the local planning authority (including local listing).
<i>Historic environment assessment</i>	A written document whose purpose is to determine, as far as is reasonably possible from existing records, the nature of the historic environment resource/heritage assets within a specified area.
<i>Historic Environment Record (HER)</i>	Archaeological and built heritage database held and maintained by the County authority. Previously known as the Sites and Monuments Record
<i>Holocene</i>	The most recent epoch (part) of the Quaternary, covering the past 10,000 years during which time a warm interglacial climate has existed. Also referred to as the 'Postglacial' and (in Britain) as the 'Flandrian'.
<i>Iron Age</i>	600 BC–AD 43

<i>Later medieval</i>	AD 1066 – 1500
<i>Last Glacial Maximum</i>	Characterised by the expansion of the last ice sheet to affect the British Isles (around 18,000 years ago), which at its maximum extent covered over two-thirds of the present land area of the country.
<i>Locally listed building</i>	A structure of local architectural and/or historical interest. These are structures that are not included in the Secretary of State's Listing but are considered by the local authority to have architectural and/or historical merit
<i>Listed building</i>	A structure of architectural and/or historical interest. These are included on the Secretary of State's list, which affords statutory protection. These are subdivided into Grades I, II* and II (in descending importance).
<i>Made Ground</i>	Artificial deposit. An archaeologist would differentiate between modern made ground, containing identifiably modern inclusion such as concrete (but not brick or tile), and undated made ground, which may potentially contain deposits of archaeological interest.
<i>Mesolithic</i>	12,000 – 4,000 BC
<i>National Record for the Historic Environment (NRHE)</i>	National database of archaeological sites, finds and events as maintained by Historic England in Swindon. Generally not as comprehensive as the country HER.
<i>Neolithic</i>	4,000 – 2,000 BC
<i>Ordnance Datum (OD)</i>	A vertical datum used by Ordnance Survey as the basis for deriving altitudes on maps.
<i>Palaeo-environmental</i>	Related to past environments, i.e. during the prehistoric and later periods. Such remains can be of archaeological interest, and often consist of organic remains such as pollen and plant macro fossils which can be used to reconstruct the past environment.
<i>Palaeolithic</i>	700,000–12,000 BC
<i>Palaeochannel</i>	A former/ancient watercourse
<i>Peat</i>	A build-up of organic material in waterlogged areas, producing marshes, fens, mires, blanket and raised bogs. Accumulation is due to inhibited decay in anaerobic conditions.
<i>Pleistocene</i>	Geological period pre-dating the Holocene.
<i>Post-medieval</i>	AD 1500–present
<i>Preservation by record</i>	Archaeological mitigation strategy where archaeological remains are fully excavated and recorded archaeologically and the results published. For remains of lesser significance, preservation by record might comprise an archaeological watching brief.
<i>Preservation in situ</i>	Archaeological mitigation strategy where nationally important (whether Scheduled or not) archaeological remains are preserved <i>in situ</i> for future generations, typically through modifications to design proposals to avoid damage or destruction of such remains.
<i>Registered Historic Parks and Gardens</i>	A site may lie within or contain a registered historic park or garden. The register of these in England is compiled and maintained by Historic England.
<i>Residual</i>	When used to describe archaeological artefacts, this means not <i>in situ</i> , ie Found outside the context in which it was originally deposited.
<i>Roman</i>	AD 43–410
<i>Scheduled Monument</i>	An ancient monument or archaeological deposits designated by the Secretary of State as a 'Scheduled Ancient Monument' and protected under the Ancient Monuments Act.
<i>Site</i>	The area of proposed development
<i>Site codes</i>	Unique identifying codes allocated to archaeological fieldwork sites, eg evaluation, excavation, or watching brief sites.
<i>Study area</i>	Defined area surrounding the proposed development in which archaeological data is collected and analysed in order to set the site into its archaeological and historical context.
<i>Solifluction, Soliflucted</i>	Creeping of soil down a slope during periods of freeze and thaw in periglacial environments. Such material can seal and protect earlier landsurfaces and archaeological deposits which might otherwise not survive later erosion.
<i>Stratigraphy</i>	A term used to define a sequence of visually distinct horizontal layers (strata), one above another, which form the material remains of past cultures.
<i>Truncate</i>	Partially or wholly remove. In archaeological terms remains may have been truncated by previous construction activity.
<i>Watching brief (archaeological)</i>	An archaeological watching brief is 'a formal programme of observation and investigation conducted during any operation carried out for non–archaeological reasons.'

