

# UK Holocaust Memorial

Detailed Desk-Based Assessment

Ministry of Housing, Communities and Local Government

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# Notice

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# Executive Summary

The Ministry of Housing, Communities and Local Government has commissioned Atkins to produce a detailed desk-based assessment of Victoria Tower Gardens to support the proposed development of the UK Holocaust Memorial (UKHM). This site is being considered for the iconic National Memorial to the Holocaust with a basement level for a new educational centre, located in the south of the wider park.

The Site lies within a Grade II Registered Park which contains four further listed structures: The Grade I Listed statue of the Burghers of Calais, the Grade II\* Listed Buxton Memorial, the Grade II Listed statue of Emmeline Pankhurst, and the Grade II Listed river embankment wall. The World Heritage Site covering Westminster Abbey and the Houses of Parliament is immediately to the north of the Site. The Scheduled Monument of the Jewel Tower is 45m north-west of the Site. The Site is within the Westminster Abbey and Parliament Square Conservation Area, and the Westminster and Thorney Island Archaeological Priority Area.

Archaeological survival is expected to be high, as the site has remained open public space since the early 20<sup>th</sup> century. Non-designated assets that may be affected by the Proposed Development comprise:

- Palaeoenvironmental remains within alluvial deposits associated with the Rivers Thames and Tyburn of Low or Medium significance;
- Evidence of early exploitation of the River Thames and River Tyburn, including jetties, boats etc. of most likely Low to Medium significance, but potentially up to High significance;
- Evidence of land reclamation from the 16<sup>th</sup> century onwards, including revetments, river-walls etc, of Low to Medium significance;
- Evidence of riverine industrial activity from the 16<sup>th</sup> century onwards, including wharves, docks etc, of Low to Medium significance;
- Garden features associated with the former layout of Grade II Registered Park, of Low significance.

A geophysical ground penetrating radar survey of the site was undertaken in 2017 and has informed all subsequent archaeological reporting and fieldwork design including this detailed desk based assessment (DDBA).

This was followed by an initial phase of monitoring geotechnical test pits and assessing the logs from geoarchaeological boreholes carried out in April and June 2019. The results of this informed a subsequent programme of purposive geoarchaeological sampling to date the alluvial sequence and create a sub-surface deposit model. The subsequent sampling was undertaken in July 2019 and the results of this deposit modelling and sequence dating are expected in October 2019.

The results of the surveys and archaeological investigations to date indicate that the balance of probability is that there are no archaeological remains of such significance to be a constraint on construction of the UKHM. It has been established that:

- the remains of features associated with both the former medieval Abbots Mill and medieval to early post medieval Queens Slaughterhouse (and any other remains directly associated with the medieval Palace and Abbey at Westminster) lie outside of and to the north-west of the scheme footprint;
- no evidence for anything other than post medieval land reclamation and subsequent development and re-development of riverside wharfs and associate features has been identified overlying the alluvium within the scheme footprint. The buried remains of this form of development are not unique in London, but are nevertheless, given their probable association with the development of the suburbs around Westminster from the 17<sup>th</sup> century onwards, of medium significance and will require further archaeological investigation before their removal;
- the evidence for post medieval reclamation and development of the area within Victoria Tower Gardens is uniformly sealed by c. 1.2m of homogeneous topsoil, imported onto the site during creation of the current park in the late 19<sup>th</sup> to early 20<sup>th</sup> centuries. No buried features atypical of the creation of a late 19<sup>th</sup> to early 20<sup>th</sup> century municipal park or features established by any notable park designers/architects have been identified within the park from historic mapping, documentary sources or historic photographs; The park archaeology within the scheme

footprint is therefore considered to be of low significance and can be re-created from the documentary record alone;

- no anthropogenic influence was noted within the alluvium underlying the post medieval reclamation on the site in the geotechnical boreholes and no significant peat deposition identified;

**Table 1-1 - Non-technical summary of archaeological risk and mitigation**

Asset	Potential	Significance	Risk	Mitigation
Palaeoenvironmental remains	High	Low or Medium	Low	Geoarchaeological borehole survey and deposit modelling currently in progress of being reported on.  Likely leading to full excavation within the basement footprint.
Evidence of early riverine exploitation	Moderate	High	Medium	
Post-medieval land reclamation features	High	Low or Medium	High	
Post-medieval riverine industrial features	High	Low or Medium	High	
Early 20 <sup>th</sup> century garden features	High	Low	Medium	

The Proposed Development comprises an area of 0.4ha in the southern two-thirds of the Registered Park and would entail the excavation of a new basement level with excavation to c. 10.0m below present ground level. This would entirely remove any archaeological remains present within the footprint of the proposed basement area.

The Local Authority’s archaeological advisor will require further site-specific work. Consultation with Greater London Archaeological Advisory Service (GLAAS), the City of Westminster’s Archaeological Advisor, has been undertaken at the time of writing, and throughout the initial phased programme of archaeological works that has so far been undertaken.

The results and findings of the GPR Survey, this detailed desk based assessment, the monitoring of geotechnical test pits, interim reporting on geoarchaeological assessment and the forthcoming refined deposit model and sequence dating report for the Site will inform formulation and delivery of an archaeological mitigation strategy (AMS) detailing the measures that will be undertaken to appropriately record archaeology within the footprint of the Scheme. This AMS will be designed in consultation with GLAAS, the archaeological advisor to Westminster City Council (WCC). The AMS will also follow the GLAAS guidelines for delivering archaeological projects within Greater London<sup>1</sup> and within archaeological priority areas in Greater London<sup>2</sup>.

Such a mitigation strategy is likely to entail the full archaeological excavation of the area of below ground works, to ensure that all remains are removed, recorded and reported upon archaeologically. These works could also provide important opportunities for public engagement events and outreach programmes.

Any archaeological works undertaken under the umbrella of the AMS will be delivered in accordance with a Written Scheme of Investigation (WSI) agreed with GLAAS.

It is evident that all archaeology of any significance within the footprint of the proposed scheme lies below the c. 1.2m depth of topsoil imported during creation of the current park. Further archaeological intervention (beyond boreholes) to depth into the underlying post medieval development of the site and alluvium below that would require very significant engineering solutions to achieve that would require:

- opening of very extensive areas of trenching to achieve the required depth(s)
- closure and hoarding of the portion of the park within the scheme footprint to the public; installation of engineering solutions such as piled shoring;
- practicable spoil management (including potentially establishing protocols for dealing with spoil contaminants), possibly requiring at least temporary removal and storage of materials off site;

<sup>1</sup> GLAAS (Greater London Archaeological Advisory Service), 2015, Greater London Archaeological Advisory Service Guidelines for Archaeological Projects in Greater London. London, Historic England

<sup>2</sup> GLAAS 2016: Greater London Archaeological Priority Area Guidelines

- Likely establishment of de-watering solutions within the alluvium should that depth be achieved and possibly above;
- appropriate remediation of the park after completion;

# 1. Introduction

## 1.1. Origins and scope of report

The Ministry of Housing, Communities and Local Government has commissioned Atkins to produce a detailed desk-based assessment (DDBA) to support the proposed development for the UK Holocaust Memorial, Victoria Tower Gardens, Westminster (NGR 530254 179230, hereafter referred to as the “Site”).

This DDBA has been produced in accordance with the requirements of the National Planning Policy Framework (NPPF)<sup>3</sup>, regional<sup>4</sup> and local planning policies<sup>5</sup>, and in accordance with MHCLG planning practice guidance<sup>6</sup>, and standards and guidance produced by the Chartered Institute for Archaeologists (CIfA)<sup>7</sup>, Historic England<sup>8 9</sup>, and the Greater London Archaeological Advisory Service (GLAAS)<sup>1011</sup>.

This report deals solely with buried archaeological heritage assets and does not cover built heritage assets (such as listed buildings), except where such discussion aids the interpretation of the buried heritage resource, or where buried fabric is likely to be affected by proposals. Setting issues affecting the historic built environment are not discussed in this report. Issues affecting the historic built environment are addressed in the separate heritage statement.

The information presented within this document is correct at the time of writing to the best knowledge of the author, within the limits imposed in dealing with historic materials and mapping. The archaeological resource is by its nature an unknown resource prior to confirmation through site investigations.

## 1.2. Proposed development

Victoria Tower Gardens, Westminster, has been selected as the proposed location for an iconic National Memorial to the Holocaust. This will be built with a basement level for a new educational centre (hereafter referred to as the “Scheme”). The project is being developed by the United Kingdom Holocaust Memorial Foundation (UKHMF).

The development would also include additional landscaping, arboricultural protection works, the insertion of new services and the diversion of existing services.

## 1.3. Designated assets

The Site lies within the Grade II Registered Victoria Tower Gardens (NHLE 1000845). Immediately north of the Site is the World Heritage Site of the Palace of Westminster and Abbey, which in turn contains the Jewel Tower and Chapter House, both Scheduled Monuments.

The Registered Park and surrounding area contain numerous listed buildings ranging from Grade II to Grade I. As issues pertaining to the built historic environment are not covered in this assessment, these will not be mentioned further.

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<sup>3</sup> MHCLG (Ministry of Housing, Communities and Local Government), July 2018, National Planning Policy Framework

<sup>4</sup> GLA [Greater London Authority], 2016, The London Plan

<sup>5</sup> City of Westminster, 2016, Westminster’s City Plan

<sup>6</sup> MHCLG (Ministry of Housing, Communities and Local Government), 2014, Conserving and Enhancing the Historic Environment: Planning Practice Guide (Updated October 2018)

<sup>7</sup> CIfA (Chartered Institute for Archaeologists), 2017, Standard and guidance for historic environment desk-based assessment, Reading

<sup>8</sup> EH (English Heritage), 2008 Conservation principles, policies and guidance (Swindon: Historic England)

<sup>9</sup> EH [English Heritage], 2017, The setting of heritage assets. Historic Environment Good Practice Advice in Planning Note 3.

<sup>10</sup> GLAAS (Greater London Archaeological Advisory Service), 2015, Greater London Archaeological Advisory Service Guidelines for Archaeological Projects in Greater London. London, Historic England

<sup>11</sup> GLAAS 2016: Greater London Archaeological Priority Area Guidelines

## 1.4. Archaeological priority area

The Site is within the Tier 1 Westminster and Whitehall Archaeological Priority Area (APA), as outlined by Historic England<sup>12</sup>. The APA covers the World Heritage Site of the Palace of Westminster and Abbey, the medieval town of Westminster, and the pre-medieval settlement of 'Thorney Island'. The area contains several scheduled monuments, and non-designated heritage assets of similar significance to a scheduled monument.

## 1.5. Aims and objectives

The purpose of this DDBA is to determine the significance of any heritage assets affected by the Scheme and assess the impact of the Scheme on this significance. The objectives are to:

- Identify the presence of known designated and non-designated and the potential for unknown archaeological assets that may be impacted by the proposed development;
- Assess the significance of any archaeological assets identified;
- Assess the likely impact on the significance of identified archaeological assets from the proposed development; and
- Provide recommendation for an appropriate mitigation strategy aimed at removing/reducing the impact of the proposed development upon the significance of identified archaeological assets.

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<sup>12</sup> Historic England, 2017, City of Westminster Archaeological Priority Areas Appraisal

## 2. Methodology

In order to assess the significance and potential for archaeological assets, the site is placed into its full archaeological and historic context. This was achieved through collecting data within a 250m study area around the site outline. The data was obtained from principal sources, in this instance the Greater London Historic Environment Record (GLHER), which provides information on non-designated heritage assets (monuments), and past archaeological investigations (events). Information on statutorily designated assets was obtained from the National Heritage List for England (NHLE) digital dataset.

The GLHER dataset is managed and maintained by GLAAS as part of Historic England (HE). The National Heritage List for England (NHLE) is managed and maintained by HE.

The following additional sources were also be examined:

- Groundsure: Digital historic Ordnance Survey maps from the 1<sup>st</sup> edition to present
- The British Library: Copies of pre-Ordnance Survey maps
- British Geological Survey (BGS): Online digital solid and superficial geological data and historic borehole records
- Local Studies Library/ Record Office – pre-Ordnance Survey mapping, local histories and documentary sources.
- Documentary sources – Published histories, site reports, and monographs
- Internet Sources: Web-published material, including local planning authority planning policies, conservation area information, and information on designated assets.

The locations of known heritage assets within the study area are shown in Appendix D, and are to be cross-referenced with the gazetteer (see Appendix A). The study area contains a number of listed buildings, however, as this assessment deals solely with buried heritage assets, only those within the Site will be referenced.

All distances quoted will be to the nearest 5 meters.

### 2.1. Assessing Significance and Potential

#### 2.1.1. Assessing significance

Historic England's *Conservation Principles*<sup>13</sup> sets out HE's guidance on possible ways to define significance, and is concurrent with the glossary for Significance outlined in NPPF. The significance of a heritage asset lies in its value to the current and future generations due to its heritage interest, be it archaeological, architectural, artistic, or historic. The determination of the significance of an asset, whether it is designated or non-designated, is based on one or more of its values as outlined by Historic England, using professional judgement. The four principal values are:

- **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

Where known heritage assets are identified, the heritage significance of such assets is determined by reference to existing designations where available combined with professional judgement. For previously unidentified sites where no designation has been assigned, an estimate has been made of the likely historic, artistic or archaeological importance of that resource based on professional knowledge and

<sup>13</sup> EH [English Heritage], 2008 Conservation principles, policies and guidance (Swindon: Historic England)

judgement. Examples of the significance of designated and non-designated assets are outlined in Table 2-1, below.

**Table 2-1 - Assessing the Significance of Heritage Assets**

Significance	Description	Example
Very High	Internationally important or significant heritage assets	World Heritage Sites, or buildings recognised as being of international importance.
High	Nationally important heritage assets generally recognised through designation as being of exceptional interest and value.	Grade I and II* Listed Buildings, Grade I and II* Registered Parks and Gardens, Scheduled Monuments (or assets judged to be of equivalent significance), Protected Wreck Sites, Registered Historic Battlefields, Conservation Areas with notable concentrations of heritage assets and non-designated assets of national or international importance.
Medium	Nationally or regionally important heritage assets recognised as being of special interest, generally designated.	Grade II Listed Buildings, Grade II Registered Parks and Gardens, Conservation Areas and non-designated assets of regional or national importance, including archaeological remains, which relate to regional research objectives or can provide important information relating to particular historic events or trends that are of importance to the region.
Low	Assets that are of interest at a local level primarily for the contribution to the local historic environment.	Non-designated heritage assets such as locally listed buildings, non-designated archaeological sites, non-designated historic parks and gardens etc. Can also include degraded designated assets that no longer warrant designation.
Negligible	Elements of the historic environment which are of insufficient significance to merit consideration in planning decisions and hence be classed as heritage assets.	Non-designated features with very limited or no historic interest. Can also include highly degraded designated assets that no longer warrant designation.
Unknown	The importance of an asset has not been ascertained.	

### 2.1.2. Assessing Potential

Buried archaeological evidence is, by its very nature, an incompletely known quantity which can never be fully identified during a desk-based assessment. The assessed potential is based on available evidence, but the physical nature and extent of any archaeological resource surviving within the Site cannot be confirmed without detailed information on the below ground deposits or results of on-site fieldwork, typically through non-intrusive (e.g. geophysical, LiDAR), or intrusive (archaeological, geoarchaeological evaluation) survey.

A site’s archaeological potential is calculated using professional judgement and knowledge. A site’s potential is assessed by a considering the archaeological remains expected to exist on the site and takes into consideration historic and recent impacts and thus its likely survival. The potential for surviving archaeological evidence of past activity within the Site is expressed in the report as ranging between the scales of:

- **High:** The available evidence suggests a high likelihood for past activity within the Site and a strong potential for archaeological evidence to survive intact or reasonably intact;
- **Medium:** The available evidence suggests a reasonable likelihood for past activity within the Site and consequently there is a potential that archaeological evidence could survive.
- **Low:** The available evidence suggests archaeological evidence of activity is unlikely to survive within the Site, although some minor land-use may have occurred.

- **Uncertain:** Insufficient information to assess.

