

**United Kingdom Holocaust Memorial  
and Learning Centre**

Environmental Statement (Volume 5) Appendix C  
Revised Construction Management Plan  
April 2019



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# 1 Introduction

## 1.1 Policy Outline

The City of Westminster Code of Construction Practice sets out the requirements and considerations that should be addressed by all construction activities within the City of Westminster. In addition to this, the Basement Development in Westminster Supplementary Planning Document provides specific information and guidance on the policies relating to basement construction.

Several key policies and documents are used to determine planning application outcomes within the Westminster City Council's (WCC) jurisdiction. The Westminster City Plan contains Strategic Policies S29 (Health and Well-being), S31 (Air Quality) and S32 (Noise), which have been put in place to ensure the amenity of neighbouring residents and areas is maintained, whilst minimising air and noise pollution caused by construction works. The London Plan also offers policies to guide construction works, including policy 5.18 (Construction and Demolition Waste), 5.20 (Aggregates), 5.21 (Contaminated Land) and 7.14 (Air Quality). Finally, the Unitary Development Plan (UDP) Policy ENV6 elaborates on requirements relating to noise pollution and hours of work during construction activity.

Adherence with these codes and policies will ensure the interests of neighbouring residents, businesses and the public are taken into account by the Contractor, for the duration of the proposed construction activity.

## 1.2 Report Overview

This report presents how construction of the United Kingdom Holocaust Memorial and Learning Centre ("UKHMLC") will be undertaken, and in particular, discusses the potential impact to the surrounding environment, residents, businesses and public. Construction of the UKHMLC will be undertaken in accordance with the City of Westminster Code of Construction Practice and the Basement Development in Westminster Supplementary Planning Document, with consideration of the abovementioned policy requirements.

Due to the historical nature of the site and potential for archaeological discoveries, the construction of the UKHMLC will be split into two phases; an enabling works package and the main works package. A contractor or contractors will be appointed in due course and they will be responsible for producing a Site Environmental Management Plan (SEMP) for each phase. These will demonstrate their proposed approach to ensure compliance with the relevant codes and policies.

The selected contractor/s will be required to be part of the Considerate Constructors Scheme, to ensure the impact of overall project's construction is minimised.

The key aims of this report are:

- to outline the general Contractor requirements and responsibilities relating to all aspects of construction, and
- to detail the general control measures required to manage the environmental impacts on the surrounding areas.
- To detail the initial tree protection measures required to manage impacts on the London Plane tree population.

Specific outputs of this report include:

- **Construction programme and methodology**

The construction programme shows a duration of 31 months from commencement of site enablement works to completion of exhibition and Learning Centre fit out works. This assumes that Phase 1 of construction, incorporating the archaeological investigation, will transition immediately into Phase 2. The developer's design engineer, WSP, has proposed a construction sequence and the indicative methodology is based on this sequencing.

- **Working hours**

Working hours will be determined by planning permission however, it is expected that core working hours will be between 8:00am and 6:00pm on weekdays and between 8:00am and 1:00pm on Saturdays. To ensure any adverse impacts on the surrounding areas are mitigated appropriately, we propose that the selected contractor obtain a Section 61 agreement.

- **Site logistics**

Access to the site, both vehicular and pedestrian, will occur via the western side of the site, from Millbank. Adequate manoeuvring space will be provided within the site to allow for vehicle turnaround and loading, ensuring all hazardous vehicle movements are contained within site. All aspects of traffic impact will be subject to the submission and agreement of either the SEMP or a stand-alone Construction Traffic Management Plan, to be prepared by the appointed contractor/s.

- **Environmental impact**

All relevant environmental considerations, including noise and vibration, dust and air pollution, waste management, water pollution, flood risk and ecology, will be evaluated and reported by the selected Contractor/s as part of the required SEMP.

- **Draft Tree Protection Measures**

Appropriate tree and ground protection measures will be detailed within areas of the site subject to increased loading, such as vehicle and foot trafficked areas resulting from any approved development, as well as welfare and material storage areas.

### **1.2.1 Westminster Code of Construction Practice**

The Westminster Code of Construction Practice ("CoCP") sets out the minimum standards and procedures that all construction works within the city must adhere to. The purpose of these standards and procedures is to manage and minimise the environmental impacts of such construction works, to ensure that any adverse effects on the surrounding areas can be mitigated appropriately.

This report aims to demonstrate how construction of the proposed UKHMLC will comply with the Construction Management Plan requirements of the CoCP, based on current design and construction assumptions. However, the ultimate responsibility for the construction of the UKHMLC will rest with the appointed Contractor/s, who will assess and report on all aspects of construction, working with the appointed project Arborist through preparation and submission of the SEMP in due course.

### **1.2.2 Planning Conditions and Approvals**

Construction of the UKHMLC will be governed by conditions of planning permission, enacted under the Town and Country Planning Act. In particular, this is anticipated to dictate working hours of the construction site, environmental impact mitigation methods and any other construction related mitigation required to minimise the impact the surrounding area.

All necessary approvals and licences required for construction activities proposed for the UKHMLC will be the responsibility of the selected Contractor/s.

## **2 Project Details**

### **2.1 Scope of Works**

The UKHMLC is proposed to be constructed in the Victoria Tower Gardens, Westminster, London.

The development will involve the installation of the UKHMLC, including excavation to provide a basement and basement mezzanine for the learning centre (Class D1); erection of a single storey entrance pavilion; re-provision of the Horseferry playground and refreshments kiosk (Class A1); improvements to the Buxton Memorial and repositioning of the Spicer Memorial; new hard and soft landscaping and lighting around the site; and all ancillary and associated works.