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## 13.2 Other Sources

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- British Geological Survey online historic geology borehole data and digital drift and solid geology data
- Greater London Historic Environment Record
- Groundsure historic Ordnance Survey mapping
- Historic England designation data
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## 13.3 Cartographic sources

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- Rocque, 1746 'Exact Survey of the City of London Westminster and Southwark and the Country 10 Miles Round', reproduced in Margary, H, 1971 '*Exact Survey of the City of London Westminster and Southwark and the Country 10 Miles Round*' by John Rocque, 1746, Margary in assoc Guildhall Library, Kent
- LCC, 1939–45 / LTS, 2005. *London County Council Bomb Damage Maps 1939–45, reproduced by the London Topographical Society and London Metropolitan Archives*. London Topographical Society Publication No 164. 2005
- Ordnance Survey maps*  
Ordnance Survey 1st edition 25" map (1869)

Ordnance Survey 2nd edition 25" map (1896)  
 Ordnance Survey 3rd edition 25" map (1916)  
 Ordnance Survey 1:2500 scale map (1953)

*Engineering/Architects drawings*

Simpson Haugh and Partners

Existing site plan Drwg 10046-A-DRG-EX-G000-2130-PL, December 2016

Proposed ground floor plan Drwg No 10046-A-DRG-Z0-G100-2000, July 2016, Rev E 03/10/2016

Proposed basement level plan Drwg No 10046-A-DRG-Z0-G100-2099, August 2016, Rev C 03/10/2016

### 13.4 Available site survey information checklist

Information from client	Available	Format	Obtained
Plan of existing site services (overhead/buried)	not known	-	-
Levelled site survey as existing (ground and buildings)	Y	Pdf/CAD	Y
Contamination survey data ground and buildings (inc. asbestos)	not known	-	-
Geotechnical report	not known	-	-
Envirocheck report	not known	-	-
Information obtained from non-client source	Carried out	Internal inspection of buildings	
Site inspection	Partial	N	