## 3. Planning policy

### 3.1. National Planning Policy Framework (2018)

The National Planning Policy Framework (NPPF) was updated in July 2018, and sets out 17 Core Planning Principles of which the conservation of the historic environment is one. One of the NPPF's core principles is that 'planning should 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' (Para 185). Section 16 of NPPF is presented in full below, including relevant footnotes (Fn.):

**184.** *Heritage assets range from sites and buildings of local historic value to those of the highest significance, such as World Heritage Sites which are internationally recognised to be of Outstanding Universal Value (Fn. 61). These assets are an irreplaceable resource, and should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations (Fn. 62).*

**185.** *Plans should set out a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. This strategy should take into account:*

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

**186.** *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.*

**187.** *Local planning authorities should maintain or have access to a historic environment record. This should contain up-to-date evidence about the historic environment in their area and be used to:*

- a) assess the significance of heritage assets and the contribution they make to their environment; and*
- b) predict the likelihood that currently unidentified heritage assets, particularly sites of historic and archaeological interest, will be discovered in the future.*

**188.** *Local planning authorities should make information about the historic environment, gathered as part of policy-making or development management, publicly accessible.*

*(Fn. 61) Some World Heritage Sites are inscribed by UNESCO to be of natural significance rather than cultural significance; and in some cases they are inscribed for both their natural and cultural significance.*

*(Fn. 62) The policies set out in this chapter relate, as applicable, to the heritage-related consent regimes for which local planning authorities are responsible under the Planning (Listed Buildings and Conservation Areas) Act 1990, as well as to plan-making and decision-making.*

#### **Proposals affecting heritage assets**

**189.** *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.*

**190.** *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 into account when considering the impact of a proposal on a heritage asset, to avoid or minimise any conflict between the heritage asset's conservation and any aspect of the proposal.*

**191.** *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.*

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

- a) the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;*
- b) the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and*
- c) the desirability of new development making a positive contribution to local character and distinctiveness.*

### **Considering potential impacts**

**193.** *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 (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.*

**194.** *Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of:*

- a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional;*
- b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II\* listed buildings, grade I and II\* registered parks and gardens, and World Heritage Sites, should be wholly exceptional (Fn. 63).*

**195.** *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 total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:*

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

**196.** *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, where appropriate, securing its optimum viable use.*

**197.** *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 directly or indirectly affect 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.*

**198.** *Local planning authorities should not permit the 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.*

**199.** *Local planning authorities should 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 (Fn. 64). However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.*

**200.** *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 the asset (or which better reveal its significance) should be treated favourably.*

**201.** *Not all elements of a Conservation Area or World Heritage Site 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 195 or less than substantial harm under paragraph 196, 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.*

**202.** *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.*

*(Fn. 63) Non-designated heritage assets of archaeological interest, which are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.*

*(Fn. 64) Copies of evidence should be deposited with the relevant historic environment record, and any archives with a local museum or other public depository.*

## 3.2. Planning Practice Guidance (PPG) 2014

The DCLG published Planning Practice Guidance<sup>14</sup> online in 2014, to expand upon the NPPF. 'Conserving and Enhancing the Historic Environment' was published in April 2014. DCLG has since become MHCLG and the guidance was last updated in February 2018. The Guidance notes that 'conservation is an active process of maintenance and managing change. It requires a flexible and thoughtful approach to get the best out of assets as diverse as listed buildings to as yet undiscovered, non-designated buried remains of archaeological interest'. It should be noted that the wording of PPG is reflective of the now superseded 2012 NPPF.

## 3.3. The London Plan (2016)

The present version of the London Plan was adopted by the Greater London Authority (GLA) in 2016 (GLA, 2016), and outlines principles for planning the in Greater London Area for the next 20 years. At present, a new version of the London Plan has gone through public consultation and is in draft form awaiting formal adoption. Policy 7.8 covers heritage assets and archaeology, and states:

### **POLICY 7.8 HERITAGE ASSETS AND ARCHAEOLOGY**

#### **Strategic**

*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.*

#### **Planning decisions**

*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.*

<sup>14</sup> DCLG 2014 National Planning Practice Guide (<http://planningguidance.planningportal.gov.uk/blog/guidance/>)

### **LDF preparation**

*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, 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.*

*Para. 7.31A supporting Policy 7.8 states 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.’*

*Para. 7.31B further adds ‘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’.*

*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 onsite. Where this is not possible provision should be made for the investigation, understanding, dissemination and archiving of that asset’. Provisions for heritage led regeneration are outlined in Policy 7.9: Heritage-Led Regeneration, which states:*

## **POLICY 7.9 HERITAGE-LED REGENERATION**

### **Strategic**

*A Regeneration schemes should identify and make use of heritage assets and reinforce the qualities that make them significant so they can help stimulate environmental, economic and community regeneration. This includes buildings, landscape features, views, Blue Ribbon Network and public realm. Planning decisions*

*B The significance of heritage assets should be assessed when development is proposed and schemes designed so that the heritage significance is recognised both in their own right and as catalysts for regeneration. Wherever possible heritage assets (including buildings at risk) should be repaired, restored and put to a suitable and viable use that is consistent with their conservation and the establishment and maintenance of sustainable communities and economic vitality.*

### **LDF Preparation**

*C Boroughs should support the principles of heritage-led regeneration in LDF policies.*

## **POLICY 7.10 WORLD HERITAGE SITES**

### **Strategic**

*A Development in World Heritage Sites and their settings, including any buffer zones, should conserve, promote, make sustainable use of and enhance their authenticity, integrity and significance and Outstanding Universal Value. The Mayor has published Supplementary Planning Guidance on London’s World Heritage Sites – Guidance on Settings to help relevant stakeholders define the setting of World Heritage Sites. Planning decisions*

*B Development should not cause adverse impacts on World Heritage Sites or their settings (including any buffer zone). In particular, it should not compromise a viewer’s ability to appreciate its Outstanding Universal Value, integrity, authenticity or significance. In considering planning applications, appropriate weight should be given to implementing the provisions of the World Heritage Site Management Plans.*

### **LDF preparation**

*C LDFs should contain policies to: a protect, promote, interpret, and conserve, the historic significance of World Heritage Sites and their Outstanding Universal Value, integrity and authenticity b safeguard and, where appropriate, enhance both them and their settings*

*D Where available, World Heritage Site Management Plans should be used to inform the plan making process.*

### 3.4. Westminster's City Plan (2016)

Westminster's City Plan was formally adopted in November 2016. Policy S25 covers heritage issues in the City and states:

#### *POLICY S25 HERITAGE*

*Recognising Westminster's wider historic environment, its extensive heritage assets will be conserved, including its listed buildings, conservation areas, Westminster's World Heritage Site, its historic parks including five Royal Parks, squares, gardens and other open spaces, their settings, and its archaeological heritage. Historic and other important buildings should be upgraded sensitively, to improve their environmental performance and make them easily accessible.*

## 4. Site location, topography and geology

### 4.1. Introduction

A site's location, topography, and geology can provide indication of its suitability for past human activity. Topography and geology can provide information on whether ground levels have been raised or terraced away, and can contribute to our understanding of the archaeological survival potential of a site.

### 4.2. Site location

The Site comprises the Grade II Registered Victoria Tower Gardens, Westminster, W1 (NGR 530254 179230), an area of 2.5 ha. It is bounded to the east by the River Thames, to the west by Millbank, to the north by the Grade II\* Registered Black Rod's Garden, and to the south by the junction between Millbank and Lambeth Bridge.

The Site is within the Parish of St James's, in the City of Westminster, within Greater London.

The Site is immediately adjacent to the River Thames, immediately south of the gravel island that formed Thorney Island. Historically, it would have been within the southern confluence of the River Thames and River Tyburn, which flowed south from Marylebone and encircled the island.

The Site is presently open public space with the Buxton Memorial on one side of it. A site visit was carried out in December 2017 to ascertain the current conditions.



Figure 4-1 - Photo of Victoria Tower Gardens as existing, taken facing south

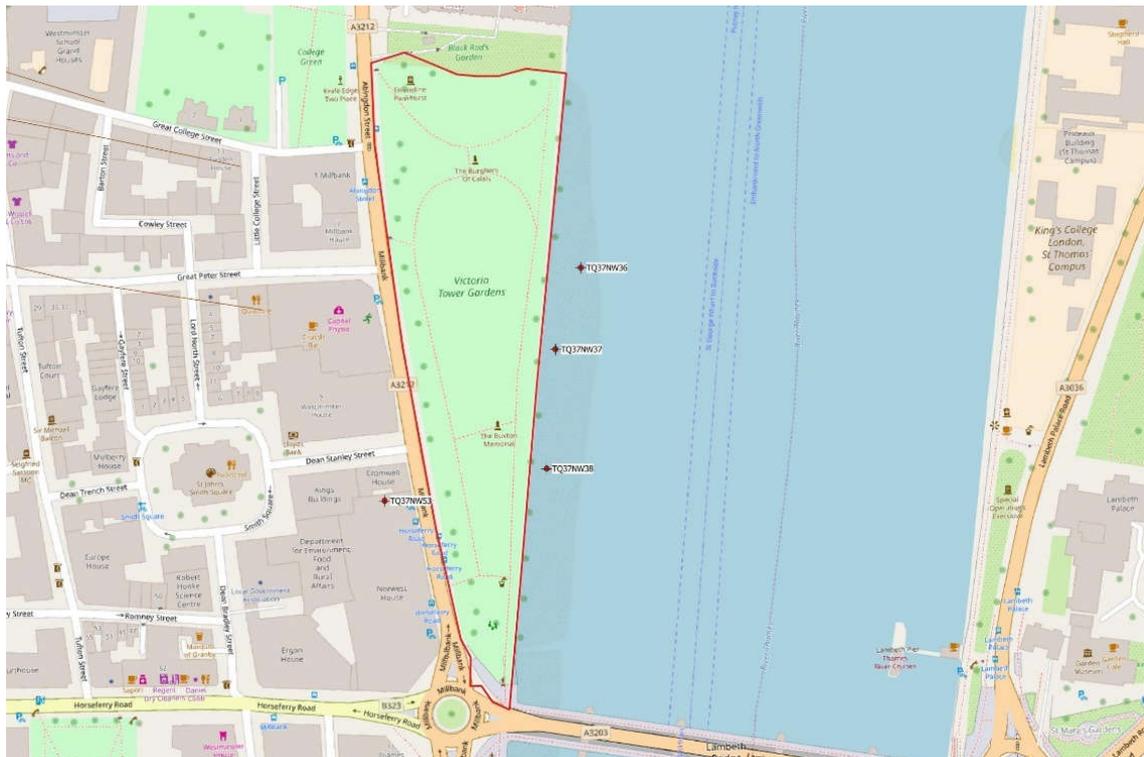
### 4.3. Topography

Based on available data from a geophysical survey carried out by SUMO in 2017, the topography of the Site is broadly flat, ranging from 4.5m above Ordnance Datum (OD) to 4.8m OD with only very slight local variations. The topography of the Site, and its environs are entirely artificial, and are the result of periods of land reclamation, development, demolition and finally landscaping as a park from the later medieval through post-medieval periods (see below).

## 4.4. Geology

The British Geological Survey (BGS) digital data indicates that sub surface geology of the Site comprises alluvium. There are a number of useful historic BGS boreholes within 50m of the Site's boundary<sup>15</sup>. One borehole (BGS ref: TQ37NW53) was drilled in 1906, at the London Hydraulic Power Station (now 2 Millbank) from a height of 14 ft above Ordnance Datum (4.3m OD). The borehole recorded 16 ft (3.8m) of made ground, directly overlying a 5 ft (1.5m) thick peat deposit. This lay on top of 1ft 6 inch (0.5m) thick deposit of sand, and 9ft 6inches (2.9m) of 'ballast'.

Three further boreholes are noted to the east of the Site, drilled in 1910, likely ahead of the development of Victoria Tower Gardens (BGS ref: TQ37NW36-38). These were drilled at 1ft 9 inches (c 0.57m OD). The locations of the boreholes are noted on Figure 4-2, below.



**Figure 4-2 - Location of historic BGS boreholes**

Borehole TQ37NW36 is located towards the northern extent of the Site. The upper 7 inches of the borehole (0.17m) was labelled as 'mud'. This overlay 4 feet (1.2m) of 'hardcore and mud', which in turn overlay 2ft (0.6m) of muddy clay. Underneath these mud deposits lay 4 feet (1.2m) of 'fine sand and little clay', which in turn overlay 'Thames ballast gravel'.

Borehole TQ37NW37 is adjacent to the centre of the Site. The upper foot (0.3m) of the borehole is recorded as 'mud'. This overlay 6 feet 10inches (2m) of 'hardcore and mud', which in turn overlay 2 feet 5 inches (0.7m) of 'sand with shells'. Beneath this sandy deposit a 9 inch (0.2m) thick deposit of clay was noted, overlying another deposit of sand with shells measuring 4 feet (1.2m) thick. This overlay 6ft (1.8m) of 'fine sand with pebbles', which in turn overlay 'Thames ballast gravel'.

Borehole TQ37NW38 is located towards the southern extent of the Site. The upper 4 inches (0.1m) of the borehole is recorded as 'mud'. This overlay 7 feet 6 inches (2.2m) of 'hardcore and mud', overlying 1 foot (0.3m) of sandy clay, which in turn overlay peaty clay deposit, 3 feet (0.9m) thick. This in turn directly overlay Thames ballast gravel.

Natural Thames gravels, labelled as "Thames ballast gravel" is recorded at 6.4m-6.7m below the top of the borehole (10.4m-10.7m below present ground level), in the north-most borehole, it is recorded at 5.1m below the top of the borehole (9.1m below present ground level), likely reflecting scouring of the Thames gravels.

<sup>15</sup> British Geological Survey (BGS) Map Viewer, [www.bgs.ac.uk](http://www.bgs.ac.uk), accessed 09/10/2018

The upper mud deposit recorded in the boreholes is likely indicative of modern (at the time) activity of the River Thames. The thick deposit labelled as 'hardcore and mud' identified in the three boreholes is more ambiguous, but likely reflects reclamation deposits. Earlier riverine deposits (sandy clay, or fine sand) are recorded at a depth of approximately 2.3m from the top of the borehole (6.3m below present ground level).

The alluvial deposits are likely heavily waterlogged, providing anaerobic conditions, suitable for the preservation of organic material such as wood. In two of the boreholes (TQ37NW37, 38) a layer of peat was recorded at 3.3m below the top of the boreholes (8.3m below present ground level), indicating a period of drying out in the floodplain. Palaeoenvironmental remains, including micro and macro fossilised plant remains, may survive in these deposits. It should be noted that disturbing the water table may affect the state of preservation in the wider area.

A geoarchaeological watching brief was carried out on ground investigation works in April 2019. A summary of the findings of the watching brief are presented in Section 5.4 of this report but correspond to sub surface levels identified in the historic boreholes.

## 5. Archaeological Baseline

### 5.1. Past Archaeological Investigations

A geophysical (GPR) survey was commissioned as part of this assessment in 2017 by SUMO survey<sup>16</sup>, the results of this investigation are presented below. The GPR survey has served as the basis which has informed, and on which all subsequent archaeological investigation has been undertaken.

A geoarchaeological watching brief was carried out on the Site in April 2019 by MOLA<sup>17</sup> on ground investigation works carried out as part of the UKHM scheme. The works entailed the monitoring of five boreholes and one window sample. A summary of the results of the investigation are presented below.

The recovered data from the five boreholes was subsequently used to design and undertake a purposive geoarchaeological borehole strategy to develop a detailed deposit model for the site and to provide scientific dating of the alluvial sequence(s). The results of this are currently (August 2019) undergoing assessment and analysis and will be reported fully upon in October 2019 at the latest.

Immediately north of the Site, an evaluation was carried out on the site of Black Rod's Garden. Within the wider study area, a further eight investigations, comprising evaluations, watching briefs and excavations have been carried out. Despite this small number, the archaeological background of Westminster, and particularly the area known as Thorney Island, is well understood. Investigations have identified medieval and post-medieval activity, and prehistoric activity in the wider area.

Extensive archaeological investigations were carried out by MoLAS (Museum of London Archaeology Service) in the 1990s as part of the Jubilee Line extension works, and under the Parliamentary Works Directorate. These are centred just outside the study area, roughly on Portcullis House and London Underground Westminster Station. Whilst these are outside the study area and have not been included in the GLHER search, they are important sites in understanding the development of Westminster Palace and Thorney Island, and as such will be referenced where appropriate.

### 5.2. Archaeological and Historic Background

The archaeological and historic background of the Site and study area are discussed in detail below. All date ranges are approximate.

#### 5.2.1. Prehistoric Period (800,000 BC - AD 43)

##### 5.2.1.1. Palaeolithic Period

The Palaeolithic period (800,000 – 12,000 BC) coincides with the end of the Pleistocene period. It is marked by the first instances of flaked flint tool cultures and spans the biological evolutionary period from early hominid species to anatomically and behaviourally modern humans, by the Upper Palaeolithic (40,000 – 10,000 BC). During this time the climate warmed, after the end of the last glaciation, and the environment became increasingly wooded, with birch and pine forests. The land was inhabited by a variety of animal species including, but not limited to mammoths, hippopotami, bears, hyena, red deer and aurochs, the remains of which have been identified in the 19<sup>th</sup> century on the south-west side of Trafalgar Square, 1.2km north-west of the site in the Ipswichian gravel terrace. During this period the Site would have been within the River Thames. The chance find of a Middle Palaeolithic axe, and Lower Palaeolithic flake was made 130m south of the site on Millbank (MLO10662). The results of the MOLA geoarchaeological borehole assessment (see Section 5.4) identified that early Holocene gravels would have been submerged during this period and that there is little if any potential of archaeology of this period being present within the Site.

##### 5.2.1.2. Mesolithic Period

The Mesolithic period (10,000 – 4,000 BC) is typically characterised by increasingly complex flint tools, including the use of microlith technologies, and is typically identified through finds assemblages rather than structural remains. Activity would have likely been focused close to rivers, for predictable resources,

<sup>16</sup> SUMO Survey, 2017, Geophysical Survey Report, Victoria Tower Gardens, Westminster.