### **2.2 The Employer**

The Secretary of State for Housing Communities and Local Government

### **2.3 Location**

#### **2.3.1 Site Address**

Victoria Tower Gardens, Millbank, London, SW1P 3JU

#### **2.3.2 Site Description and History**

The Victoria Tower Gardens (“the gardens”) are located on the north bank of the River Thames and bordered by the Palace of Westminster. Managed by The Royal Parks, the gardens is a designated Grade II listed garden just outside – though not on the boundary – of the Westminster World Heritage Site (WWHS) and in close proximity to a number of celebrated listed buildings. Most notably, the Palace of Westminster, to the north of the gardens, is a Grade I listed building within the WWHS and within the Westminster Abbey and Parliament Square Conservation Area.

The gardens have an existing memorial-narrative with a series of monuments associated with democracy: the abolition of slavery, the fight for universal suffrage and civic sacrifice. These are: the Buxton Memorial (Grade II\*, 1865), the Statue of Emmeline Pankhurst (Grade II, 1930), and the Burghers of Calais (Grade I, 1915). The gardens are designated a zone of Monument Saturation.

The gardens were initially laid out in 1879 and opened in 1914, creating part of the River Thames embankment. A map of 1878 shows the site entirely covered in wharves and houses, while a map of 1896 shows the very beginnings of the gardens’ development. The current layout of the gardens reflects the most recent major revisions undertaken in the mid-1900’s.

## **3 Construction Programme and Methodology**

### **3.1 Programme**

A strategic construction programme has been produced to represent an indicative programme of works. This is presented in the following figure:

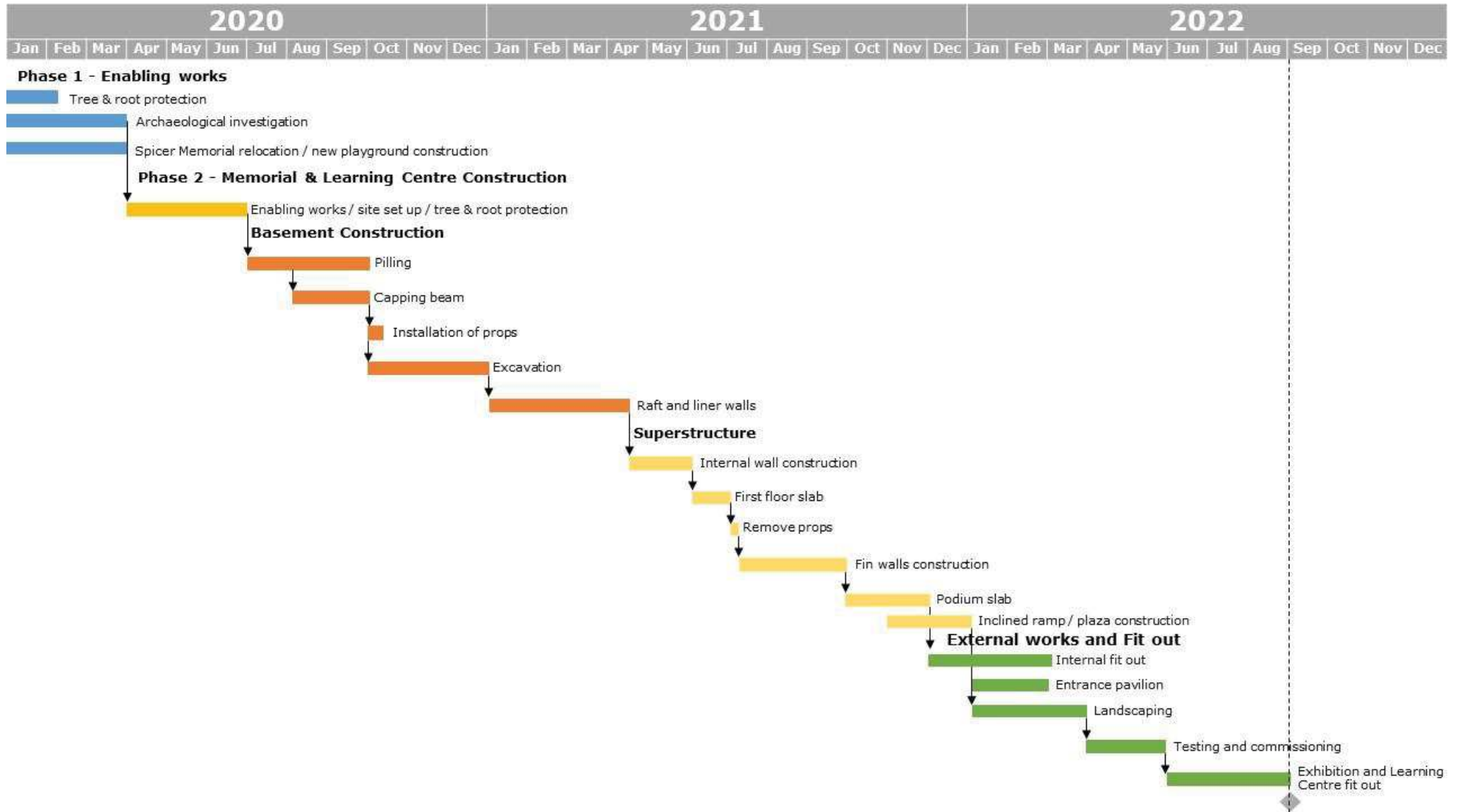


Figure 1: Indicative Programme of Works



## 3.2 Methodology

As mentioned, due to the historical nature of the site and potential for archaeological discoveries, the construction of the UKHMLC will be split into two phases:

### Phase 1

This phase will incorporate an archaeological investigation, repositioning of the Spicer Memorial and construction of a new playground at the southern end of the gardens.

### Phase 2

This phase will consist of the main construction works for the UKHMLC. This will include all piling work, excavation and superstructure construction, as well as park reinstatement.