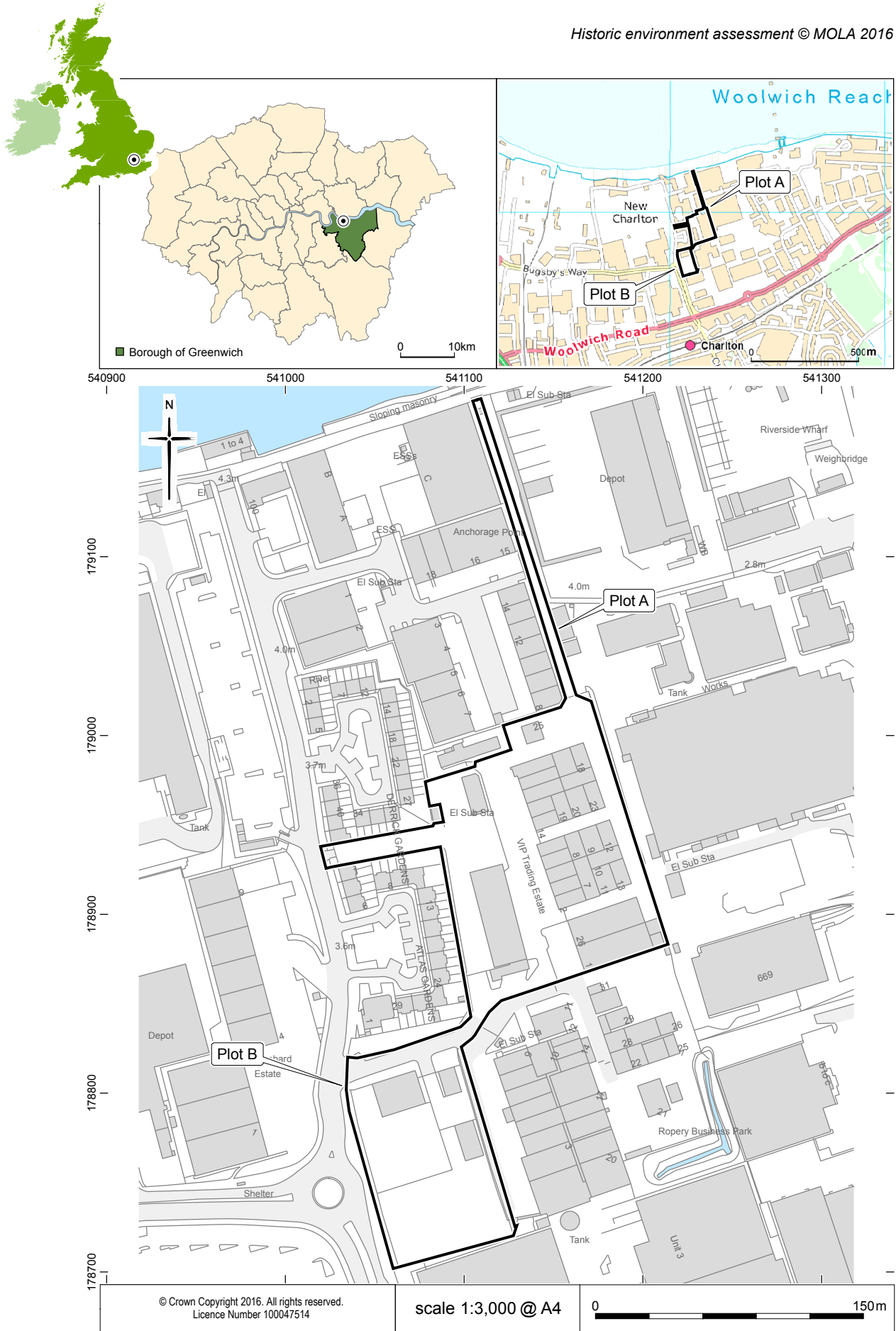


Fig 1 Site location

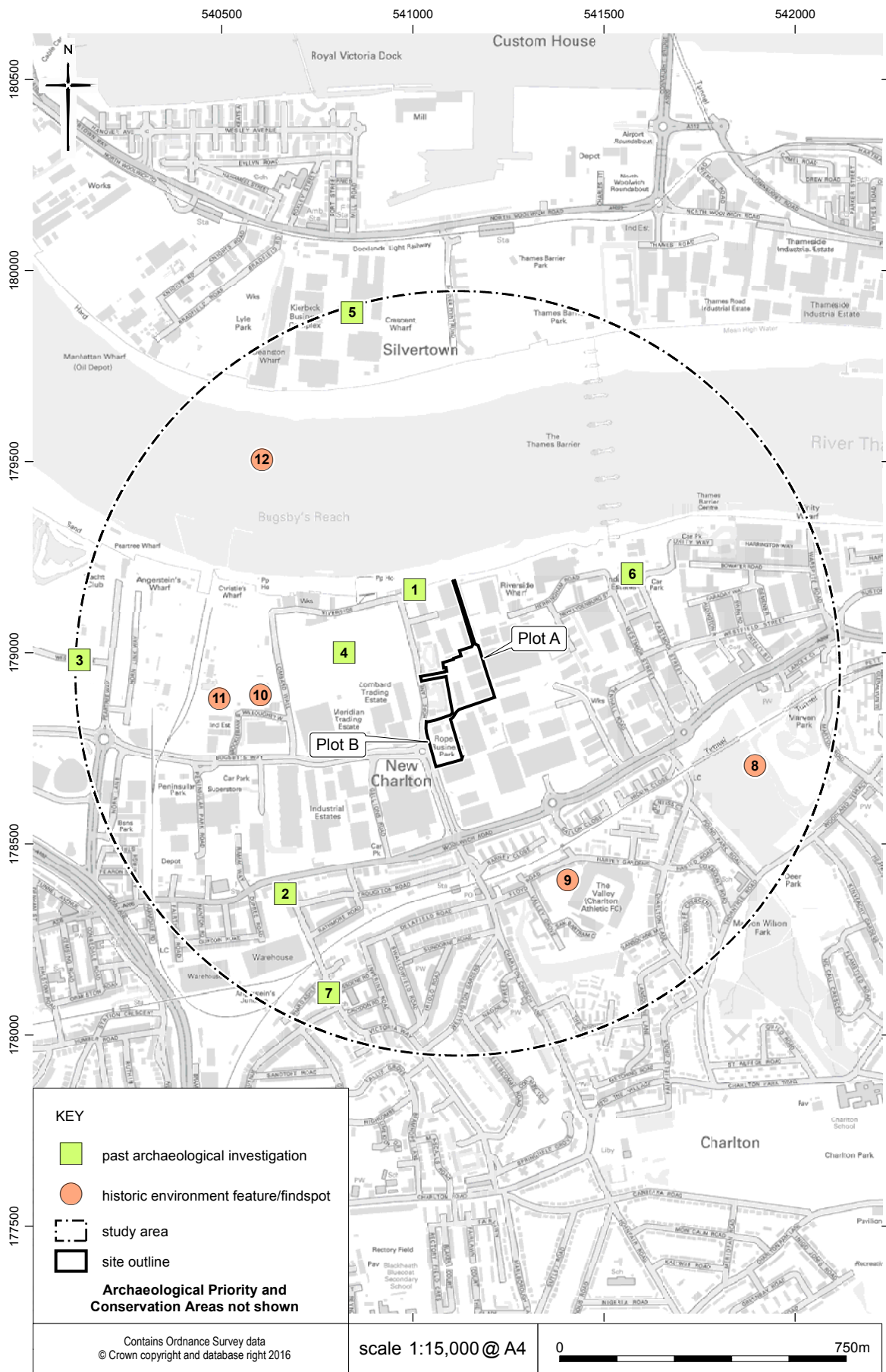