<sup>17</sup> MOLA, 2019, *UK Holocaust Memorial, Victoria Tower Gardens, Westminster, a report on geoarchaeological monitoring of geotechnical work*. MOLA

such as hunting and fishing, as well as communication. There are no known remains dating to this period within the study area and it is likely that at this time the Site was within the River Thames or associated tidal marsh at its confluence with the Tyburn. The results of the MOLA geoarchaeological (see Section 5.4) and borehole assessment identified that early Holocene gravels would have been submerged during this period and that there is little if any potential for archaeology of this date being present within the Site. The deeply stratified alluvial deposits in this area likely contain palaeoenvironmental remains which could provide evidence of the early Holocene development of the Lower Thames Valley. Although the Site would not have been suitable for habitation at the time, it may have been used for early wetland exploitation.

#### 5.2.1.3. Neolithic Period

The Neolithic period (4,000 – 2,000 BC) is marked by the increased domestication of plants and animals, and the adoption of early agrarian communities. The former forests were cleared to make way for farmland, as small farmstead settlements were established. There are no remains dating to this period within the study area. It is likely that during this period, sediment build-up occurred in the study area, caused by possibly shifting courses of the River Thames and River Tyburn, resulting in the creation of Thorney Island<sup>18</sup>. A residual flake was found as a chance find, 130m south of the site on Millbank (MLO3202). The results of the MOLA geoarchaeological borehole assessment (see Section 5.4) identified that early Holocene gravels would have been submerged during this period and that there is a very low potential for archaeological remains of this period being within the Site.

The deeply stratified alluvial deposits in this area likely contain palaeoenvironmental remains which could provide evidence of the early Holocene development of the Lower Thames Valley. Although the Site would not have been suitable for habitation at the time, it may have been used for early wetland exploitation.

#### 5.2.1.4. Bronze Age

The Bronze Age (2,000 – 600 BC) marks the first adoption of metal technologies. This period saw increased economic and cultural communications with the rest of Europe, as well as a degree of population migration. The climate became wetter and forced the adoption of settlements in lower valleys. Ore resources, such as tin and copper, both necessary for bronze smelting, would have become increasingly important. During this period, the Site was likely within the River Thames or Tyburn. A possible east – west timber revetment was identified during excavations at St Stephen's Chapel, 200m north of the Site edge (site code: PWC92), which appear to have been cut from a depth of -0.15m - -0.3m OD. The feature is tentatively dated to this period, based on approximate river levels at the time compared to the level of the feature, this revetment appears to have been replaced at a later date, likely as a defence against tidal inundation.

Chance finds including bronze swords and axes have been recovered from the River Thames 175m south-east of the site (MLO8884; MLO8885) and 210m east of the Site (MLO26849; MLO26850). In the Bronze and Iron Ages, the practice of ritual deposition of items, including metalwork, in watered areas was widespread throughout Britain and the continent. It is possible that these remains are in fact, ritual deposits, opposed to residual artefactual remains.

As noted in Section 4.4, the presence of peat is indicative of a period of drying out of the wetland areas. It is likely that peat deposits recorded in historic boreholes date to the early-middle Bronze Age periods, and may also indicate a landscape that was more favourable for early human activity, as evidenced by the timber structures found to the north of the Site. Palaeoenvironmental remains contained within these deposits could provide evidence of the environmental conditions around the Site at the time.

The Site was located in close proximity to a possible settlement site on Thorney Island, to the north-west. It is possible that evidence of wetland exploitation and management features, such as jetties, boats, revetments etc. may be contained deeply buried within the alluvial deposits.

#### 5.2.1.5. Iron Age

The Iron Age (600 BC – AD 43) is marked by the adoption of iron tools, as well as an increased complexity of land use and division. Settlement areas became more extensive, aimed at better exploitation of the land. The period saw the development of hillfort sites, possibly defended intermittently

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<sup>18</sup> Thomas C, Cowie R, Sidell J, 2006, The Royal Palace, Abbey and Town of Westminster and Thorney Island, MOLAS Monography 22, pp 13

occupied sites, or storage areas. These may indicate an increase in tension between social groups during this period.

There are no remains dating to this period in the study area. It appears that during the late Bronze Age the floodplain of the River Thames flooded, prompting relocation of the settlement on Thorney Island, that was not reclaimed following the recession of river levels in the Iron Age<sup>19</sup>.

Deposition (most likely ritual) of metalwork is well attested in the Thames in central London during this period. Of note are the Waterloo Helmet, the Battersea Shield, and the Wandsworth Shield, all recovered from the River Thames in the mid-19<sup>th</sup> century (found outside the study area). These are all of the La Tène style, which dated from around 500 BC, in the early to middle Iron Age.

Throughout the prehistoric period, the Site was within the confluence of the River Thames and River Tyburn and would not have been suitable for extensive settlement. It is possible that it was used for wetland exploitation, possibly for fishing or fowling when waters receded. The rivers would have also served as an important communication route at this time, the Thames remaining the primary transport artery until the mid-19<sup>th</sup> century.

It is possible that evidence of wetland exploitation and management features, such as jetties, boats, revetments etc. may be contained deeply buried within the alluvial deposits.

### 5.2.2. Roman Period (AD 43 – AD 410)

By AD 53, the Roman settlement of *Londinium* (London) was established approximately 2.5km north-east of the Site, on the site of the present City of London. Within the study area, an antiquarian find, comprising a Roman concrete floor with tiles, roof tiles and “rubbish” such as bone and pottery was noted during excavations for foundations of the new Cannons House in 1883, 110m west of the Site (MLO23316). Further Roman walls, and part of a hypocaust system were reported running under the nave of Westminster Abbey, 260m north-west of the site<sup>20</sup>, this likely points to the presence of a small riverside settlement near the Site at this time. No further settlement remains have been identified in the study area. The residual find of three bronze coins of Constantine were recovered 130m south of the Site in 1915 (MLO12948).

During this period, the site would have been within the confluence of the River Thames and River Tyburn. Although this area would have been unsuitable for intensive occupation, its location in proximity to a possibly high-status structure or settlement area suggests a potential for riverine features, such as a possible jetty, that may have provided access to the wider area through river travel could be represented at depth within the alluvium.

### 5.2.3. Early medieval Period (AD 43 – 1066)

The withdrawal of the Roman administration in the 5<sup>th</sup> century is seen as a period of decline in Britain. Population and general urban decline was met with successive settlements of northern Germanic peoples and the establishment of the Anglo-Saxon Kingdoms by the 7<sup>th</sup> century. This redrawing of the political geography of the country also saw the adoption of Christianity as the dominant religion. It is conjectured that by the 7<sup>th</sup> century, a minster existed at Westminster, lending some credence to the legend of the founding of Westminster Abbey in AD 616 by Mellitus, the first Bishop of London<sup>21</sup>.

The focus of activity during this period was the trading settlement of *Lundenwic*, centred on Covent Garden and the Strand, 1.5km north-east of the site, although remains of 8<sup>th</sup> and 9<sup>th</sup> century timber structures have been found, 670m north of the site at Treasury Green, comprising an earlier sunken floored building with a later hall building. These have been variously interpreted as a palace and a farm<sup>22</sup>. In 785, King Offa of Mercia granted lands at Thorney Island to “St Peter, and the needy people of God...”<sup>23</sup> suggesting that the earliest ecclesiastical settlement in the vicinity of the Site dated to this time. A further charter in the 10<sup>th</sup> century indicates the restoration of a Benedictine Abbey by St Dunstan, although these foundations were laid by King Edward the Confessor.

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<sup>19</sup> *Ibid* pp 30-31

<sup>20</sup> Westlake H, 1923, Westminster Abbey, pp 2

<sup>21</sup> *Ibid*, pp 1004

<sup>22</sup> Thomas C, Cowie R, Sidell J, 2006, The Royal Palace, Abbey and Town of Westminster and Thorney Island, MOLAS Monography 22, pp 41

<sup>23</sup> Weinreb B and Hibbert C et al, 2008, The London Encyclopaedia, pp 1004

Following his coronation in 1042, Edward vowed to make pilgrimage to the tomb of St Peter in Rome, but due to political reasons he was dissuaded from undertaking the journey. Instead, he was relieved of his promise by the Pope in return for founding or restoring a monastery to the saint. The king moved his palace to Westminster and began construction on the church, which was completed in 1065, eight days before his death. Elements of the Saxon abbey were uncovered beneath the nave in the 19<sup>th</sup> century<sup>24</sup>. Edward's palace was likely located nearby, close to the present Westminster Hall, which was constructed as an extension in the late 11<sup>th</sup> century (see below) on reclaimed land.

An 8th century sword was recovered in Black Rod's Garden, immediately north of the Site, 35 feet below ground level during excavations for a new boiler house. During this period, the main focus of activity would have been in the area of Westminster Abbey and Westminster Hall, to the north-west of the Site. The Site would have likely been on the edge of Thorney Island, within the River Thames flood plain at its confluence with the Tyburn and was possibly used for wetland exploitation and river transportation, the location being favourable for the establishment of early wharves and jetties, and possibly for beach markets outside the main trading port of *Lundenwic*. Palaeoenvironmental remains contained deeply buried within underlying alluvial deposits could give an indication as to the environment of Thorney Island at the time.

#### 5.2.4. Later medieval Period (1066 – 1520)

On Christmas Day 1066, William the Conqueror was crowned King in Westminster Abbey. This undoubtedly marked the beginning of the importance of Westminster as a centre of ecclesiastical and secular power in England. By the end of the 11<sup>th</sup> century, William II had constructed the Great Hall (on the site of Westminster Hall), 235m north of the Site, expanding the palace with the largest hall in Europe<sup>25</sup>, although it appears his designs may have been grander as he referred to it as a "mere bedchamber"<sup>26</sup>.

Although it appears that Thorney Island was subject to serious flooding, owing to the presence of flood deposits in the Abbey undercroft, it appears that the general river level fell at this time, and the Site and area surrounding Thorney Island was in marginal marshland<sup>27</sup>. Excavations as part of the Jubilee Line extension recorded reclamation ditches in three areas to the north of the palace, approximately 400m north-west of the Site, roughly centred around the modern junction of Millbank and Westminster Bridge (site codes: PSW93; PLS94; CNW97). This suggests that increased efforts to expand the area of dry land were made at this time, culminating in a broad area of reclaimed land either side of King Street, which ran from the Abbey to Charing Cross in the north in the latter half of the 12<sup>th</sup> century.

The royal palace and Benedictine monastery attracted developments along King Street. Wealthy courtiers, government officials, merchants and clergy constructed houses and took up residence along the street, wishing to be close to the seats of power. Around this time, timber walls and gates were constructed around the palace precinct, separating Green Yard and New Palace Yard. The riverside walls were more substantial, constructed of Kentish ragstone, and appear to have extended across at least the south and eastern sides of the Abbey precinct, roughly following Great College Street, extending north to the Jewel Tower, turning eastwards, along the south side of the palace precinct, to the north of the Site, and north along the Thames river frontage. The Westminster Abbey Great Drain was also likely constructed at the time and exits in a square hole in the precinct wall to the west of the Site. At the time, the area of the palace would have extended as far east as St Stephen's chapel. To the north of the palace precinct, archaeological remains of a timber dock, approximately 51m in length, were recorded as part of the Jubilee Line extension works (site code: WSS94).

An excavation in 1963 on Abingdon Street, immediately west of the Site (ELO14661), recorded remains of the Great Drain, along with a 16<sup>th</sup> century extension. The Jewel Tower moat and gardens were recorded, as well as the palace foreshore, which included remains of a timber breakwater. This indicates the Site was still within the river in the 12<sup>th</sup> century, although the recorded breakwater would suggest attempts at riverine management in the area of the Site.

Under King Henry III the palace precinct was expanded to the north, in what is now Canon Row. The remains of gatehouses to New Palace Yard and Green Yard were recorded during excavations as part

<sup>24</sup> Weinreb B, Hibbert C et al. 2008, The London Encyclopaedia, pp 1005

<sup>25</sup> Thomas C, Cowie R, Sidell J, 2006, The Royal Palace, Abbey and Town of Westminster and Thorney Island, MOLAS Monography 22, pp 54

<sup>26</sup> Weinreb B and Hibbert C et al, 2008, The London Encyclopaedia, pp 1010

<sup>27</sup> Thomas C, Cowie R, Sidell J, 2006, The Royal Palace, Abbey and Town of Westminster and Thorney Island, MOLAS Monography 22, pp 54-55

of the Jubilee Line extension works (site codes: PLS94; PLQ95). The building of the Exchequer dated to Henry III's extensions to the palace and was located to the north of the Great Hall. Remains of its foundations were recorded in 1883 and 1885, but neither record entirely agrees with the other as to this building's extent<sup>28</sup>.

Developments were not just confined to the palace, as during this period the Abbey underwent redevelopments including the construction of the chapterhouse and belfry, the area surrounding which had a compacted brown silty clay surface, interpreted as a yard surface for the October Fair, which was held in the north of the Abbey precinct in the 13<sup>th</sup> and 14<sup>th</sup> centuries. Development continued along King Street, to the north-west of the Site. The excavation immediately north of the Site in Black Rod's Garden (ELO17185) identified 13<sup>th</sup> and 14<sup>th</sup> century waterfronts, comprising earlier timber revetments, and a later ashlar stone faced river wall with a return to the north. This is possibly a continuation of the precinct wall (MLO48585).

In the 14<sup>th</sup> and 15<sup>th</sup> centuries, further land reclamation occurred to the east of King Street, in the area of Canon Row, 460m north of the Site. Excavations as part of the Jubilee Line Extension in this area found pits dating to this period, indicating occupation (Site Code: WUS92). Further developments within the palace precinct, most notably included the completion of St Stephen's chapel, and the construction of the Grade I Listed Jewel Tower in 1364-1366, 135m north-west of the Site. Within the Abbey precinct, the nave and Lady Chapel were rebuilt.

In 1512 a fire destroyed the "privy" (royal apartments) area of the palace, prompting Henry VIII to move. In 1530, he acquired the site of Whitehall, 640m north of the Site, and his residence moved here. The buildings of the palace, whilst remaining a royal residence officially, were used for parliamentary accommodation and law courts.

Throughout the medieval period, the Site would have remained in the River Thames at its confluence of the River Tyburn. During this period the Site may have witnessed used for riverine transportation and communication purposes and may have been occupied by jetties or wharves. Smaller vessels may have been beached directly on the foreshore.

Palaeoenvironmental remains contained within the upper part of the alluvial deposits within the Site could provide an indication of environmental conditions at the time.

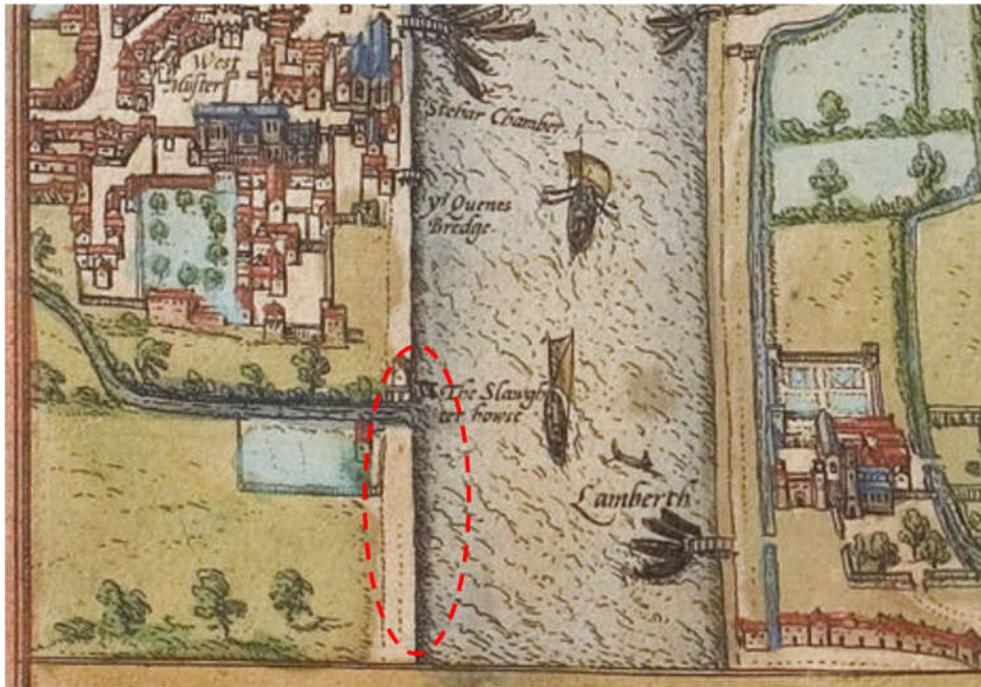
## 5.2.5. Post-medieval and Modern Periods (1520 –present)

### 5.2.5.1. Historic map regression

The increased development of the site from the post-medieval period to the creation of the present gardens can be observed through historic mapping.