The exact methodologies for both phases will be determined by the respective appointed contractor/s in due course. They will each be responsible for detailing how they intend to undertake each component of work however, it is anticipated that the works will be undertaken in the following indicative sequence:

#### 3.2.1 Phase 1 - Enabling Works

##### Archaeological Investigation

The exact extent of the archaeological investigation will be determined by Historic England however, it is expected to involve investigation of a defined area within the footprint of the proposed basement (see Figure 15). The archaeological investigation will be confined to a hoarded area to prevent park users accessing the investigation site and to allow for the majority of the gardens to function as usual. Supervision within any notional tree root protection area will be provided by the appointed project Arborist to ensure tree welfare throughout this phase.

Access, areas of work and the measures to prevent adverse impact on the surrounding trees is presented and discussed in Section 4.1.1.

Due to Phase 2 commencing directly after Phase 1, the excavation associated with the archaeological dig will not be backfilled and will instead form the first part of basement excavation, to occur in Phase 2.

Break-down and re-arranging of tree protection measures will occur between phases however.

##### Spicer Memorial Repositioning & Horseferry Playground Reinstatement

Concurrent with the archaeological investigation, the Spicer Memorial will be carefully dismantled, documented and repositioned to allow for construction of the proposed Entrance Pavilion, followed by reinstatement of the Horseferry Playground. These works will be undertaken within a single hoarding around the southern end of the gardens, whilst still allowing for public access along the embankment.

Access, areas of work and the measures to prevent adverse impact on the surrounding trees is presented and discussed in Section 4.1.1.

#### 3.2.2 Phase 2 – Main Works

Before any Phase 2 works commence, the required tree protection will be established. This is outlined in Section 4.1.2.

### 1.1.1.1 Basement Construction

#### Piling of Secant Wall

Construction of the secant pile wall will commence with the required piling establishment. This will include careful removal of the top 1m of soil within the basement boundary, allowing for appropriate tree root investigation. The Contractor will allow for tree root observation in accordance with any WCC planning conditions. Root pruning will then be undertaken under observation by WCC, if required. The piling mat will then be installed on the basement side of the secant pile wall, to enable all piling works to occur from within the basement boundary. This will eliminate any undue impact to the root protection areas (RPA's) beyond the basement. The process of piling establishment is illustrated in the figure below:

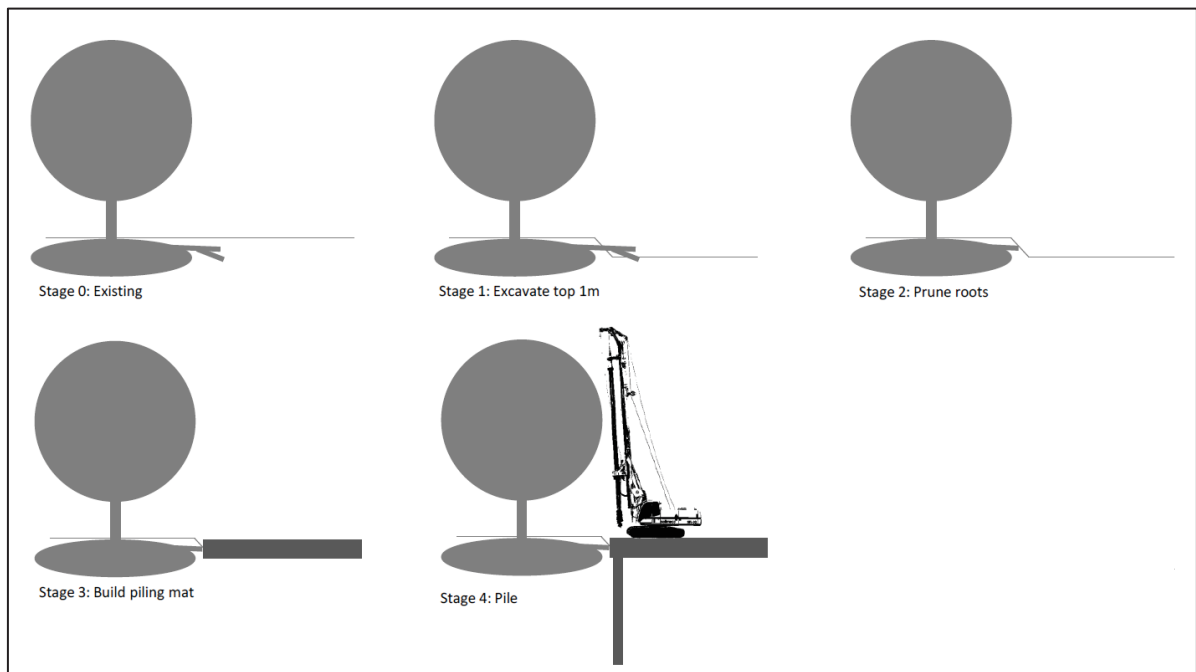


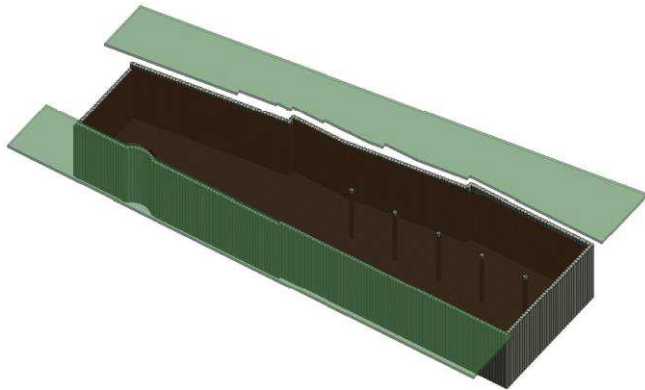
Figure 2: Piling Establishment

The secant pile wall will form the basement wall and where required, will be bored by restricted-access piling rigs, eliminating the risk of interference with the nearby tree canopies. The Martello Technique may be utilised as this enables piling activity in headroom conditions as low as 3.5m. Examples of the Martello Technique is shown below:



*Figure 3: Martello Technique Piling*

The extent of piling is illustrated in the following diagram. It is noted that pile work will avoid the Buxton Memorial, which will require special attention throughout the construction process – refer to Section 4.7.1 for more information.