Fig 2 Historic environment features map

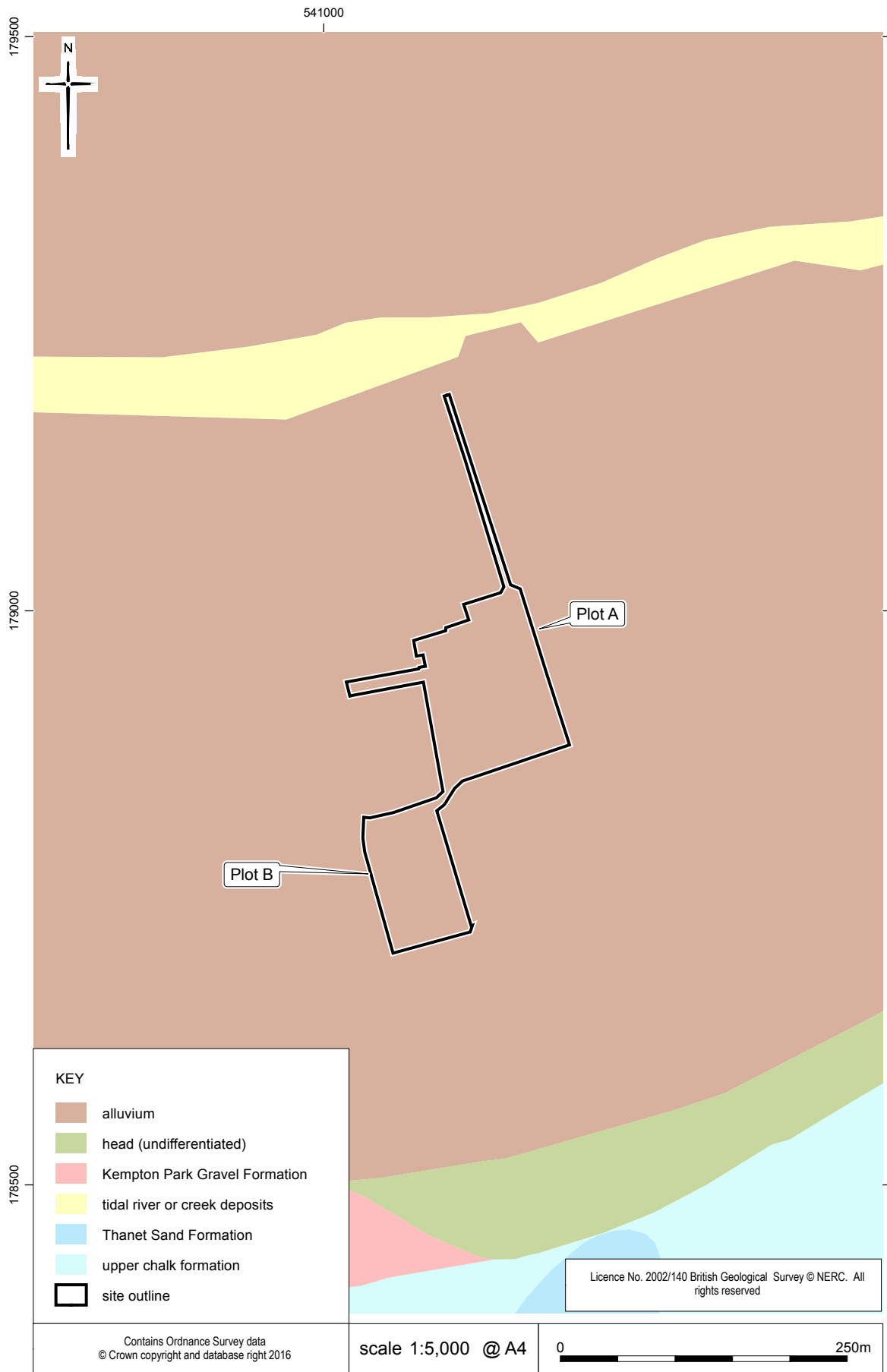


Fig 3 Geological map (BGS digital data)