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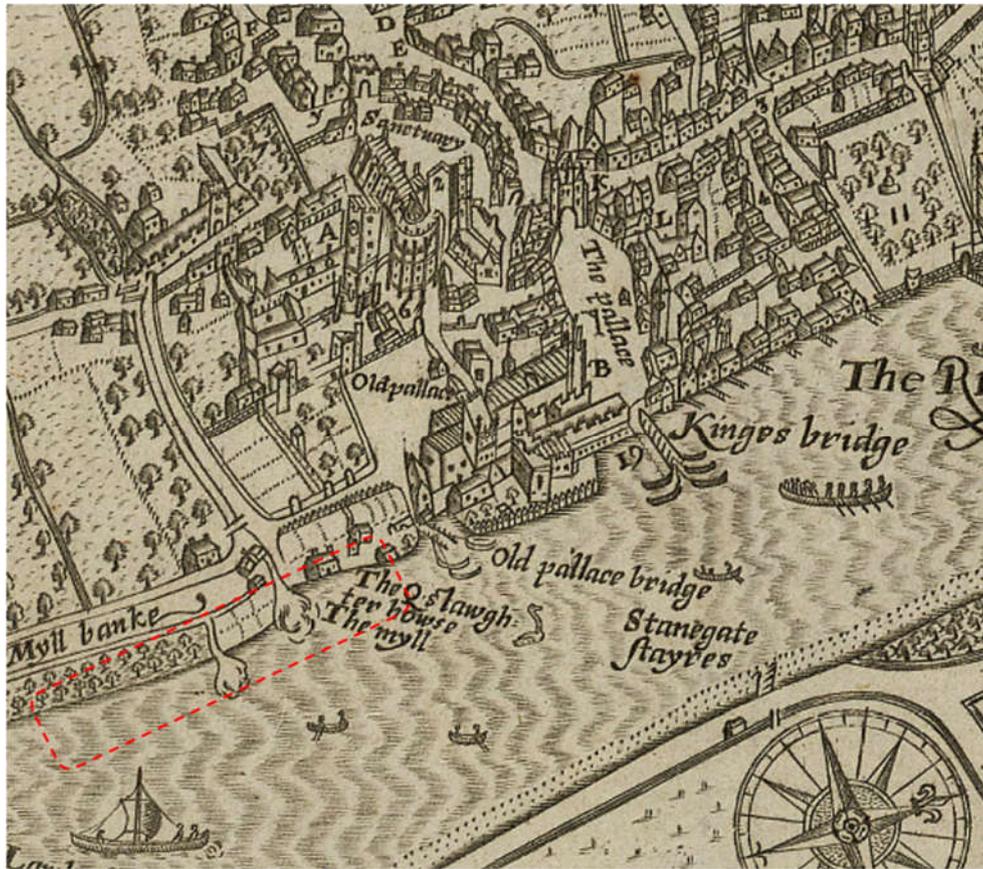
<sup>28</sup> *Ibid* pp 81



**Figure 5-1 - Extract of Braun and Hogenburg's map of 1572 (Site location approximate)**

The earliest map to show the Site is Braun and Hogenburg's map of 1572 (Figure 5-1). The map is a bird's eye angled view of London, and although not to an accurate scale, clearly depicts the Site and its surroundings. Although not named on the map, the River Tyburn is shown to flow through the north of the Site, with a building, labelled as the "Slaughter House" on the bank of the River Thames, with a possible jetty extending into the river.

To the south of the River Tyburn, partly within the north-western extent of the Site, a large enclosed area is shown with an unnamed building on its eastern boundary. This is likely the mill, later labelled as "Abbott's Mill" (MLO23201). The eastern half of the Site would have still been within the River Thames at this period, although it is clear that a programme of land reclamation was taking place to the south of the palace at this time, although it is not clearly shown on the map, it is reasonable to assume that some form of river wall or revetment, or series of revetments, was constructed at this time to prevent tidal flooding.



**Figure 5-2 - Extract of John Norden's map of 1593 (Site location approximate)**

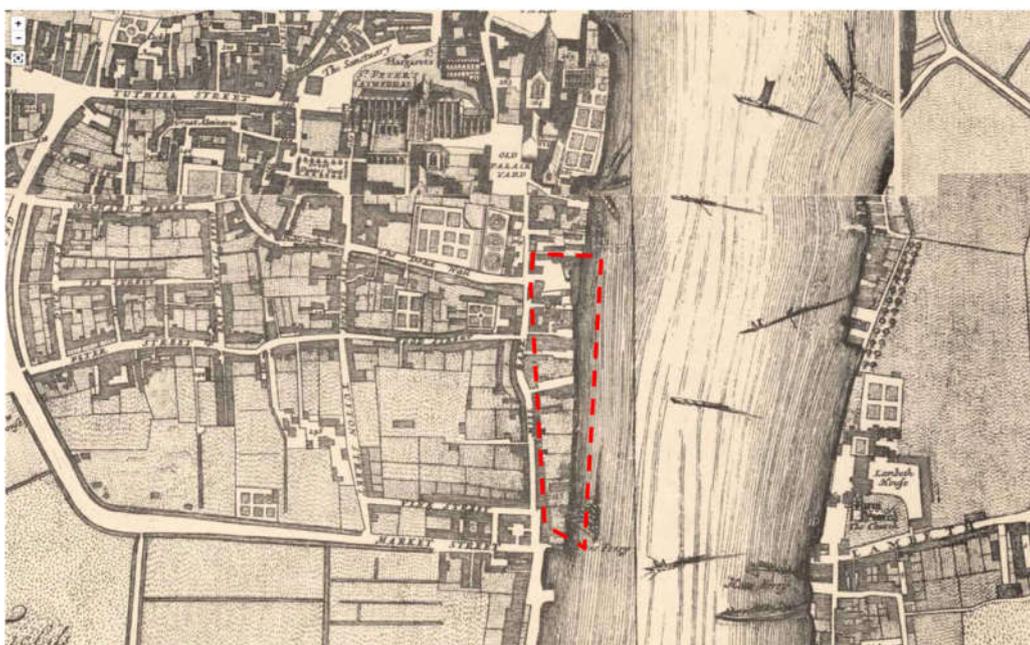
Within 20 years of Braun and Hogenburg's map, the "Myll Bank" (Millbank) had been laid out from the "Myll" (mill) in the north of the Site, heading southwards roughly parallel to the river. The road appears to be a lot wider than at present and was flanked to the east and west (within the Site) by a diverted route of the River Tyburn, which was crossable by a bridge on what is now Old College Street. The river is shown to have two outfalls, one in the north of the Site, in alignment with Great College Street, and a smaller one a little to the south.

The Slaughterhouse shown on the earlier map is labelled as the "Q. Slaughterhouse", which, owing to the proximity to the Palace of Westminster, may refer to the Queen's Slaughterhouse, indicating royal connections. It is possible that animals came into the slaughterhouse by river, and the butchered carcasses left for the royal palaces along the River Thames at Greenwich, Richmond and Hampton Court the same way. The meat produced by a royal slaughterhouse would have also likely been used to feed garrisons, such as at the Tower of London, and the burgeoning Navy.



**Figure 5-3 - Extract of Faithorne and Newcourt's map of 1658 (Site location approximate)**

No changes are observed in the Site until the mid-17<sup>th</sup> century. Faithorne and Newcourt's map of 1658, is an illustrative, almost isometric plan and not to scale. It appears to show that the slaughterhouse buildings to the north-west of the Site have been cleared by this time. Comparison of this and the earlier maps with modern indicate that the locations of both the slaughterhouse and Abbey Mill lies outside and to the north-west of the scheme footprint. Much of the Site is still within the River Thames, the western extent appears to be orchards.





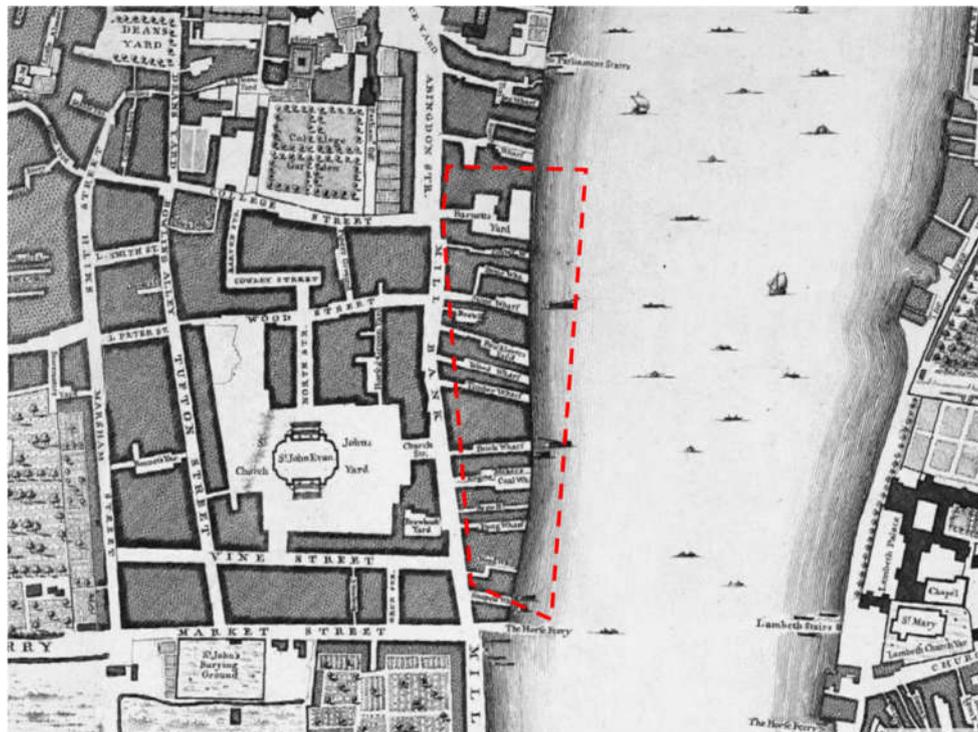


Figure 5-6 - Extract of Rocque's map of 1746 (Site location approximate)

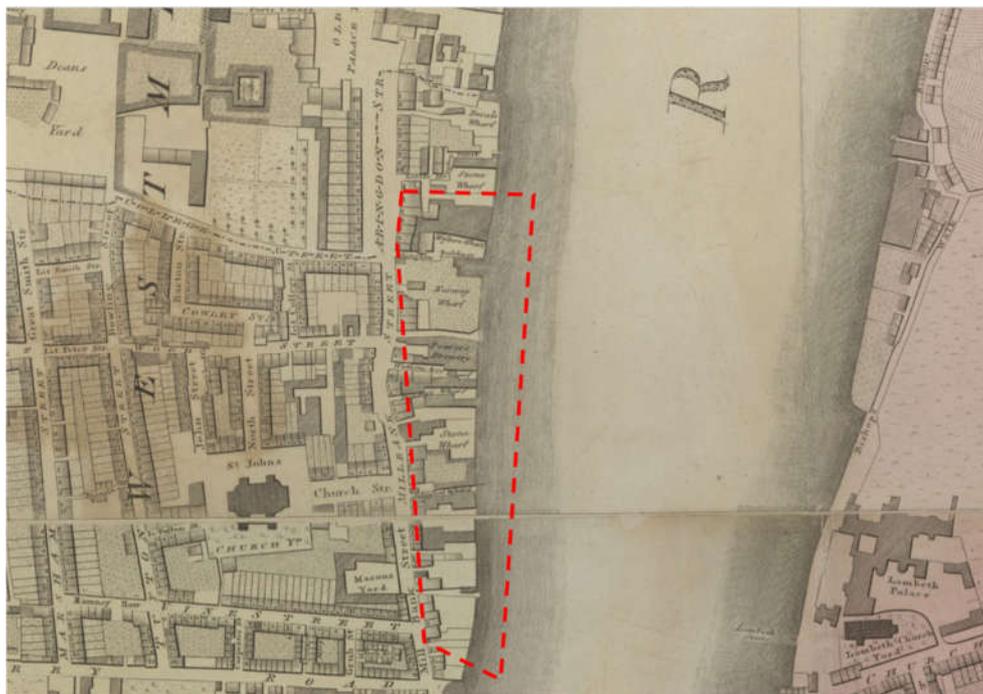
Rocque's map of 1746 (Figure 5-3) shows the Site as occupied by various wharves at this time, comprising large, irregularly planned warehouse buildings, interspersed by lanes and alleys to the river front. It should be noted that Rocque's map does not differentiate between building properties in a block, nor were internal courtyards surveyed, and it is possible that areas of the buildings depicted were not developed, and existed as courtyards or general yards at the time. The map notes several wood, timber and stone wharves in the Site, as well as a coal wharf, bricklayer's wharf and a dung wharf. Unusually, an 'engine makers' is noted in the southern half of the Site, and a brewhouse in the northern half. It is possible that these wharves are located to facilitate the construction of the West End suburbs around this time.

The eastern-most extent of the Site is still within the river at this time.



**Figure 5-7 - Giovanni Antonio Canal, il Canaletto 1746-55, “The River Thames looking towards Westminster from Lambeth”<sup>29</sup>**

A painting of Westminster from Lambeth by the renowned Italian painter Canaletto in 1746-55 clearly shows the industrial character of the Site and the area surrounding Westminster Abbey and the palace at this time. To the left of the painting, a series of wharves and riverside buildings are depicted, bordering the River Thames. Unlike Rocque’s map, it is possible to see that the building plots were occupied by complexes of smaller structures, rather than one homogenous structure as depicted in the map. There appears to be a long jetty extending from the centre of this mass of structures, although this feature is not recorded on the historic mapping. The painting, much like Rocque’s map, shows that the river was heavily used at this time.



**Figure 5-8 - Extract of Horwood's map of 1799 (Site location approximate)**

Horwood’s map of 1799 (Figure 5-4) shows the composition of the Site in greater detail than Rocque’s map. Individual building plots are recorded on the map, demonstrating that the western part of the Site was occupied by residential (and possibly retail) buildings in the latter half of the 18<sup>th</sup> century, the eastern part, to the west of the river, was occupied by wharves and warehouses, although it appears that by the end of the century these had declined in number. Norway Wharf (probably a timber wharf) occupies the

<sup>29</sup> Reproduced under Wikicommons license

very north end of the Site, and appears to comprise a largely open yard area, with small building in the west, and a row of houses along Millbank Street. The brewery in the north of the Site on Rocque's map, is labelled as Pearce's Brewery, and appears unchanged in plan. To the south of this is Watkins and Co. Wharf and Hendey's Wharf which occupy the same areas as the wood wharf and timber wharf shown on Rocque's map. The bricklayer's wharf appears to have been replaced by a stone wharf, comprising a large open area, a yard, and a commercial building fronting onto Millbank. The engine manufacturer's is labelled as Johnstons Wharf, and comprises a large east-west orientated building, likely a warehouse or manufactory. The eastern extent of the Site is still within the river at this time.



**Figure 5-9 – D. Roberts, 1861 "Houses of Parliament from Millbank"<sup>30</sup>**

Fire broke out at the Houses of Parliament in 1834, destroying much of the old palace; only the chapel undercroft, the Jewel Tower, and St Stephen's chapterhouse and cloister survived<sup>31</sup>. In 1836, the competition for constructing the new Houses of Parliament building (the New Palace) was won and the work was awarded to Sir Charles Barry, with contributions from Augustus Pugin. The result was the iconic gothic building that remains in use to this day.

A painting of the Houses of Parliament from Millbank by David Roberts in 1861 suggests that the river front was irregular at the time. Although the painting is dominated by Barry's building, it shows a timber dock in the bottom left-hand corner with a stone or brick building extending from it to the north and several mooring posts along the river bank. Any uniformity of the water's edge shown in earlier maps, may reflect the presence of timber docks, as well as localised areas of more substantial water frontage. The geophysical survey noted a linear feature running north-south across the site, along the line of the waterfront shown on these maps and has been interpreted as a possible river wall. This may be a projection of the general trend, and perhaps not a true reflection of the individual wharf buildings that would have made the frontage, and such a river wall, if present was further to the landward side of the Site and not within the areas of occupied, reclaimed land.

<sup>30</sup> Reproduced under Wikicommons license

<sup>31</sup> Architecture of the Palace: The Great Fire of 1834. [www.parliament.uk/about/living-heritage/building/palace/architecture/palacestructure/great-fire/](http://www.parliament.uk/about/living-heritage/building/palace/architecture/palacestructure/great-fire/) accessed 9/10/2018

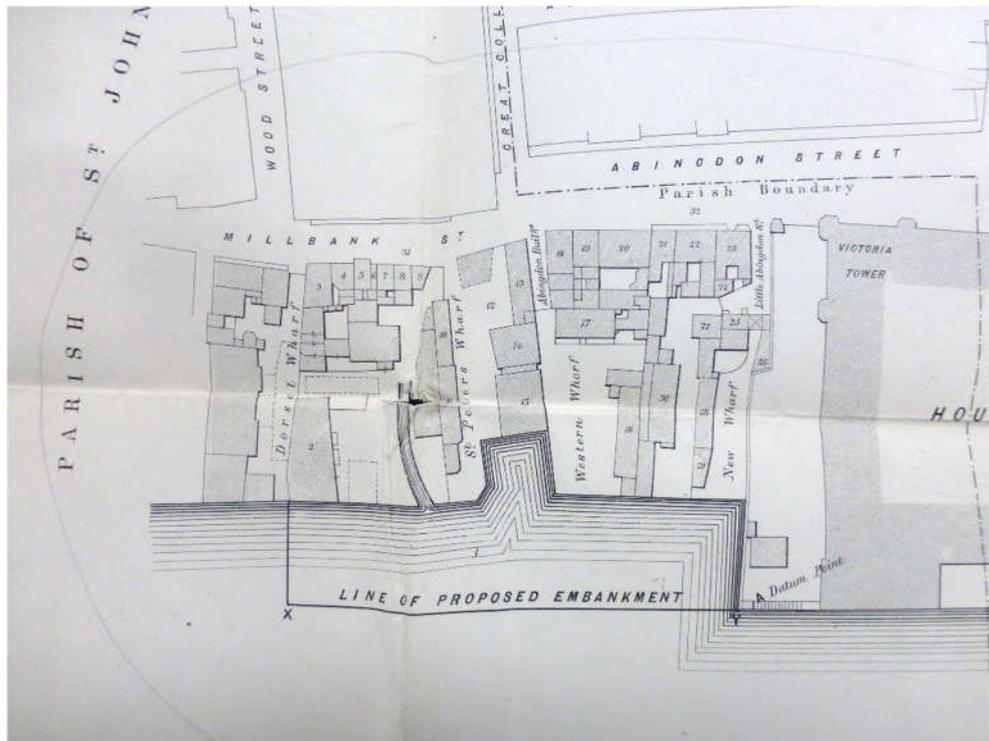


Figure 5-10 - Extract of a plan showing Parliament and its environs, 1867

The 1867 plan of Parliament (National Archives WORK 11/63) and its environs was prepared in 1867 as it had been decided, as part of the earlier 1830s to 1851 rebuilding scheme for Parliament to acquire the land to the south of Victoria Tower and for this to be redeveloped as a public open space. All of the buildings within the proposed area of new gardens were surveyed and numbered individually (a transcript of the reference book that accompanied this map is in Appendix C). This plan also clearly indicates the location of the earlier waterfront and two inlets. The riverward line of the proposed embankment conforms to the existing width of the present gardens and shows the extent of land reclamation that was undertaken in the first phase of the creation of Victoria Tower Gardens. The gardens would be extended to their present extent at a later date (see below).