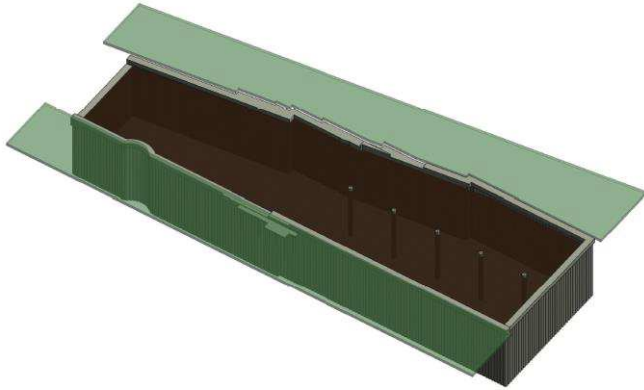
*Figure 4: Secant Pile Wall Construction*

An existing storm overflow sewer runs into the site, from Great Peter Street and discharges into the River Thames, bisecting the Burghers of Calais statue and the Buxton Memorial. The storm overflow sewer is approximately 4.1 metres below ground level. Special attention will be paid to maintaining the integrity of this storm overflow sewer through coordination with Thames Water.



### **Capping Beam Construction**

The capping beam will be constructed in sections as and when sections of secant wall become available. The capping beam construction phase is illustrated in the figure below:



*Figure 5: Capping Beam Construction*

### **Installation of Props**

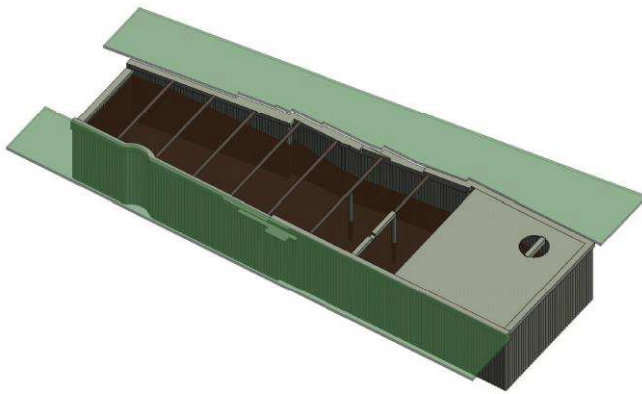
Prior to the bulk excavation of the basement, props will be installed perpendicular to the long side of the basement, between the capping beams. This is shown in the schematic below:



*Figure 6: Installation of Props*

### **Excavation of Basement**

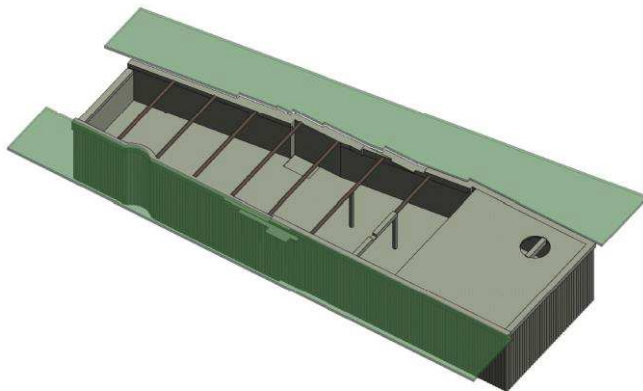
The next phase of works will be the bulk excavation of the basement spoil. The spoil removal method is still to be determined however, for assessment purposes, spoil removal via road-based transport is currently been assumed. The excavation of the basement spoil is illustrated below:



*Figure 7: Excavation of Basement*

### **Raft and Liner Wall Construction**

The final phase of basement construction includes the raft and liner wall construction. This will establish the B2 floor plate, as well as the UKHMLC's external walls. This phase is demonstrated in the figure below:



*Figure 8: Raft and Liner Wall Construction*

### 1.1.1.2 Superstructure

#### Internal Wall Construction

Commencement of the superstructure construction begins with the construction of the B2 internal walls, as shown in the figure below. These walls partition the various exhibition and administration spaces, as well as bathrooms and services.

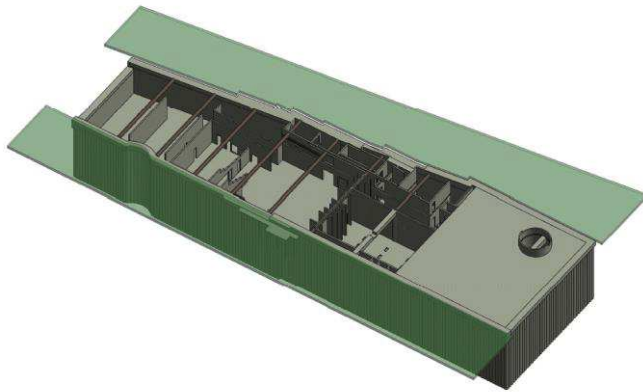


Figure 9: Internal Wall Construction

#### B1 Slab Formation

Following the formation of the administration areas on B2, the B1 slab is poured above to enclose the space, as well as forming the access to the Learning Centre on B1. This is illustrated in the figure below:

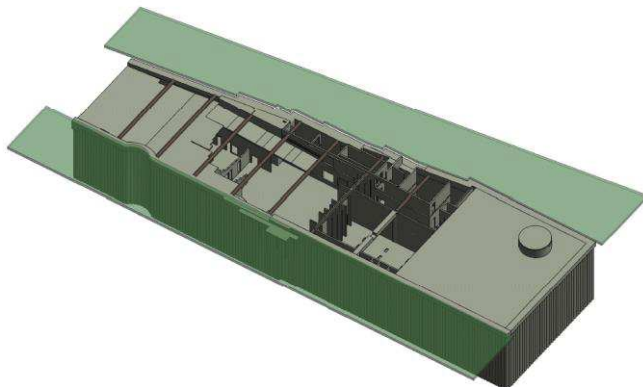
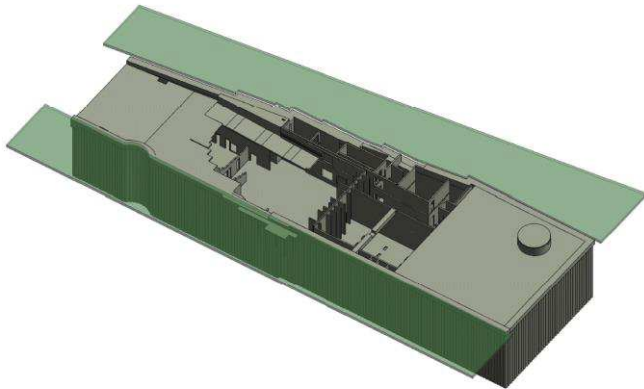


Figure 10: B1 Slab Formation



### **Removal of Props**

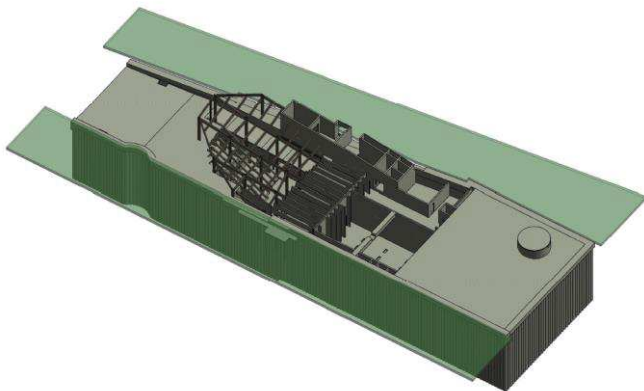
The next sequence involves removal of the props from the areas of basement which are now supported by the B1 floor slab. This is in the southern half of the UKHMLC, as shown in the illustration below:



*Figure 11: Removal of Props*

### **Lower Fin Wall Construction**

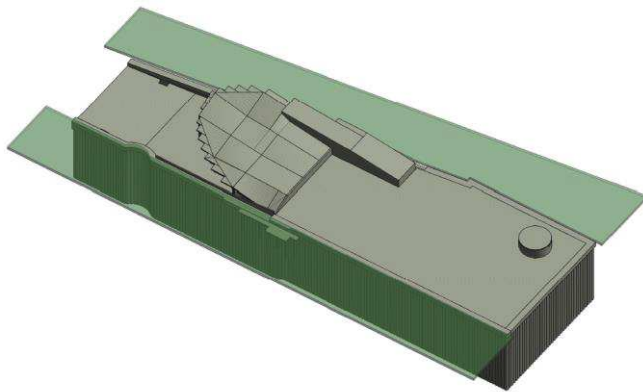
Construction of the lower fin walls will be the next construction sequence. This will also include the formation of the entrance staircases between the fins, as well as the Learning Centre floor slab, as shown in the illustration below:



*Figure 12: Fin Wall Construction*

### **Podium Slab Construction and Inclined Ramp Construction**

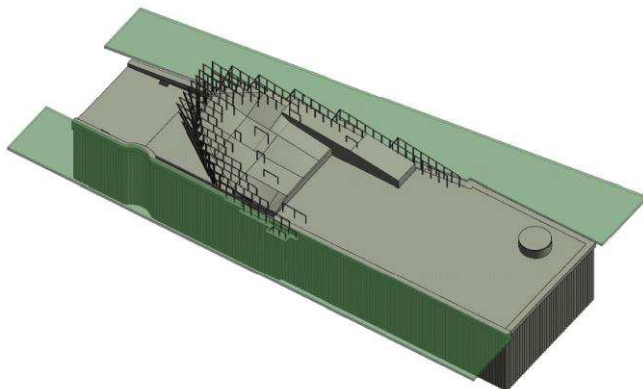
Enclosure of the main exhibition spaces will follow the lower fin wall construction, including formation of the podium slab and the inclined ramp between the upper fins, to semi-enclose the entrance to the UKHMLC. This will form the roof of the exhibition space and provide a foundation for the reinstatement of the corresponding section of the gardens, as shown in the figure below:



*Figure 13: Podium Slab Formation*

### **Upper Fin Wall and Courtyard Construction**

Construction of the upper fins and courtyard between the entrance pavilion and the memorial entrance will be the final component of the superstructure. Construction of the courtyard will see careful excavation, allowing for appropriate tree root investigation. The Contractor will allow for tree root observation in accordance with any WCC planning conditions. Any required root pruning will then be undertaken under observation by WCC, if required.



*Figure 14: Inclined Ramp & Courtyard Construction*

The upper fins will be able to be craned into place from a centrally located tower or mobile crane. The indicative locations for this are indicated in Section 4.1.2. The fins have been designed so as to avoid interference with the tree canopy and therefore, craneage cables will also avoid the tree canopy.

### **1.1.1.3 External Works and Fit Out**

#### **Internal Fit Out**

The internal fit out is scheduled to commence once the podium slab is formed, as this will effectively enclose the main exhibition space. The fit out will include all MEP works associated with the administration offices, exhibition spaces, Learning Centre, toilets and lifts.

#### **Entrance Pavilion**

Directly following completion of the superstructure, the Entrance Pavilion will be constructed at the southern end of the courtyard. Only surface excavations will be required for a ground slab, which will sit on micro-pile foundations, meaning no root pruning.