Fig 4 Rocque's map of 1746

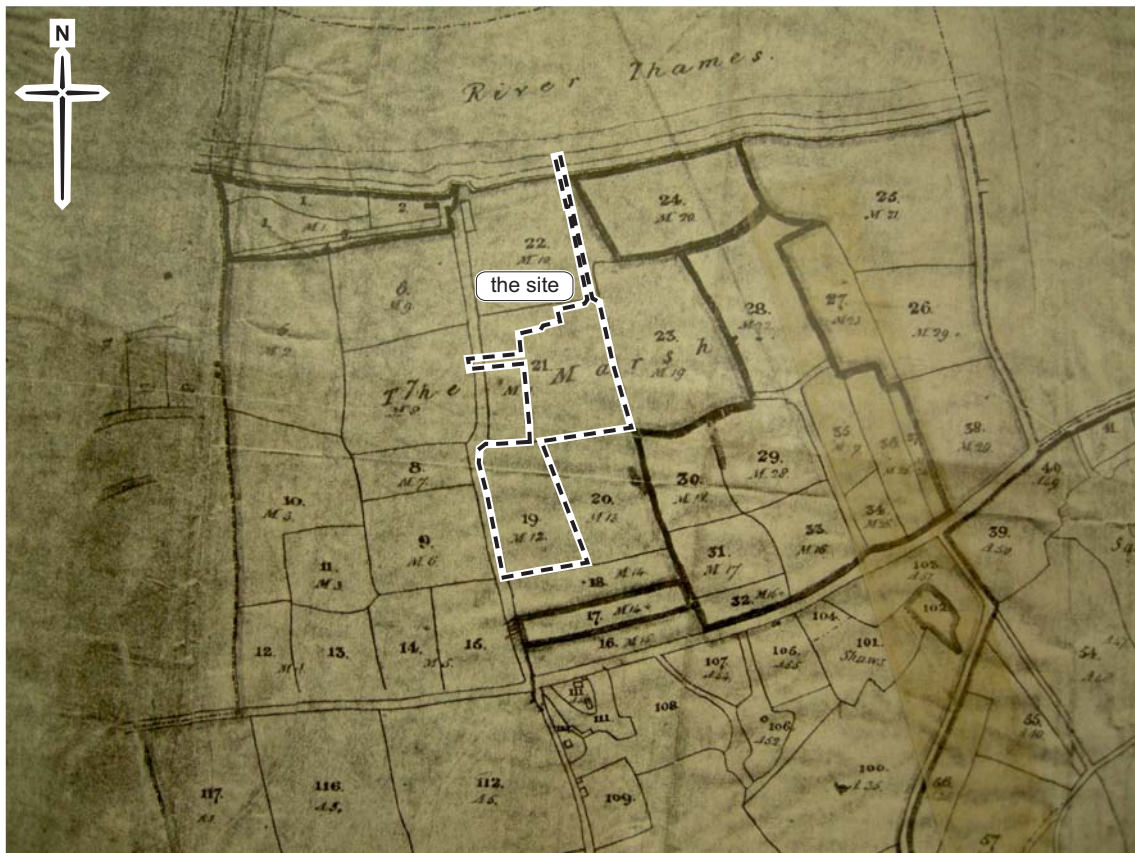


Fig 5 Charlton parish map of 1826 (Greenwich Heritage Centre)

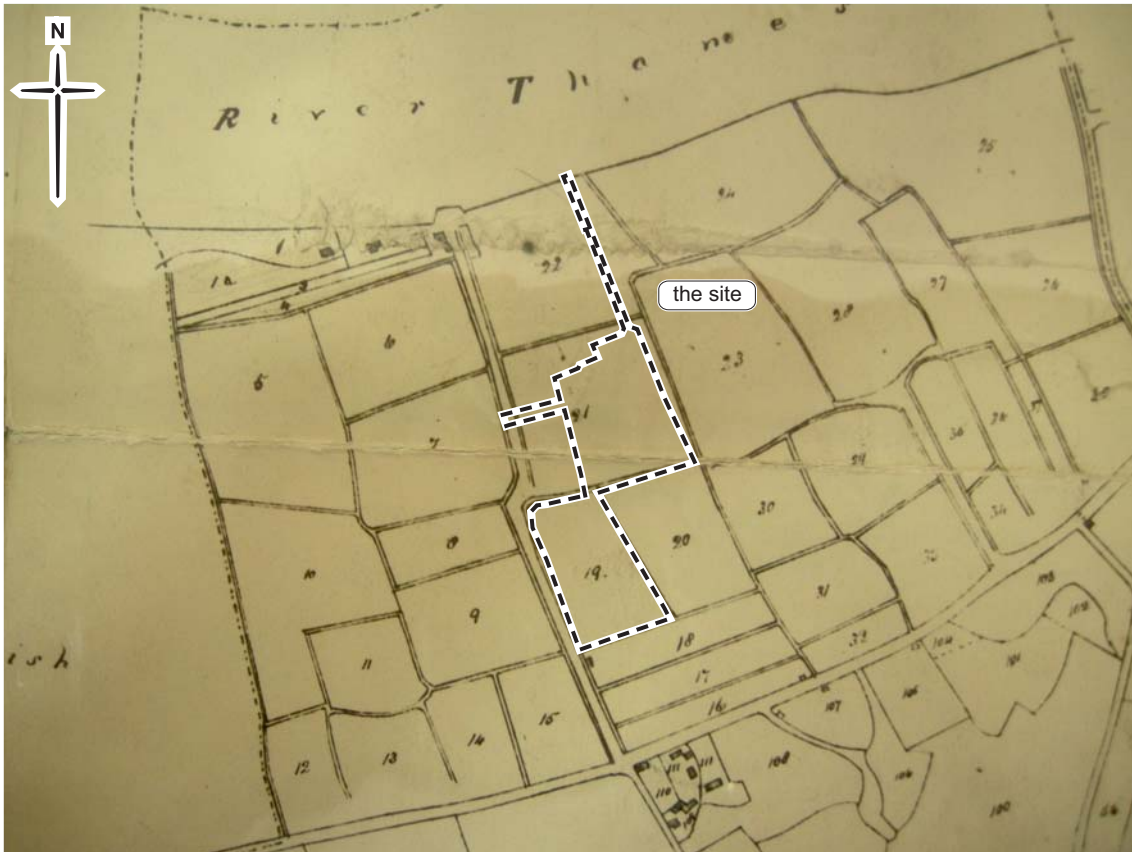


Fig 6 Tithe map of the parish of Charlton, dated to 1839 (Greenwich Heritage Centre)