The proposed creation of a new embankment in the north of the Site coincides with the creation of Joseph Bazalgette's Great Sewer, which follows the line of Chelsea Embankment to the south of the Site, and Victoria Embankment on the north site of the River Thames<sup>32</sup>. The Embankments were constructed to house the sewer system, which otherwise would have had to be diverted north, along the Strand and Fleet Street, and involved a vast programme of land reclamation. Between the new granite faced embankments, the sewer followed Millbank, looping the Site and Palace of Westminster to the west, before joining up with the stretch along Victoria Embankment. Bazalgette's work was instrumental in eliminating cholera, typhoid, and typhus in the London metropolitan area, which had been caused by contaminated water. The proposed embankment in the north of the Site is likely indicative of a wider trend in dividing the riverine space from the land, rather than part of Bazalgette's works.

The reference book that accompanied this plan indicates a wide range of uses within this area (which now represents the northern portion of Victoria Tower Gardens) including several public houses, dwelling houses, warehouses, wharves. Building number 22 on the plan was occupied by both the London Warming and Ventilating Company and the North British Oil and Candle Company.

<sup>32</sup> Banerjee, J "Sir Joseph Bazalgette 1819-1891"  
<http://www.victorianweb.org/technology/engineers/bazalgette.html> (accessed 09/10/2018)



Figure 5-11 - Extract of the Ordnance Survey 1st edition 25":mile map of 1875

The Site retained its largely commercial nature until the end of the 19<sup>th</sup> century. The Ordnance Survey 1<sup>st</sup> edition 25" map of 1875 (Figure 5-5) shows a similar arrangement of wharves and warehouses towards centre of the Site, but now includes a cement works, a flour mill and an oil factory in place of the brewery. The western extent of the Site is still largely residential in nature, and the eastern half of the Site is still within mudflats.

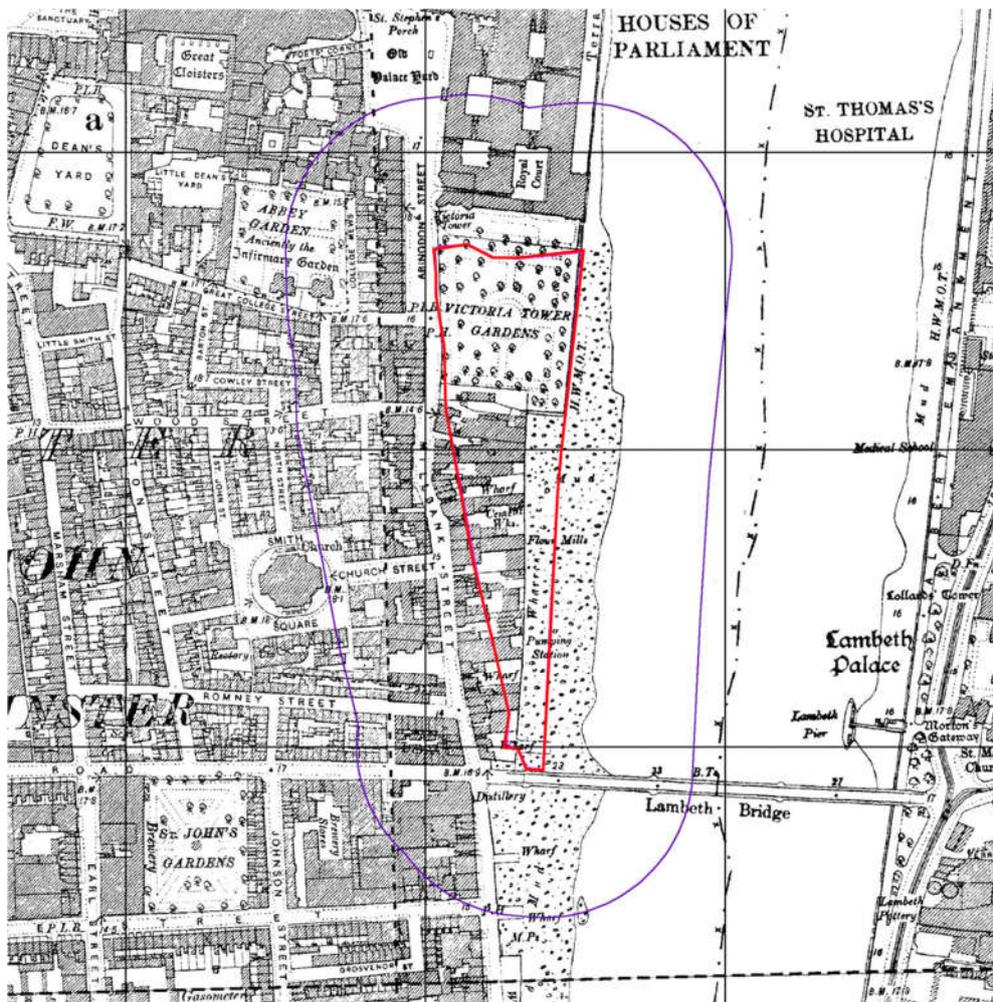


Figure 5-12 - Extract of the Ordnance Survey 2nd edition 25":mile map of 1896

The Ordnance Survey 2<sup>nd</sup> edition 25":mile map of 1896 (Figure 5-6) shows that the wharves in the north of the Site had been removed by this time, and the northern section of Victoria Tower Gardens had been laid out, extending as far south as in line with Great Peter Street (then Wood Street), at the extreme north of the area to be excavated for the proposed Holocaust Memorial. The area of the gardens extends eastwards, in line with the present extent of the gardens, and is bound on the east and south by a river wall. The river boundary in the southern two thirds of the site appears much straighter on this map, suggesting the possibility of a river wall reconstruction sometime in the late-19<sup>th</sup> century. The alignment of this feature appears to broadly coincide with the general line identified in the SUMO geophysical survey of the Site.

The Site was cleared out in the early 20<sup>th</sup> century.

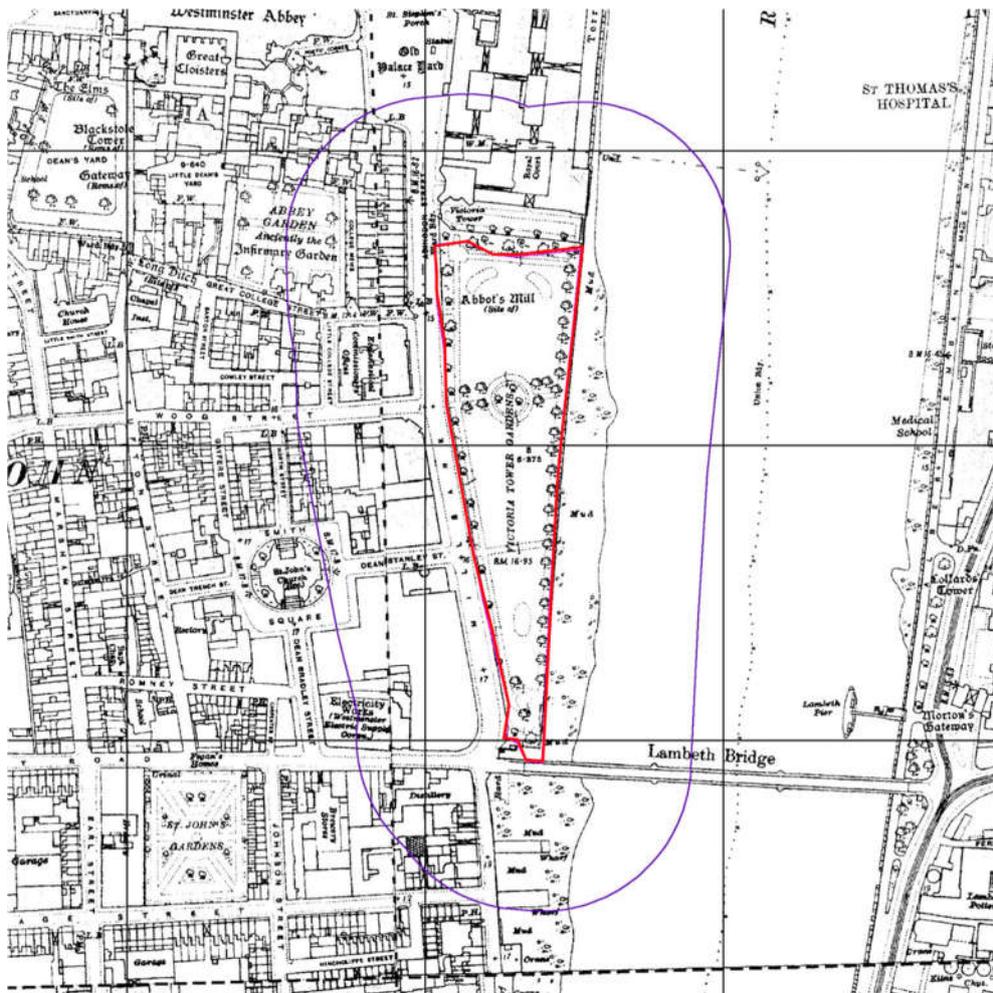


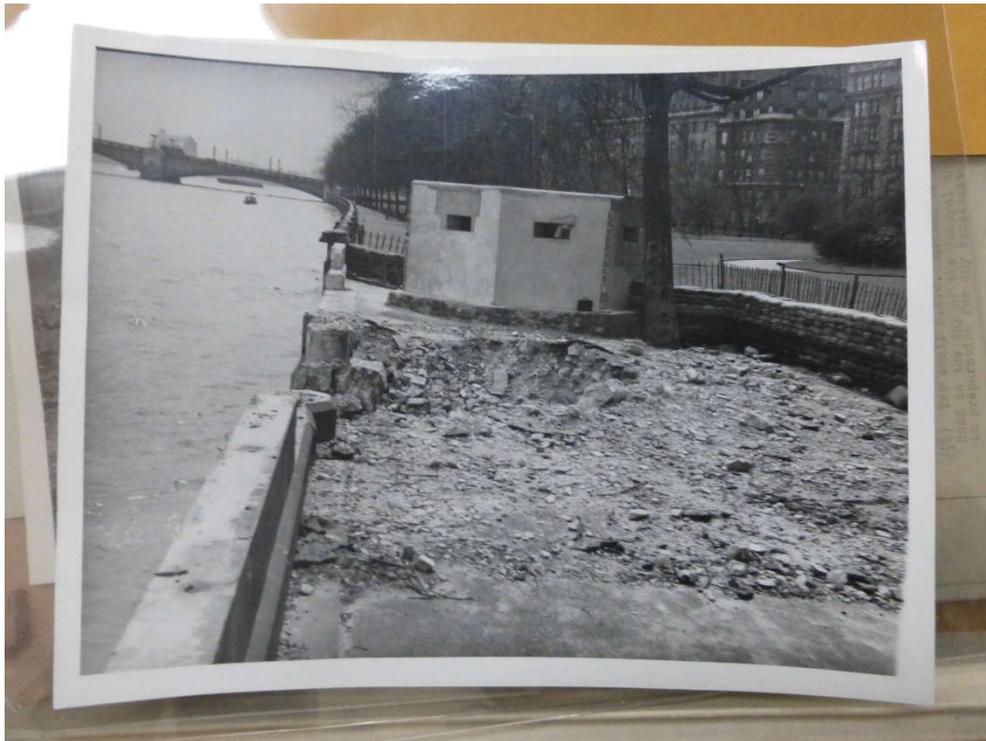
Figure 5-13 - Extract of the Ordnance Survey 3rd edition 25":mile map of 1916

The Ordnance Survey 3<sup>rd</sup> edition 25":mile map of 1916 (Figure 5-7) shows that Victoria Tower Gardens has expanded by this time to its present extent. By this time, the existing river wall, which bounds the eastern extent of the gardens is clearly shown. The original layout of the expanded gardens was established at this time, as the map shows a path running the perimeter of the gardens and a central circular area shown to the south of what is now the location of the Burgers of Calais statue. The geophysical investigation carried out on the site by SUMO has identified this circular feature in the north of the Site. Around this time the Grade I Burgers of Calais statue was erected.



**Figure 5-14 - Imperial Chemical House and environs, Westminster, from the east, 1928 (EPW025095 ENGLAND(1928). © Historic England**

An aerial photograph of the Imperial Chemical House, taken in 1928 shows the original layout of Victoria Tower Gardens as indicated in the Ordnance Survey 3<sup>rd</sup> edition 25":mile map of 1916.



**Figure 5-15 - Photo of pillbox and bomb damage within the Site, May 1941 (National Archives WORK 16/2555)**

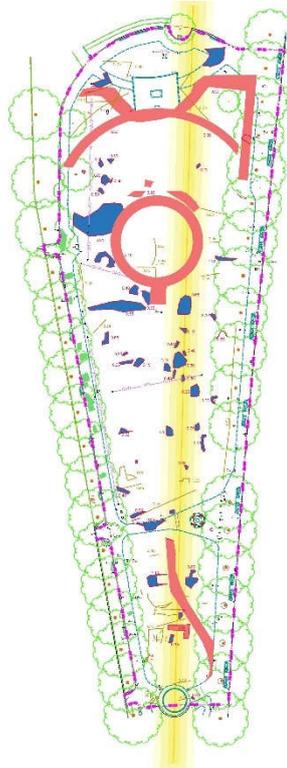
The Bombsight map indicates the Site was struck three times by high explosive bombs during the Second World War. Photos held in the National Archives (WORK 16/2555) show damage to the river wall, but also that a pillbox had been constructed along the river front, to defend from a possible invasion. The pillbox shown in the photo is likely that erroneously positioned on the GLHER in the west of the Site (MLO105786).

The Site has remained an open public garden from this period and is Grade II registered. The path around the park has changed since the early 20<sup>th</sup> century, and in 1949 the Grade II\* Buxton Memorial Fountain was moved from Parliament Square to its present location, and the installation of Sturgeon Lamps. No further changes have taken place.

### 5.3. Results of the Geophysical Investigation

SUMO Services carried out a ground penetrating radar (GPR) survey of the Site in 2017, details of the survey can be read in the report<sup>33</sup>. The geophysical survey has been utilised in informing the design of all subsequent archaeological fieldwork for the UKHM project.

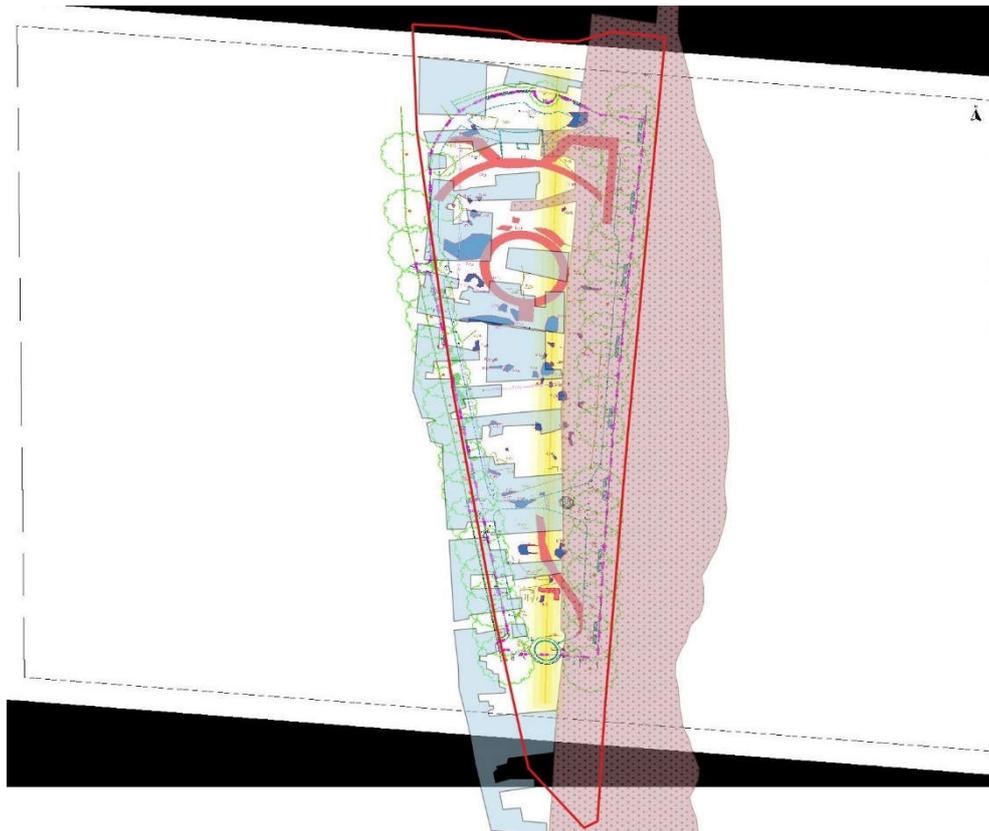
In summary, the investigation identified a north – south orientated boundary feature bisecting the site. The outlines of the former early 20<sup>th</sup> century garden features were recorded, as well as localised areas of made ground or possible building foundations. Towards the south of the Site, a series of linear features of unknown date were identified. The results of the geophysical survey are presented below in Fig 5-15.