#### **Park Reinstatement above the UKHMLC**

On completion of the inclined ramp between the upper fins, the reinstatement of the corresponding areas of the gardens will commence. This will include establishment of new made-ground, pathways and landscaping.

#### **Testing and Commissioning**

The testing and commissioning phase will commence directly following completion of the main fit out works of the UKHMLC.

#### **Exhibition and Learning Centre Fit Out**

Fit out of the exhibition and Learning Centre, including exhibition establishment, will commence once testing and commissioning has been successfully completed.



## 4 Site Management

### 4.1 Arrangement

The site arrangement will be markedly different for each phase of works, to suit the different activities being undertaken. Both arrangements will seek to maximise the amount of the gardens that remain open for public use during the construction of the UKHMLC and minimise impact on the RPA's of the surrounding trees.

The exact site arrangements will be determined by the respective contractors and subject to approval of their detailed SEMP as well as corresponding Arboricultural Method Statement, prior to construction however, it is expected that they will closely replicate what is envisaged by the design team, as detailed in the following sections.

#### 4.1.1 Phase 1

Phase 1 incorporates the enabling works required to allow for unhindered construction of the UKHMLC. This phase will see hoardings erected around the Spicer Memorial and Horseferry Playground, at the southern end of the park, and ensure access to the bulk of the park and uninterrupted embankment access is retained. This phase will not require significant excavation so although there are areas of RPA that fall within the hoarding line, the majority of works will be surface based to limit the impact on the underlying roots. The proposed site arrangement is illustrated in the following figure:

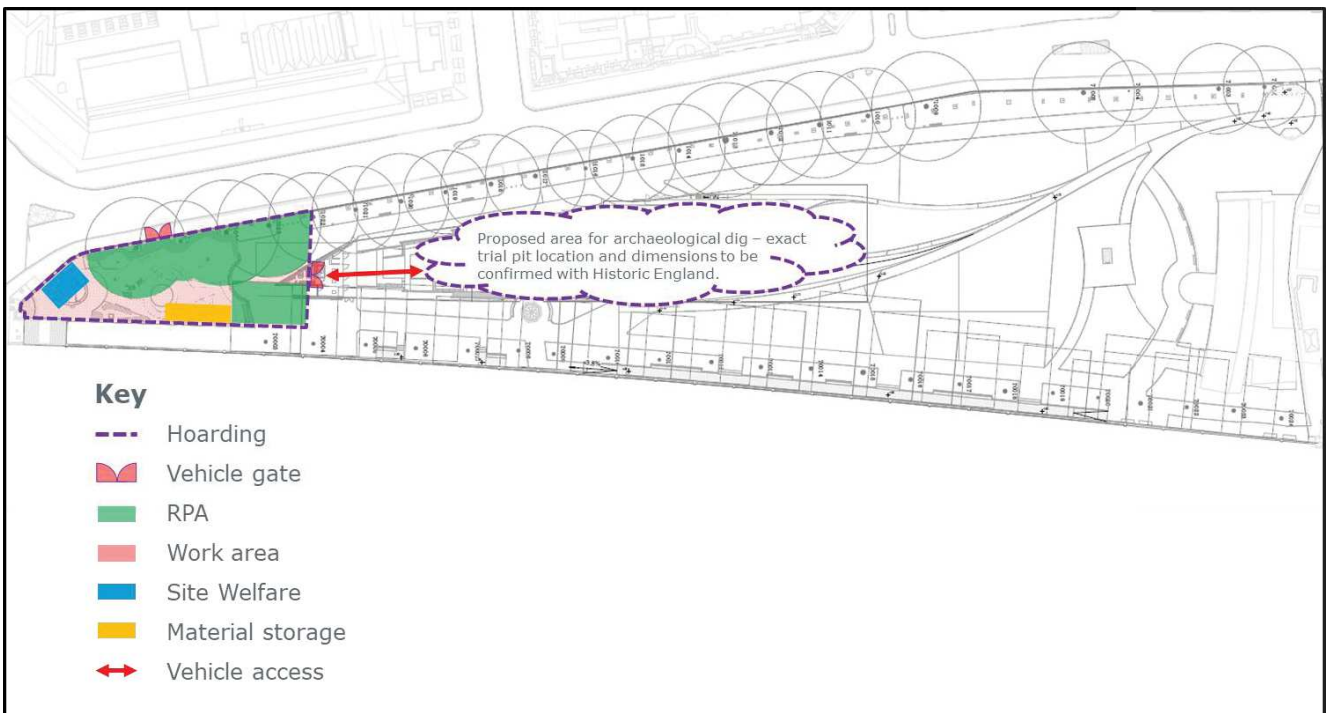


Figure 15: Indicative Phase 1 Site Arrangement

All material will be delivered to site in a just-in-time manner, allowing material to be unloaded and installed directly. This will reduce the requirement for storage on-site however, an area for unavoidable material storage has been identified in the above figure, avoiding RPA's.

This phase will also see the archaeological investigation take place within the gardens' open space. The exact extent of the investigation is to be confirmed through consultation with Historic England and The Royal Parks but it is expected that the investigation will occur only within the proposed footprint of the UKHMLC, thus minimising the restriction on access to the gardens. Site access will be via the vehicle entrance established as part of the Spicer Memorial and Horseferry Playground works, as indicated in the figure above. Vehicles will be required to traverse the gap between the Spicer Memorial and Horseferry Playground works hoarding and the archaeology investigation under appropriate supervision by the contractor. As shown in the figure above, this access route avoids RPA's however, appropriate ground protection will be installed by the Contractor, as discussed in Section 4.1.1.2.