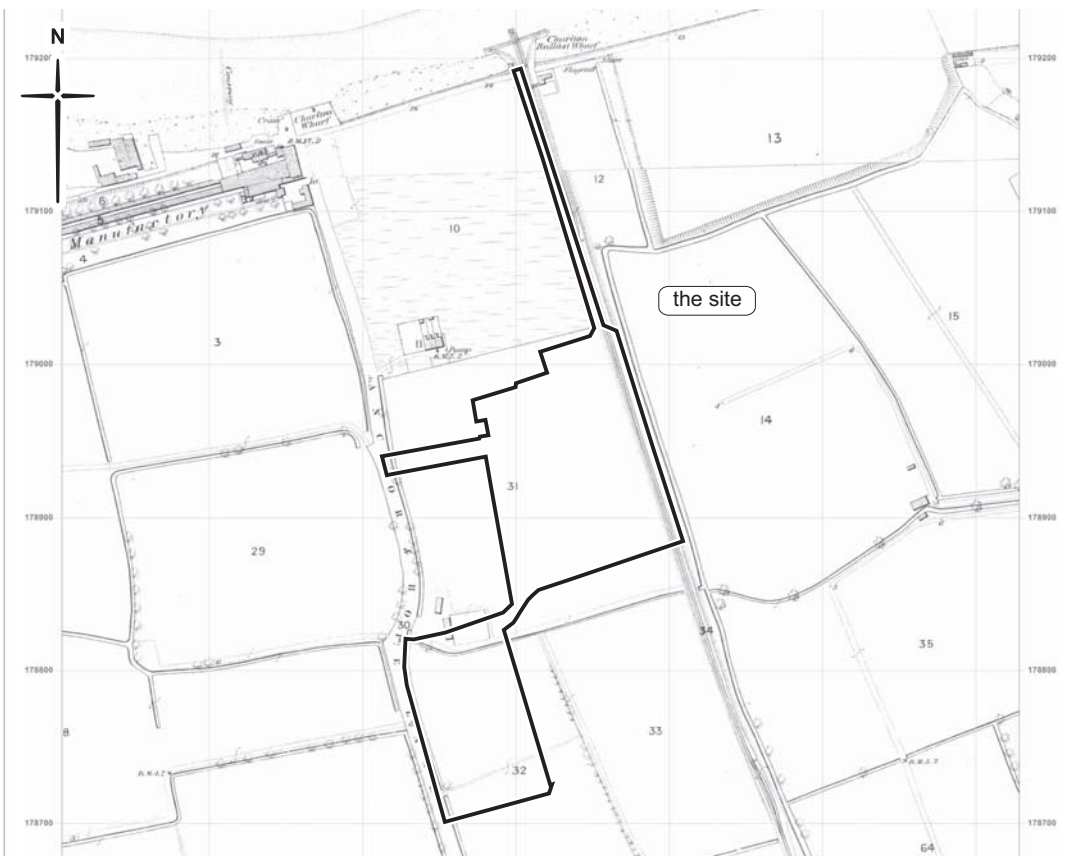


Fig 7 The Ordnance Survey 1st edition 25": mile map of 1869 (not to scale)