**Figure 5-16 - Interpretive results of ground penetrating radar survey. After SUMO 2017 (SOR11461, Fig 5)**

The general trend line crossing the site from north-south has been interpreted as a former river wall. From historic mapping, it is apparent that the river front along the Thames did not have a uniform appearance for much of its history, and any river wall that may be present would be expected further to the west in the site, with the footings of wharves extending beyond the line.

<sup>33</sup> SUMO Survey, 2017, Victoria Tower Gardens, Westminster, London, Survey report 11461



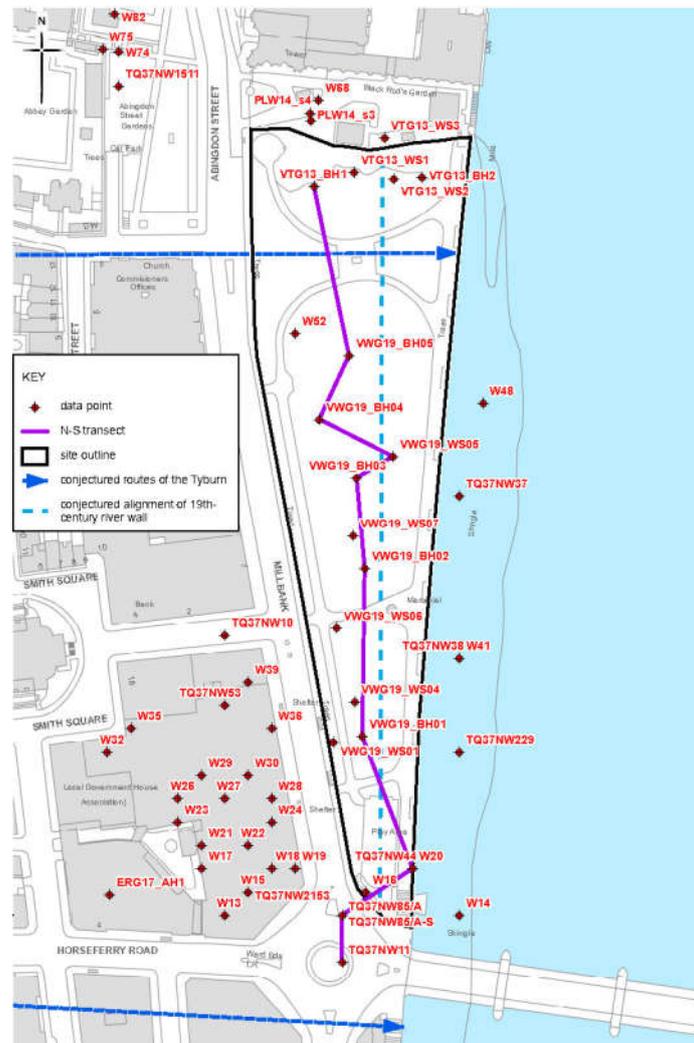
**Figure 5-17 - Georectified interpretive plan of geophysics results overlain with principal features from the OS 1875 map**

Overlaying the interpretive plan of the geophysical survey with the Ordnance Survey 1<sup>st</sup> edition 25" : mile map of 1875 (Figure 5-17) shows that the areas interpreted as made ground or footings coincide with the location of historic wharf buildings (marked in light blue on the figure). It is apparent that the general trend line represents the former line of the foreshore (marked in red) within the Site and that the lack of anomalies in the eastern third of the Site is representative of this area's historic location within the Thames foreshore. It is possible that the linear anomaly represents an early river wall or revetment, however, as noted above, the river frontage did not appear to be uniform until the creation of the present embankments, and that any uniformity shown on historic maps may have included areas of timber dock and wharves.

#### 5.4. Results of the geoarchaeological watching brief

A programme of archaeological monitoring (watching brief) of geotechnical test pits was undertaken in April 2019 alongside an assessment of the geotechnical borehole logs. The assessment of the borehole logs from the geotechnical survey were used to inform the design of a purposive geoarchaeological borehole assessment programme aimed at refining the deposit model within the footprint of the scheme as well as to date the alluvial deposit sequences. The fieldwork for this was undertaken in July 2019 and the results reported on by October 2019 at the latest.

The results of the assessment of geotechnical borehole logs, carried out in April 2019, were supplemented with further geoarchaeological information maintained by MOLA (site code: VTG13) and BGS historic boreholes to produce a north – south transect of the sub-surface geology of the Site (Figure 5-18).

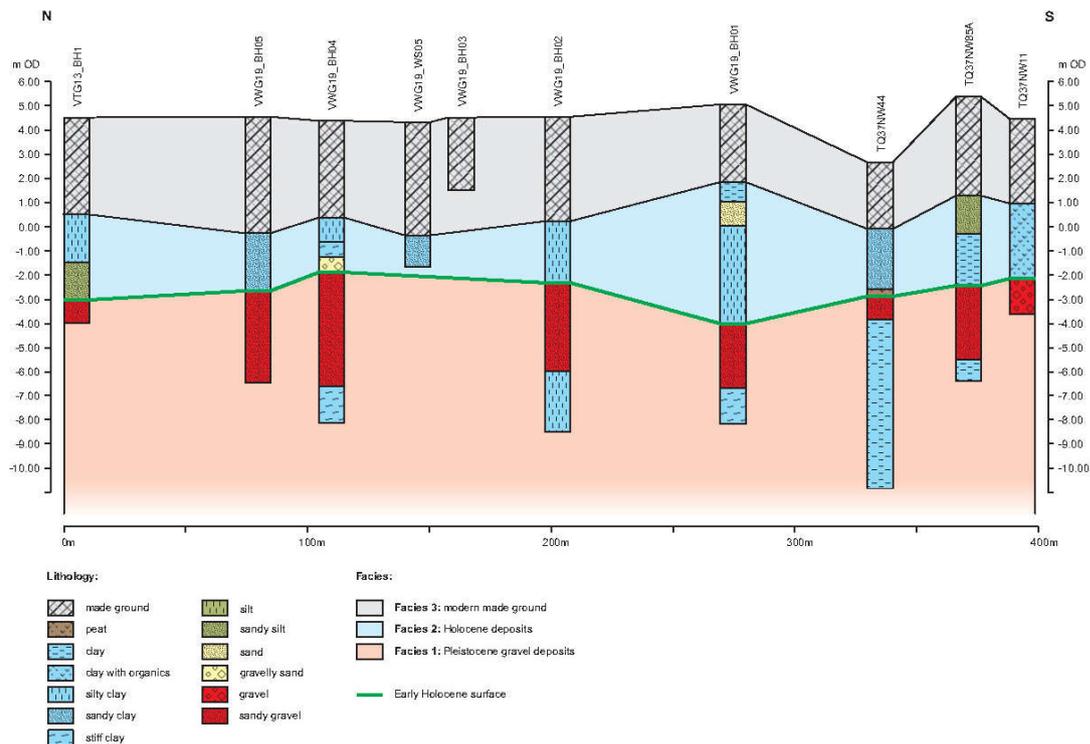


**Figure 5-18 - Borehole and window sample locations used to produce the transect, after MOLA 2019, Fig 2**

Pleistocene terrace gravels were identified at a depth of c. -2.0m OD (c. 6.5m below ground level) dropping off gradually to the south to c. -4.0m OD (8.5m below ground level), and sharply to the north to c. -3.0m OD (7.5m below ground level). The sub surface topography here seems to indicate a palaeochannel running through the southern extent of the Site, with higher terrace gravels to the north and south of it (Figure 5-19).

No evidence of early human activity was recovered from the highest levels of early Holocene sands directly on top of the Pleistocene gravels (c. -1.6m OD; 6.1m below ground level). These gravels were overlain with alluvial deposits measuring on average 2m – 3m in thickness, although in the area of the suspected palaeochannel, deposits were approximately 5m thick. No peat horizons were identified in the alluvial deposits.

These alluvial deposits were overlain in turn with up to 4.5m of made ground deposits, including c. 1.2m of topsoils imported in during the construction and extension of Victoria Tower Gardens. It is possible that elements of the made ground have truncated the top of the earlier alluvial deposits.



**Figure 5-19 - Deposit model from the north-south transect showing levels and thickness of deposits. After MOLA 2019, Fig 3**

The results of the investigation indicated a generally low potential for evidence of Mesolithic to Neolithic activity. The overlying alluvial deposits, however, were considered to have a high potential for indirect anthropogenic evidence, and palaeoenvironmental evidence for the reconstruction of Mesolithic to post-medieval environments.

The archaeological monitoring of the geotechnical test pits undertaken in April 2019 showed there to be a homogeneous importation of top-soil into Victoria Tower Gardens burying the footings of the demolished river-side structures of post medieval date shown on historic mapping. This topsoil was almost certainly imported during the creation of the current park in the late 19<sup>th</sup> to early 20<sup>th</sup> centuries.

The monitoring exercise also confirmed that brick and stone foundations were sealed by this imported topsoil c. 1.2m below current ground level. This evidence confirmed the results of the GPR survey undertaken in 2017 and included identification of the post-medieval river wall that bisects the site north to south as well as identifying foundations of former wharfside structures recorded by the historic mapping.

There was also no indication within the assessed borehole logs to suggest that the made ground sandwiched between an imported topsoil and top of the underlying alluvium were anything other than post-medieval in date and represent the land reclamation and development of the riverside wharfs and associated structures illustrated by 17<sup>th</sup> to 19<sup>th</sup> century mapping and artworks depicting the Site.

Radiocarbon dates have been obtained from two samples of material within the alluvial deposits from boreholes drilled for geoarchaeological purposes (See Appendix I). The lower sample, taken at -2.65m OD recorded a date of c.3956 – 3796 BC; and the upper sample, taken at -2.25m OD returned a date of c. AD765 – 940. These dates indicate that the alluvium on the Site was formed between the Late Mesolithic or Early Neolithic to early medieval periods.

## 6. Potential and Significance

### 6.1. Survival Potential

The potential for archaeological survival is expected to be **High**.

The Site was converted into a public park in the early 20<sup>th</sup> century and has remained so since. In the west of the Site earlier remains will have likely been truncated by the footings of later wharf buildings, but these are considered to be of heritage value in their own right.

The east of the Site was within the River Thames until the creation of the full extent of the park in the early 20<sup>th</sup> century. The thick made ground deposits will have protected palaeoenvironmental remains within alluvial deposits although the post medieval land reclamation and wharveside development and re-development may also have truncated the upper levels of the underlying alluvium.

Underlying alluvial deposits are likely to be waterlogged, resulting in anaerobic conditions that are perfect for preserving organic material. Any archaeological remains within these deposits are likely to be exceptionally well preserved. The likelihood of there being significant archaeological remains buried within the alluvium is, however, considered to be **Low**.

### 6.2. Statement of Potential and Significance

The Site was historically located within the confluence of the River Thames and River Tyburn, south-east of Thorney Island, a raised area of gravels within the rivers. Remains of Bronze Age revetments, found 200m north of the Site indicate the earliest attempts to manage the floodplain in the area, although it appears that tidal flooding in the Iron Age made the area unsuitable to intensive habitation. Activity moved some distance to the north, at Charing Cross until the Early Medieval period, when the first Abbey was established. Development of the ecclesiastic precinct and the royal palace proceeded from the 11<sup>th</sup> century onwards, focused to the north and west of the Site, and included large amounts of land reclamation in these areas.

During these periods it is likely that the area of the Site was exploited for its riverine location and used as transportation access to settlement areas on the drier gravel island. Remains such as timber jetties, boats and trackways may be present within alluvial deposits, as well as possible votive offerings. Evidence of prehistoric to medieval riverine activity would be considered of up to High significance, derived from its evidential value in developing the understanding of early human interaction with the Rivers Tyburn and Thames. Later such features have the potential to be associated with the historic landscape of the scheduled monuments and World Heritage Site in the vicinity of the Site.

By the end of the 16<sup>th</sup> century, the process of land reclamation had expanded southwards, covering the western portion of the Site. Early historic mapping shows a water mill (the Abbott's mill) and a slaughterhouse and yard were located outside of the scheme footprint to the north-west of the Site and it is likely that some form of river wall or timber revetment existed at this time as well. The balance of probability is that any evidence for either the mill or slaughter house are located outside of the footprint of the scheme.

The date of the Abbott's Mill is uncertain, but may be medieval or late-Saxon in origin, and would be considered of High significance owing to the highly preserved evidential value, and its associated value with Westminster Abbey. The slaughterhouse would be of Medium significance based on its evidential value, although may be of High significance if it has non-standard features relating to its potential royal association.

By the 17<sup>th</sup> century, the west of the Site was developed into wharves, and remained so until the end of the 19<sup>th</sup> century, with individual wharves being reclaimed from the river, connected by wooden docks. It is possible that these earlier wharves were located to aid in the storage and transportation of materials for the construction of London's fashionable West End suburbs, and Great Estates. By the early 20<sup>th</sup> century, the full extent of the Site had been reclaimed from the River Thames, and the present gardens laid out. Ordinarily, the footings of post-medieval wharves would likely be considered of low significance, however, as they collectively offer a unique insight into the development of the Westminster waterfront and transitions in use for the area, they are considered to be of Medium significance based on their evidential and historical values. Geophysical survey of the site revealed the original pathways of Victoria Tower Gardens, and it is possible that remains of original garden features survive. None of the garden features identified by geophysical survey or from historic maps and photographs appear to be anything

other than typical for a municipal park of late 19<sup>th</sup> to early 20<sup>th</sup> century date. They are therefore considered to be of low significance.

There is a high potential for the alluvial deposits of the River Thames and River Tyburn to contain palaeoenvironmental remains, as concluded in the 2019 borehole assessment. These remains include plant macro and micro fossils and can be used to recreate past environments from the Holocene period onwards. The results of the geoarchaeological assessment concluded that the “geoarchaeological and palaeoenvironmental remains would be of considerable local importance, further adding to the current understanding of the River Tyburn and development of the local area”<sup>34</sup>. It is therefore considered that palaeoenvironmental remains would be of Medium significance, derived from their evidential value.

Table 6-1, below, summarises the archaeological potential and significance of the Site. Archaeological remains are expected to be immediately beneath ground levels in the west of the Site.

**Table 6-1 - Summary of archaeological potential and significance**

Period	Potential	Features	Significance
Palaeoenvironmental	High	Environmental evidence and artefacts contained within alluvium	Medium (evidential)
Prehistoric	Moderate	Evidence of wetland exploitation (trackways, docks, votive items, boats etc)	High (evidential)
		Residual artefacts	Low (evidential)
Roman	Moderate	Evidence of wetland exploitation (trackways, docks, boats etc)	High (evidential)
		Residual artefacts	Low (evidential)
Early Medieval	Moderate	Evidence of wetland exploitation (trackways, docks, boats etc)	High (evidential)
		Residual artefacts	Low (evidential)
Later Medieval	High	Footings of 16 <sup>th</sup> century Abbott’s Mill (almost certainly outside of the scheme footprint)	High (associated)
		Footings of 16 <sup>th</sup> century slaughterhouse (almost certainly outside of the scheme footprint)	High (associated) High (evidential)
		Evidence of wetland exploitation (trackways, docks, boats etc) Residual artefacts	Low (evidential)
Post-medieval	High (in the west of the Site)	River management features from the 16 <sup>th</sup> century (timber revetments, walls etc)	Medium (evidential/historical)
		Footings of wharf buildings and wharf features from the 17 <sup>th</sup> century	medium (evidential/historical)  Low

<sup>34</sup> MOLA, 2019, UK Holocaust Memorial, Victoria Tower Gardens, Westminster, a report on geoarchaeological monitoring of geotechnical work. London, MOLA, pp13

Period	Potential	Features	Significance
		19 <sup>th</sup> and 20 <sup>th</sup> century original garden features of Victoria Tower Gardens	(associated)

# 7. Potential Impacts

## 7.1. Proposals

The proposed development comprises the construction of a new ground level memorial, with associated double basement level, covering approximately 0.4ha (16% of the total Site's footprint, See Figure 7-1, below). The insertion of new services, and landscaping activities are expected.