Access along the existing embankment walkway will be retained, as indicatively shown in the figure below:

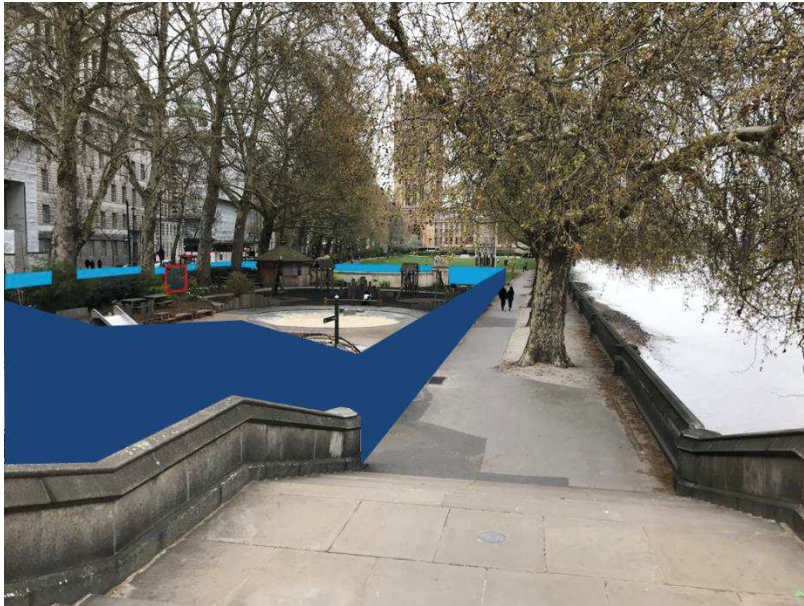


Figure 16: Indicative hoarding for Phase 1

#### 4.1.1.1 Site Welfare

Site welfare for this phase will consist of a small site office located at the southern tip of the gardens, adjacent to the existing public toilets so as to avoid the surrounding RPA's. Given that the proposed works will modify the area adjacent to the toilets, they will need to be closed to the public during this time. This will enable use by the personnel on-site, eliminating the need to provide additional ablution facilities for this phase and reducing the need to exert undue loading to the surrounding RPA's.

All power and services requirements will be provided overhead or above ground, to avoid excavation through RPA's.

#### 4.1.1.2 Vehicular & Pedestrian Access

Access to the Phase 1 work area will be via a temporary break in the fence on Millbank. This will be a maximum 5m wide access to allow for one-way vehicle entrance and exit. This

entrance will also serve vehicles accessing the area of archaeological investigation, within the separate hoarded area of the gardens, as indicated in Figure 15.

The distance between trees in this location is 11m, allowing for 3m clearance on each side of the vehicle access, as shown in the figure below.



Figure 17: Indicative Phase 1 Site Access

In areas where vehicles will be required to travel over the RPA's, appropriate protection will be utilised, such as Cellweb Tree Root Protection. This is a proprietary product specifically designed for tree root protection where vehicle access is required and will help to minimise the impact on the underlying tree roots. An indicative installation of Cellweb is shown below:



Figure 18: Indicative Cellweb Installation

Tree stems will also be protected by plywood boxes to prevent direct damage, and crown lifting specifications are provided in the accompanying Arboricultural Impact Assessment.

#### 4.1.1.3 Hoarding Arrangement



All hoardings for this phase of work will be surface mounted to eliminate the need to excavate into RPA's. Given the relatively short duration of this phase, light-weight mesh hoarding will be used, like shown in the image below:

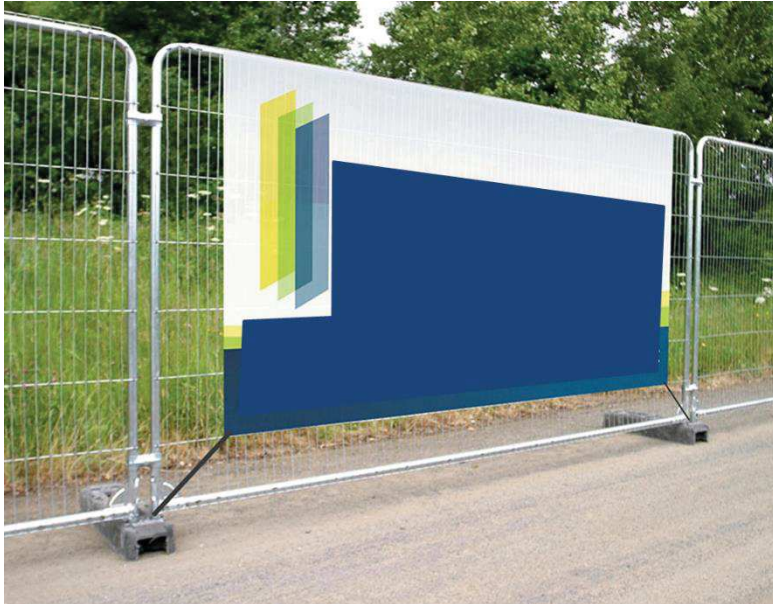


Figure 19: Example hoarding for Phase 1

#### 4.1.2 Phase 2

The site arrangement required for Phase 2 will seek to minimise the area of park required to undertake the construction of the UKHMLC. This will see the hoarding line, forming tree protective barrier and construction exclusion zone, established along the western boundary of the UKHMLC preventing any further access into the corresponding RPA's. The eastern hoarding will be off-set and within the notional RPA of this tree line, allowing for the embankment path to remain open for the duration of the Phase 2 construction. These areas of 'exposed' eastern RPA's will also be required for construction access, however they will be appropriately protected as discussed in subsequent sections.

The Phase 2 site arrangement will include just one vehicle and pedestrian access point, directly opposite Great Peter Street. The access will be manned at all times during working hours and gated out of hours.

It is proposed to locate site welfare facilities in the northwest corner of the hoarded construction area, with vehicle manoeuvring space to the southeast of this. This manoeuvring area will provide adequate space for delivery vehicles to turnaround within the site, eliminating the need for vehicles to reverse out of site. This area of the construction site is outside the RPA's however, appropriate ground protection will be provided to reduce adverse impact to roots that may extend beyond the RPA's, as well as limit general rutting and damage to the grounds.