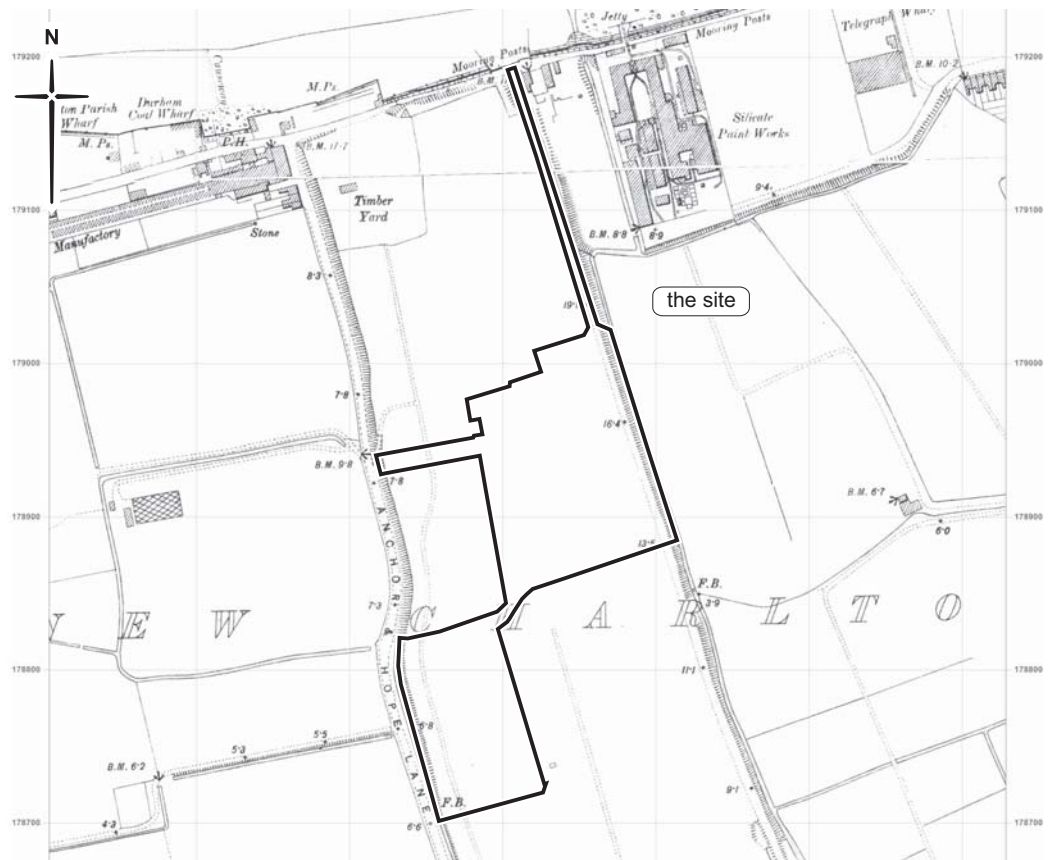


Fig 8 The Ordnance Survey 2nd edition 25": mile map of 1896 (not to scale)

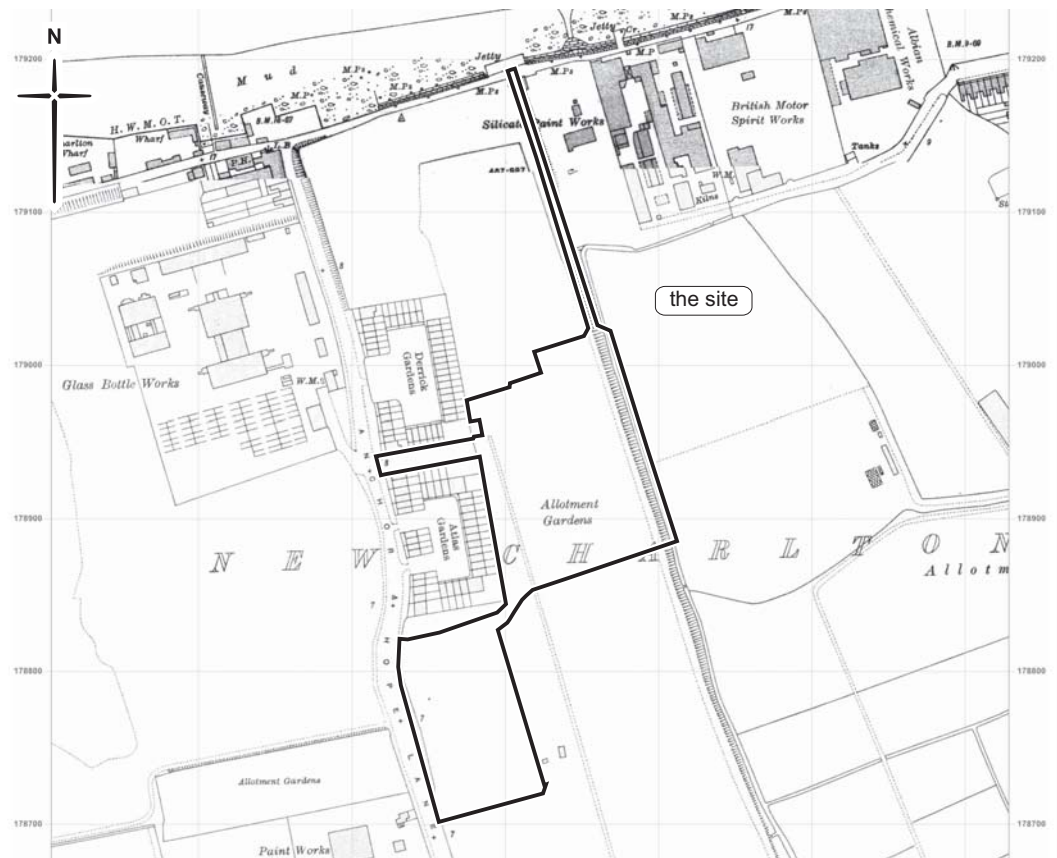


Fig 9 The Ordnance Survey 3rd edition 25": mile map of 1916 (not to scale)