The proposed construction activities would entail:

- Aboricultural works to isolate tree roots from damage;
- Creation of a piling mat to 1m depth of topsoil/subsoil removal;
- Insertion of a piled wall to encompass the site to a depth of c. 10m below ground level, but with piles likely extending to c. 15m below ground level;
- Bulk excavation to formation depth with total removal of all deposits within the footprint of the basement (8-10m below ground level); and
- Concrete floor poured at formation depth and works continuing from there.

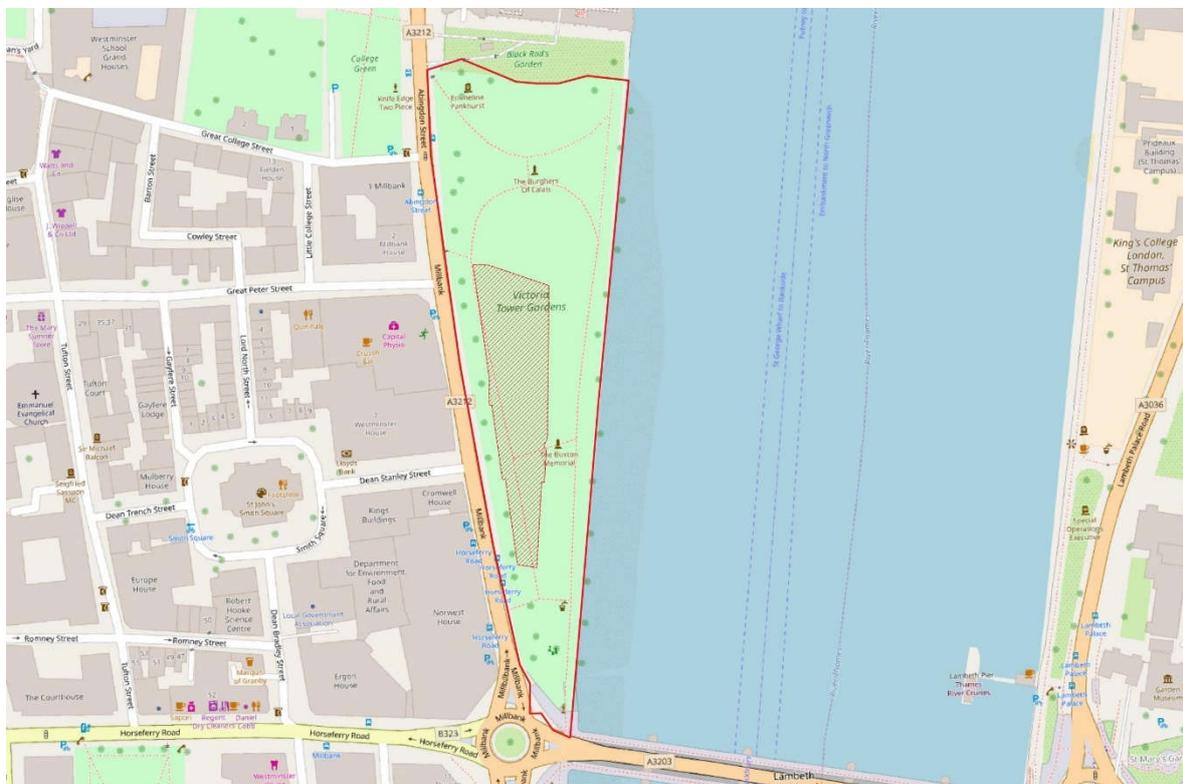


Figure 7-1 - Proposed area of development

## 7.2. Impacts on designated assets

Although it is outside the scope of this assessment to examine built heritage issues, the Site is a Registered Park and Garden, and as such the Proposed Development would constitute a physical impact to the designated asset. However, the impact would overall be temporary resulting from the construction phase of the Proposed Development. Following the completion of the Proposed Development, the gardens would be returned to public use, resulting in less than substantial harm to the asset.

Non-physical effects on the significance of Designated Heritage Assets within the Site's environment, such as setting, are not covered in this report, but will be dealt with in a separate Townscape and Visual Impact Assessment.

### 7.3. Impacts on non-designated assets

The western extent of the Site is considered to have a high potential for palaeoenvironmental remains contained in underlying alluvial deposits, and the footings of post-medieval riverside buildings and wharves. The eastern extent of the Site is considered to have a high potential for palaeoenvironmental remains covered by thick made ground deposits laid during the expansion of Victoria Tower Gardens.

The identification of potential physical impacts upon previously unrecorded archaeological remains within the Site considers all activities that may entail ground disturbance. The main impacts to archaeological remains arising from the proposals above are presented in the table below.

**Table 7-1 - Potential impacts to archaeological remains from proposals**

Proposal	Implication	Impact
Creation of piling mat	Would remove 1.0m of material within the footprint of the development.	Any remains within the upper made ground deposits would be entirely removed, remains would survive beneath this in a truncated state. Earlier remains may survive beneath this truncation. It is now evident that creation of the piling mat will remove a homogeneous imported topsoil, exposing the top of the footings of the post-medieval wharf and wharfside activities.
Insertion of new piles	Insertion of new perimeter piled wall around the area of proposed basement level.  New piles would be inserted	New piles would remove archaeological remains from their footprints as they are driven downwards. Remains may survive in a truncated state between each pile depending on pile size and density.
Excavation of material to formation level	Removal of material within the footprint of the proposed development to 8.0-10.0m below ground level	All archaeological remains would be entirely removed within the footprint of the proposed basement levels to the formation depth of c. 8-10m in places. This will include all evidence for the post medieval reclamation, development and re-development shown on historic mapping. The basement will also remove the upper levels of the underlying alluvium.

#### 7.3.1. Changes to ground water regime

The Site was historically located within the River Thames at the confluence of the Tyburn until its reclamation and development as a Thameside wharf during the post medieval period . The results of the 2019 geoarchaeological watching brief confirm the presence of on average 2m – 3m thick alluvial deposits within waterlogged conditions. The construction methodology indicates a piled foundation wall would be inserted prior to any excavation for the basement level. This may cause some mounding of

below ground water levels, which have to pass around the basement box, although the presence of permeable terrace gravels would offset this<sup>35</sup>.

Dewatering would take place within the extent of the proposed basement, which would not affect water levels outside the impermeable perimeter wall. No dewatering of the general area of the Site is proposed (see Appendix H). It is therefore not anticipated that the proposed basement, or works within it, would reduce levels in the ground water regime in the surrounding area.

### 7.4. Site constraints

The site is currently open publicly accessible parkland in a highly prominent location on the bank of the River Thames, adjacent to the World Heritage Site of the Houses of Parliament and Westminster Abbey. The park contains four designated assets, as well as numerous trees around its perimeter. An effective mitigation strategy would need to consider these constraints when targeting evaluation boreholes, test pits and/or trenches. This would likely entail exclusion zones around designated assets and tree roots.

The site contains services, which, without further information are considered at the time of writing to be live. The locations of any mitigation measures should take these into account and avoid if at all possible.

It is evident that all archaeology of any significance within the footprint of the proposed scheme lies below the c. 1.2m depth of topsoil imported during creation of the current park. Further archaeological intervention (beyond boreholes) to depth into the underlying post medieval development of the site and alluvium below that would require very significant engineering solutions to achieve that would require:

- opening of very extensive areas of trenching to achieve the required depth(s)
- closure and hoarding of the portion of the park within the scheme footprint to the public; installation of engineering solutions such as piled shoring;
- practicable spoil management (including potentially establishing protocols for dealing with spoil contaminants), possibly requiring at least temporary removal and storage of materials off site;
- Likely establishment of de-watering solutions within the alluvium should that depth be achieved and possibly above;
- appropriate remediation of the park after completion;

## 8. Conclusion and Recommendations

### 8.1. Summary of Impacts

The table below summarises the impacts on archaeological remains from the Proposed Development.

**Table 8-1 - Summary of archaeological impact and risk of the Proposed Development**

Asset	Potential	Significance	Potential Impact
Palaeoenvironmental remains	High	Medium (Evidential)	Excavation of a new double basement level to 10.0m below ground level would entirely remove any remains present and extend well into alluvium and possibly even terrace gravels.
Riverine and wetland exploitation features (jetties, boats etc) from the prehistoric period onwards	Low to Moderate	High	
Footings of 16 <sup>th</sup> century slaughterhouse and medieval Abbots Mill	Negligible to Low	Medium to High (Evidential)	The Proposed Development would not impact upon remains of these Heritage Assets, as it appears they are present outside the area of proposed ground works

<sup>35</sup> United Kingdom Holocaust Memorial, Environmental Statement – (Volume 2) Main Report, Chapter 10: Soils, Geology and Hydrogeology. December 2018.

Evidence of river management from the 16 <sup>th</sup> century onwards	High (west of the Site)	Medium (Evidential/Historic)	Excavation of a new double basement level to 10.0m below ground level would entirely remove any remains present and extend well into alluvium and associated palaeoenvironmental and potentially waterlogged deposits.
Footings of wharves and associated docks from the 17 <sup>th</sup> century onwards	High (west of the Site)	Medium (Evidential/Historic)	
Early 20 <sup>th</sup> century garden features	High	Low (Associated)	
<b>Overall Risk</b>	<b>Justification</b>		
<b>High</b>	The Site has a high survival potential for remains of Medium significance based on their evidential and historic values, with the balance of probability indicating that remains of up to High significance associated with the World Heritage Site of Westminster Abbey lie entirely outside of the scheme footprint. The proposed works are for an area covering 16% of the Site's total area, located towards the south, away from the likely location of any remains that may be suitable for scheduling.		

## 8.2. Conclusion

The Site is the Grade II registered Victoria Tower Gardens, a 2.5ha of open garden adjacent to the River Thames, immediately south of the Westminster Abbey and Palace World Heritage Site. The park contains four further listed structures: The Grade I Listed statue to the Burghers of Calais, the Grade II\* Listed Buxton Memorial, the Grade II Listed statue of Emmeline Pankhurst, and the Grade II Listed river embankment wall. The Scheduled Monument of the Jewel Tower is 45m north-west of the Site. The Site is within the Westminster Abbey and Parliament Square Conservation Area,

Archaeological survival is expected to be High within the Site, as it has not been developed since the early 20<sup>th</sup> century when the present gardens were laid out. A geophysical survey of the site was carried out in 2017, which shows a north-south orientated feature, interpreted as a river wall, and additional features to the west. This survey has informed the design of all subsequent archaeological investigation for the scheme. Through examination of historic mapping, it is likely that the north-south feature is a projection based on the riverward extent of individual former wharf buildings that lined the water front from the 17<sup>th</sup> century until the late 19<sup>th</sup> century. The watching brief undertaken on the geotechnical test pits confirmed the presence of a stone coped brick wall with brick tie backs on this line. The monitoring exercise also confirmed the presence of the footings of post medieval structures in the area to the west of this river wall. Both these footings and the river wall were sealed by c. 1.2m of topsoil imported to the site during creation of Victoria Tower Gardens in the late 19<sup>th</sup> to early 20<sup>th</sup> centuries.

There is likely to be a high potential for palaeoenvironmental remains contained within underlying alluvial sequences, which could give a complete environmental sequence for the entire Holocene. The Site was historically within the River Thames and River Tyburn and may have been used for riverine exploitation during these periods. Evidence of this activity would comprise timber jetties, trackways or boats contained within the alluvial deposits.

The Proposed Development would be limited to an area covering 0.4ha in the southern two-thirds of the Site and would entail the excavation of a new double basement level to 10.0m below ground level. This would entirely remove any remains present within the footprint of the proposed monument down to formation level at up to c. 8-10m depth.

## 8.3. Recommendations

The archaeological potential of the Site is somewhat unique in the Greater London area, owing to the lack of 20<sup>th</sup> century and later development. It offers a complete sequence of remains of industrial development along the waterfront from the 16<sup>th</sup> century onwards, with earlier palaeoenvironmental remains contained in underlying alluvial deposits. In the light of the Site's potential for remains of up to High significance, the Local Authority's archaeological advisor will request further site-specific work.

Consultation with City of Westminster's Advisor has been undertaken at the time of writing, and an initial phased programme of works devised. An initial phase of geoarchaeological boreholes was carried out in April and June 2019 to create a sub-surface deposit model. The results of this deposit has informed the implementation of a purposive geoarchaeological borehole survey to characterise the nature of the

local palaeoenvironment, refine the deposit model for the Site and date the alluvial sequences. The fieldwork for this was undertaken in July 2019 and the retrieved datasets are currently (August 2019) being analysed with full reporting expected by October 2019.

The results and findings of the GPR survey, this DDBA, the reporting on monitoring of geotechnical test pits, initial geoarchaeological interim assessment and the results of the purposive geoarchaeological and sediment sequence dating programme will inform the future archaeological strategy to support construction of UKHM.

Such a mitigation strategy is likely to entail the full archaeological excavation of the area of below ground works, to ensure that all remains are investigated and preserved by record ahead of their removal and/or truncation. This could also provide opportunities for public engagement events and outreach programmes.

Any such works would be undertaken under a Written Scheme of Investigation (WSI) agreed with and approved by GLAAS, the City of London's archaeological advisor and delivered through the application of all appropriate guidance including GLAAS guidance for delivering archaeological projects in the Greater London Area<sup>36</sup> and treatment of archaeological remains within archaeological priority areas<sup>37</sup>.

It is evident that all archaeology of any significance within the footprint of the proposed scheme lies below the c. 1.2m depth of topsoil imported during creation of the current park. Further archaeological intervention (beyond boreholes) to depth into the underlying post medieval development of the site and alluvium below that would require very significant engineering solutions to achieve

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<sup>36</sup> GLAAS 2015: Guidelines for Archaeological Projects in the Greater London Area

<sup>37</sup> GLAAS 2016: Greater London Archaeological Priority Area Guidelines

# Appendices

# Appendix A. Gazetteer of Archaeological Assets

## A.1. Designated Assets

List Entry No.	Asset Name	Status
1000095	Palace of Westminster, Westminster Abbey and St. Margaret's Church	World Heritage Site
1003579	The Chapter House and Pyx Chamber in the abbey cloisters, Westminster Abbey	Scheduled Monument
1003580	The Jewel Tower	Scheduled Monument
1000845	Victoria Tower Gardens	Park and Garden Grade II
	Tier 1: Westminster and Whitehall	Archaeological Priority Area

## A.2. Non-Designated Assets

Information in this gazetteer was obtained from the GLHER under license (License Ref 14303)

Monument ID	Name	Description	Period
MLO100460	Great Peter Street [North House], London, SW1 {Mesolithic Adze}	A Mesolithic adze was found at Great Peter Street, Westminster during a watching brief being carried out by Museum of London Archaeology between 2008 and 2009.	Prehistoric
MLO10662	Millbank, Westminster {Palaeolithic Handaxe and Flake}	A middle palaeolithic handaxe and flake have been discovered on Millbank.	Middle Palaeolithic
MLO26848	River Thames	Polished flint axe head	Prehistoric
MLO26849	River Thames	Bronze sword blade	Bronze Age
MLO26850	River Thames	Flanged axe head	Bronze Age
MLO3202	Millbank	THIS NEOLITHIC FLINT FLAKE WAS FOUND WITH THE ARMLET ( MLO11015) BUT THERE IS NO EVIDENCE THAT THESE TWO ARE ASSOCIATED IN ANY WAY	Neolithic
MLO70264	Thames Foreshore	Foreshore survey identified peat/organic clay deposit	Prehistoric
MLO70266	Thames Foreshore	Foreshore survey identified peat/organic clay deposit	Prehistoric
MLO70270	Thames Foreshore	Foreshore survey identified peat/organic clay deposit	Prehistoric
MLO70271	Thames Foreshore	Foreshore survey identified peat/organic clay deposit	Prehistoric
MLO70273	Thames Foreshore	Foreshore survey identified peat/organic clay deposit	Prehistoric

Monument ID	Name	Description	Period
MLO70279	Thames Foreshore	Foreshore survey identified peat/organic clay deposit	Prehistoric
MLO8884	Horseferry Rd (off )	Bronze sword found in River Thames	Bronze Age
MLO8885	Horseferry Rd (off )	Bronze sword found in River Thames	Bronze Age
MLO12948	Millbank	3 Bronze coins of Constantine I	Roman
MLO23316	Great College St	The remains of a building were found at Westminster Abbey in 1883.	Roman
MLO11015	Millbank	Bronze armlet first thought to be bronze age, but harden suggests it is more likely to be 'dark age'. Flint flake (see 081139) found with armlet but of no known association	Early Bronze Age to Early Medieval/Dark Age
MLO1691	Houses of Parliament	8th century sword with pattern-welded blade & Rhineland hilt found 1948, 35ft below modern ground level during excavations for the foundations of a boiler house in the gardens on the south side of the House of Lords.	Early Medieval/Dark Age
MLO23201	Victoria Tower Gardens	Site of mill associated with Westminster abbey, the abbots undershot mill marked on Norden's map of 1593. Powered by a possibly canalized branch of the Tyburn stream.	Medieval to Post Medieval
MLO25733	College Garden, Westminster Abbey	Augur survey by the Department of Greater London Archaeology in 1988 indicated a probably natural channel of the Tyburn. Early occupation, some medieval and post medieval features showing intensive use of the garden into the 17th century.	Medieval to Post Medieval
MLO29957	PALACE OF WESTMINSTER	Later Parliament Stairs. Noted as "The Queenes Bridge" on Agas map	Medieval to Post Medieval
MLO38501	HOUSES OF PARLIAMENT	South East corner of precinct overlooking river chamber and chapel added by Edward III. This area appears void on the 'Agas' map of the 1550s & little is known of the exact layout. Smith shows a stone foundation that	Medieval to Post Medieval

Monument ID	Name	Description	Period
		was paved over in the area.	
MLO48585	Abingdon Street {Medieval/Post Medieval riverside wall?}	East side of palace (medieval bank just east of St Stephen's Chapel). Date of wall unknown on other sides. In the Abingdon Street excavation in 1963 part of a waterfront wall was found just south of the Jewel Tower and moat. It has been suggested that this is part of the riverside wall and quay built in the reign of Henry III. The wall was 6ft wide, up to 12 ft high at the west end and traced for 130ft. It was ashlar faced and was of similar construction to the abbey precinct wall, into which it bonded. 1355 ragstone wall separated the palace from the newly built Woolstaple to the north.	Medieval to Post Medieval
MLO48816	Abingdon Street, [Jewel Tower Gardens], Westminster, {possible medieval wall}	It is recorded that a significant wall was recorded inside and parallel to the Jewel Tower moat. This record may refer to the walls which are now uncovered in the garden and are thought to be the remains of the dock that stood here prior to the moat	Medieval to Post Medieval
MLO48873	Abingdon St	Excavation by Green 1963 found a medieval dock to the south of the Jewel Tower & moat, possibly part of the riverside quay & wall built during the minority Henry III, 1216-1227. When the jewel tower & its moat were built, the 14th century quay possibly remained. Excavation showed that it contained late 15th c-16th century material & evidence from the mud deposits showed that it was below low tide level	Medieval to Post Medieval
MLO56064	Abingdon St	Timber and wattle breakwater running roughly parallel to waterfront	Medieval to Post Medieval
MLO56157	Abingdon St	From at least the 14th century, there was a gateway associated with the bridge over the moat (MLO57045). This is	Medieval to Post Medieval

Monument ID	Name	Description	Period
		shown as x99 on Agas map. It is also shown on the 1572 Braun & Hogenburg map	
MLO56813	Abington Street {Medieval/Post Medieval quay}	6ft wide ashlar faced quay traced for 130ft at west end. suggested built under Henry III. Early 13th century and continued in use until the late 16th century, when the land to the south of the palace was finally reclaimed	Medieval
MLO56814	GREAT COLLEGE ST	A large tower with crenelated parapet & a battered base is shown on Braun & Hogenburg's 'civitas orbis terrarum' map of 1572. Excavation by Green in 1963 found remains of a corner tower surviving to 6 ft, faced with squared Kentish ragstone, butted against phase 1 wall & bonded to phase 2 wall	Medieval to Post Medieval
MLO56842	Abingdon St	Small landing stage in moat to Jewel Tower, former dock to Palace of Westminster. Still extant and visible under bridge to Abingdon Rd. It was originally reached through a small postern gate in the palace wall.	Medieval
MLO56845	Houses of Parliament	The Queen's Chapel, constructed 1237	Medieval to Post Medieval
MLO56909	Abingdon Street, [Jewel Tower Gardens], Westminster, {part of the medieval Great Drain}	Excavation by Green in 1963 found later extension to the line of the great drain of Westminster Abbey made after land reclamation of waterfront. Brick vault on oak raft & elm piling, 17th century material found in drain	Medieval to Post Medieval
MLO57045	Abingdon St		Medieval to Post Medieval
MLO9180	Abingdon St	Approx 6 feet of river mud over most of the area recorded in excavation in 1963. Gradual rise of gravel to the north suggests southern foreshore of Thorney Island	Medieval to Post Medieval
MLO9182	Abingdon St	Bridge over channel of Tyburn to Millbank, part is said to exist under the pavement	Medieval to Post Medieval
MLO105239	Millbank, [River Thames], Westminster	A 17th century cannon ball was recovered from	Post Medieval

Monument ID	Name	Description	Period
	{17th century cannon ball}	the River Thames by dredging in 2013.	
MLO70257	Thames Foreshore	Foreshore survey identified timber revetment supporting modern river wall	Post Medieval
MLO70260	Thames Foreshore	Foreshore survey identified kiln waste	Post Medieval
MLO70261	Thames Foreshore	Foreshore survey identified two 19th or 20th century timber fenders	Post Medieval
MLO70262	Thames Foreshore	Foreshore survey identified mooring chain and large timber block	Post Medieval
MLO70263	Thames Foreshore	Foreshore survey identified a timber structure, possibly a revetment (barge bed)	Post Medieval
MLO70276	Thames Foreshore	Foreshore survey recorded unidentified structure consisting of vertical and horizontal timbers	Post Medieval
MLO70281	Thames Foreshore	Foreshore survey identified consolidation deposit of foreshore for causeway	Post Medieval
MLO70283	Thames Foreshore	Foreshore survey identified modern river wall	Post Medieval
MLO104602	Smith Square [Churchyard of St John the Evangelist War Memorial] Westminster, SW1P 3HA {WW1 memorial}	War memorial for the First World War in churchyard of former St John's the Evangelist.	Modern
MLO105786	Millbank, opposite Great Peter Street, Westminster.	Site recorded as part of the Defence of Britain project from field and documentary work carried out between April 1995 and December 2001. The purpose of the Project was to record the 20th century military sites across the United Kingdom, and with a view	Modern
MLO18753	Westminster abbey	A resistivity survey by Andrew David of the geophysical dept of the ancient monuments lab, in 1987, indicated possible structures in this area	Unknown
MLO67164	Old Palace Yard	Flood deposits	Unknown
MLO70269	Thames Foreshore	Foreshore survey identified mud over a large area	Unknown
MLO70285	Thames Foreshore	Foreshore survey identified mud extending 10m from river wall	Unknown
MLO97948	Great College Street (No 16), London, SW1	The earliest deposit recorded extended below the limits of the excavations. Within it were recorded a	Unknown

Monument ID	Name	Description	Period
		single fragment of medieval pottery, frequent oyster shell and fragments of peg tile. Natural was not encountered.	

### A.3. Past Investigations

Event ID	Name	Event Type	Organisation
ELO10095	Great Peter Street [North House], London, SW1: Watching Brief	WATCHING BRIEF	Museum of London Archaeology
ELO10426	Marsham Street Nos.25-37 and Tufton Street Nos.46-50, WC1 (Evaluation)	EVALUATION	Museum of London Archaeology
ELO10437	The Jewel Tower, Old Palace Yard, Westminster (Desk Based Assessment)	DESK ASSESSMENT BASED	Museum of London Archaeology
ELO10438	Old Palace Yard (The Jewel Tower, Palace of Westminster), College Mews, Westminster, London SW1: Watching Brief	WATCHING BRIEF	English Heritage, Central Archaeology Service
ELO12620	Abingdon Street [The Jewel Tower], Westminster, London SW1: Tree Ring Analysis of Timbers	DENDROCHRONOLOGICAL SURVEY	English Heritage
ELO13449	Milbank [Victoria Tower Gardens], Westminster: Historic Environment Assessment	DESK ASSESSMENT BASED	Museum of London Archaeology
ELO13974	Abingdon Street [Black Rod's Garden], Westminster, SW1: Historic Environment Assessment	DESK ASSESSMENT BASED	Museum of London Archaeology
ELO1433	The Palace of Westminster (Peers' Court, Houses of Parliament), London SW1: Watching Brief	WATCHING BRIEF	Museum of London Archaeology Service
ELO14661	Abingdon Street (The Palace of Westminster), London SW1: Excavation	EXCAVATION	Museum of London Archaeology Service
ELO15198	Westminster Swimming Pool, 8 Barton Street, SW1: Watching brief	WATCHING BRIEF	Pre-Construct Archaeology

Event ID	Name	Event Type	Organisation
ELO16690	Barton Street (No 8), Westminster, SW1: Watching Brief	WATCHING BRIEF	Oxford Archaeological Unit
ELO16717	Lord North Street (No 19), Westminster, SW1P 3LD: Heritage Statement	HERITAGE STATEMENT	Unassigned
ELO16719	Horseferry Road [Dean Bradley House], Westminster: Desk Based Assessment	DESK BASED ASSESSMENT	RPS Planning & Development
ELO17184	Abingdon Street [Black Rod's Garden], Westminster, SW1: Heritage Statement	HERITAGE STATEMENT	Donald Insall Associates Ltd
ELO17185	Abingdon Street [Black Rod's Garden] Westminster, SW1: Excavation	EXCAVATION	Museum of London Archaeology
ELO17871	PROPOSED TICKET OFFICE, 6-7 Old Palace Yard &, The Jewel Tower Garden, London, SW1: An Archaeological Impact Assessment	DESK BASED ASSESSMENT	MOLA S
ELO18344	Great College Street [Barclays Cyle Hire Phase 2, Bike docking stations] City of Westminster SW1: Desk Based Assessment	DESK BASED ASSESSMENT	Mott MacDonald
ELO2159	RIVER THAMES	NON-ARCHAEOLOGICAL INTERVENTION	Unknown
ELO2160	RIVER THAMES	NON-ARCHAEOLOGICAL INTERVENTION	Unknown
ELO2161	RIVER THAMES	NON-ARCHAEOLOGICAL INTERVENTION	Unknown
ELO4229	Old Palace Yard (Nos 6-7) and Jewel Tower Garden, London SW1: Watching Brief and Excavation	EXCAVATION; WATCHING BRIEF	Museum of London Archaeology Service
ELO4836	Westminster Abbey (College Garden)	AUGER SURVEY	Department of Greater London Archaeology
ELO6127	Great College Street (No 16), London, SW1: Watching Brief	WATCHING BRIEF	Museum of London Archaeology Service
ELO7058	Old Palace Yard (nos 6-7) and The Jewel Tower Garden, London SW1: Watching Brief	WATCHING BRIEF	Museum of London Archaeology Service

Event ID	Name	Event Type	Organisation
ELO765	The Palace of Westminster (Peers' Court, Houses of Parliament), London SW1: Watching Brief	WATCHING BRIEF	Museum of London Archaeology Service
ELO7765	Great Peter Street [North House], London, SW1: Watching Brief	WATCHING BRIEF	Museum of London Archaeology Service
ELO7928	Smith Square [St John's], Westminster: Desk based assessment	DESK ASSESSMENT BASED	Mills Whipp Partnership
ELO8556	Horseferry Road [Westminster Hospital], London SW1: desk based assessment	DESK ASSESSMENT BASED	AOC Archaeology Group
ELO8678	Abingdon Street (Chancellor's Court, Victoria Tower, Palace of Westminster), London SW1: Watching Brief	WATCHING BRIEF	Museum of London Archaeology Service
ELO94	Deans Yard, (No 17), Westminster, Excavation, (Phase 2)	EXCAVATION	Hertfordshire Archaeological Trust

# Appendix B. Bibliography

## B.1. Documentary Sources

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- John Norden's Map of Westminster, 1593
- Faithorne and Newcourt's Map of London, 1658
- William Morgan's Map of London, 1681
- John Smith's Map of London, 1724
- John Rocque's Map of London, 1746
- Richard Horwood's map of London, 1799
- Ordnance Survey 1<sup>st</sup> edition 25":mile map (187 )
- Ordnance Survey 2<sup>nd</sup> edition 25":mile map (1896)
- Ordnance Survey 3<sup>rd</sup> edition 25":mile map (1916)

## B.3. Other Sources

### B.3.1. National Archives

- WORK 11/63 Plan of proposed extension of embankment, 1867
- WORK 16/2555 Photographs of bomb damage to Victoria Tower Gardens, 1941

### B.3.2. Public Domain

The Houses of Parliament from Millbank by David Roberts, 1861

Giovanni Antonio Canal, il Canaletto 1746-55, "The River Thames looking towards Westminster from Lambeth"

### B.3.3. Online Sources

Britain From Above: [britainfromabove.org.uk](http://britainfromabove.org.uk)

British Geological Survey: [bgs.ac.uk](http://bgs.ac.uk)

# Appendix C. Transcript of Reference Book

No on Plan	Description of Property	Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers
<b>Millbank Street</b>				
1	Bed and foreshore of the River Thames	The Crown, Conservators of the River Thames, The Mayor, Commonalty, and Citizens of the City of London, The Lords of the Admiralty		
2	Norway Wharf, office, private road, lay-bye, stabling, and sheds	The Marquis Camden	George Smith	George Smith
3	Public-house and yard, No 6	The Marquis Camden	...	Messrs. Combe, Delafield, & Co., William Neate
4	Dwelling-house, yard, and out-building, No 5	The Marquis Camden	...	George Tijou
5	Dwelling-house, yard, and out-building, No 4	The Marquis Camden	...	George Smith, Charles Chippett, Charles Harrison
6	Dwelling-house and yard, No 3	The Marquis Camden	...	Edwin Oram
7	Dwelling-house, shop, yard, and outbuilding, No 2	The Marquis Camden	...	John Luxton Venner
8	Dwelling-house, shop, yard, and outbuilding, No 1	The Marquis Camden	...	Peter Wood
9	Counting-house	The Marquis Camden	George Smith	
10	Dwelling-house	The Governors of the Greycoat Hospital, in Tothill Fields, of the Royal Foundation of Queen Anne	Messrs. Combe, Delafield, & Co.	Messrs. Combe, Delafield, & Co., James Neave, Sen.
11	Dwelling-house, warehouse, and office	The Governors of the Greycoat Hospital, in Tothill Fields, of the Royal Foundation of Queen Anne	Messrs. Combe, Delafield, & Co.	Messrs. Combe, Delafield, & Co., James Neave, Jun.
12	St Peter's Wharf, yard and shed	The Governors of the Greycoat Hospital, in Tothill	Messrs. Combe, Delafield, & Co.	Messrs. Combe,

		Fields, of the Royal Foundation of Queen Anne		Delafield, & Co.
13	Warehouse	The Governors of the Greycoat Hospital, in Tothill Fields, of the Royal Foundation of Queen Anne	Messrs. Combe, Delafield, & Co.	Messrs. Combe, Delafield, & Co.
		<b>Abingdon Buildings</b>		
14	Warehouse and wharf	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	George Helmore, Messrs. Freen & Co.	Messrs. Freen & Co.
15	Warehouse, wharf and lay-bye	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	George Helmore, Messrs. Freen & Co.	Messrs. Freen & Co.
16	Counting-house, stabling, outbuilding, wharf, and lay-bye	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	George Helmore	George Helmore
17	Dwelling-house, yard and outbuildings	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	George Helmore	George Helmore
		<b>Abingdon Street</b>		
18	Dwelling-house and shop, No 17	Elizabeth Allen	James Gillies	James Gillies
19	House and offices, No 16	Thomas Lambert	Richard Collins	Thomas Jackson, George Gordon Page, Alexander R Binnie
20	House, yard and offices, Palace Chambers	Charles Richard Cheffins	Henry Barker Simson, William Wakeford	Henry Barker Simson, William Wakeford
21	House, yard, offices, and outbuildings, No 13	James Leman, Robert Carr Foster, Trustees of Mrs. Charlotte Agnes Forbes, James Hodder Forbes, George Wentworth Forbes, Charles Wentworth Forbes	...	John Braithwaite, Sidney Braithwaite, Charles Wentworth Forbes
22	House, yard, and offices, No 12	William Robinson, Philip May, Trustees of William Robinson, deceased	James William Tyler, Edward Reddish, London Warming and Ventilating Company, North British Oil and Candle Company,	James William Tyler, Edward Reddish, London Warming and

			James Cooke, Bolden	Samuel Henry	Ventilating Company, North British Oil and Candle Company, James Samuel Cooke, Henry Bolden
23	Public-house, and yard, No 11	Anne Brewer	City of London Brewery Company Limited		John Clark

#### Little Abingdon Street

24	Dwelling-house, yard and outbuilding, No 4	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	...		William Heritage
25	Dwelling-house and yard	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	William Winn		Henry Layton, William Stapleton
26	Counting-house and wharf	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	William Winn		Edward Lemuel Cockerell
27	New wharf and gateway	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	William Winn		William Winn, Edward Lemuel Cockerell
28	Stabling, shed, and wharf	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	William Winn		William Winn, Edward Lemuel Cockerell
29	Dwelling-house, No 6	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	...		Alexander McInnes, Henry Wright
30	Dwelling-house, yard, wharf, counting-house, warehouse, and shed	Edward Wood and Thomas Turner, Charles Turner, Henry Wood, Trustees of Edward Wood deceased	Messrs. Dalton & Co., John Hills		John Hills

#### Public Roads and Footways

31	Millbank Street	The Commissioners of her Majesty's Works and Public Buildings			
32	Abingdon Street	Metropolitan Board of Works			
33	Abingdon Buildings	Vestry of the Parish of St John the Evangelist			

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Little Abingdon Street

The Chelsea Water-works  
Company, The Gas-light and  
Coke Company

# Appendix D. Asset Distribution Maps

# Appendix E. Geophysical Survey

# Appendix F. Geoarchaeological Watching Brief

# Appendix G. Geoarchaeological Report

Jonathan Hutchings

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