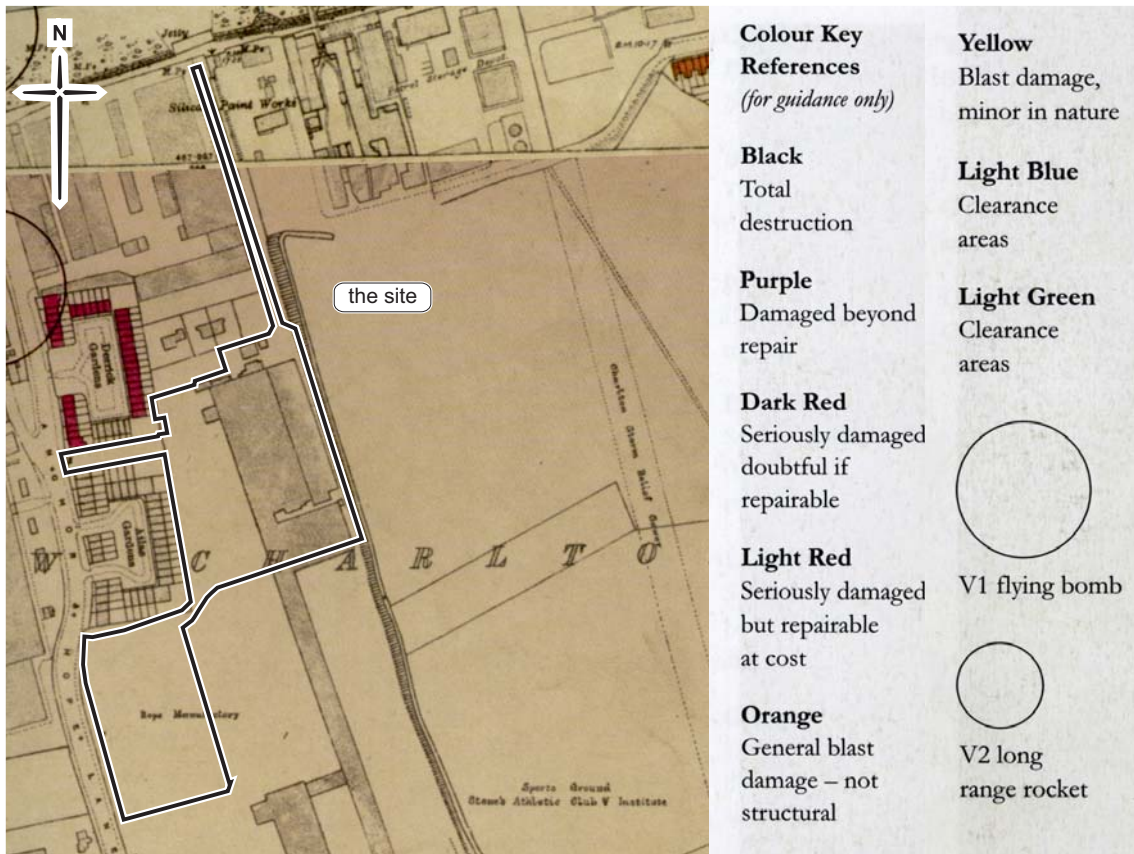


Fig 10 The London City Council (LCC) Bomb Damage Map of 1939–1945

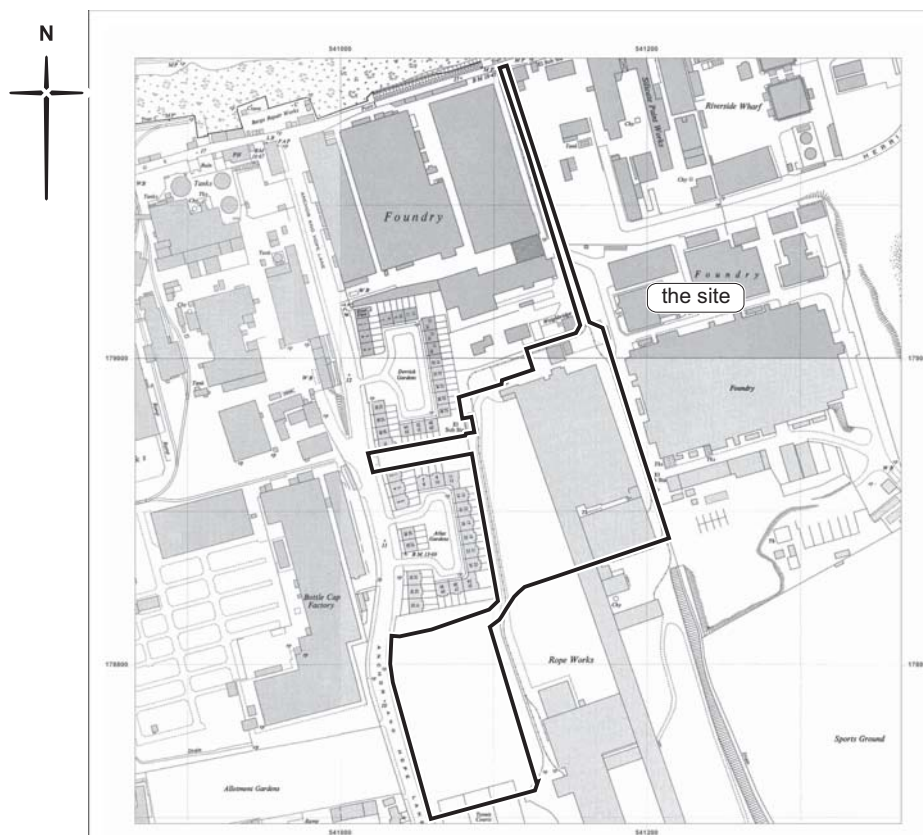


Fig 11 The Ordnance Survey 1:1250 scale map of 1953 (not to scale)