The indicative site layout is illustrated in the figure below:

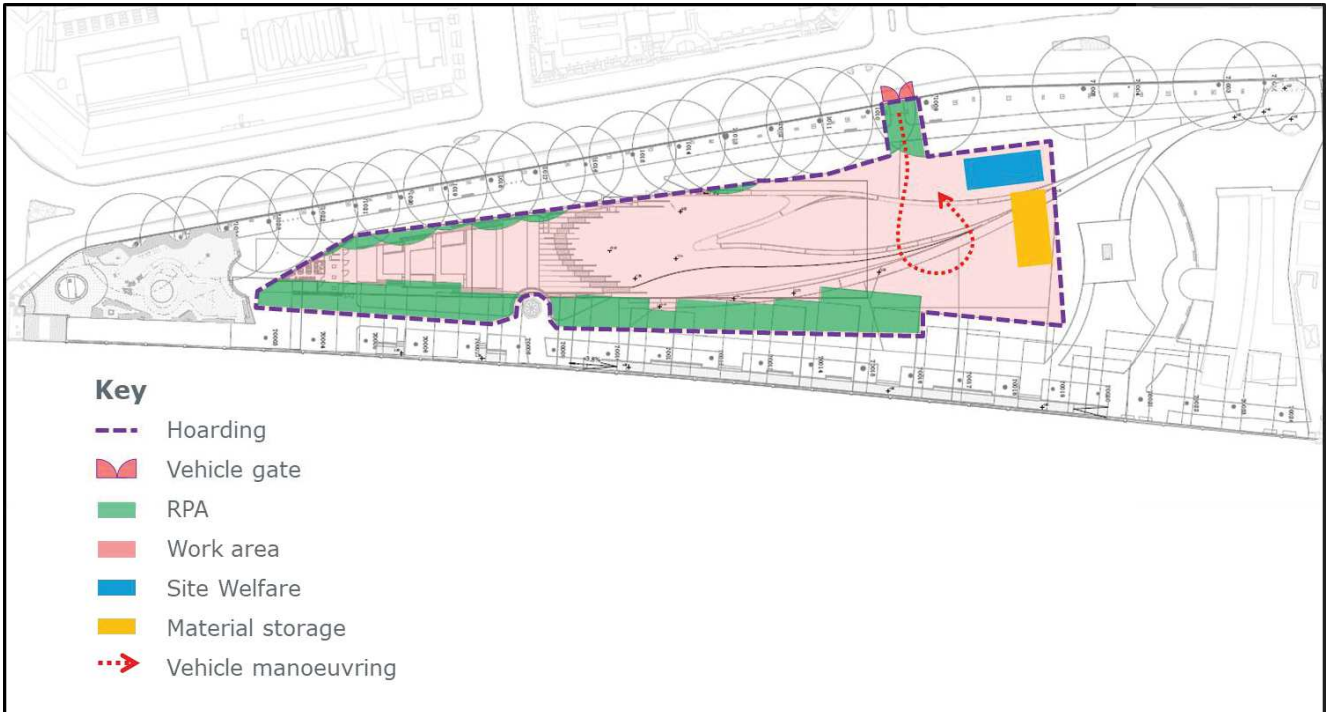


Figure 20: Indicative Phase 2 Site Arrangement

All material will be delivered to site in a just-in-time manner, allowing material to be unloaded and installed directly. This will reduce the requirement for storage on-site however, an area for unavoidable material storage has been identified in the above figure, avoiding RPA's.

#### 4.1.2.1 Site Welfare

Site welfare for this phase will consist of a site office and ablutions located in the northern section of the gardens, outside the notional RPA of all London Plane trees. All ablutions, power and services requirements will be either self-contained or provided overhead or above ground, to avoid the need to excavate through RPA's. These site compounds will be excluded from the root protection areas via hoarding, and bunds will be established to prevent any run-off and soil contamination.

#### 4.1.2.2 Vehicular & Pedestrian Access

Access to the Phase 2 work area will be via a single access point located directly opposite Great Peter Street, in the location of an existing pedestrian access point. This will be temporarily widened to a maximum of 6m, to allow for two-way vehicle entrance and exit, as well as secure pedestrian entry. Hard surfacing will be retained and reinforced to minimise the vehicle loading on the underlying tree roots. Any necessary tree pruning in this area is specified in the Arboriculture Impact Assessment. The distance between trees in this location is 14m, allowing for 4m clearance on each side of the access, as shown in the figure below. The hoarding will come to the footpath edge and will therefore provide protection for the adjacent tree stems.



Figure 21: Indicative Phase 2 Site Access

Additional pedestrian emergency escape access points will be located around the hoarding for emergency evacuation purposes. These will be positioned as per the contractor's emergency escape requirements and will be detailed in their SEMP.

In areas where vehicles will be required to travel over the RPA's, appropriate protection will be utilised, such as Cellweb Tree Root Protection. This is a proprietary product specifically designed for tree root protection where vehicle access is required and will help to minimise the impact on the underlying tree roots. An indicative installation of Cellweb is shown below:



Figure 22: Indicative Cellweb Installation

#### 4.1.2.3 Hoarding Arrangement

All hoardings for this phase of work will be surface mounted to eliminate the need to excavate into RPA's. These will be more robust than those used in Phase 1 and will be secured by weights along the internal face, as shown in the image below. For the most part, the hoarding will be located on existing hard surfacing but for when the hoarding it located on natural



ground, the load of the weighted system will be distributed using products such as Cellweb or Ecogrid. This will be installed as per the manufacturer's guidance to ensure no adverse loading is applied to the underlying roots.



Figure 23: Example hoarding for Phase 2

## 4.2 Site Logistics

During the construction of the UKHMLC, the efficient coordination of site logistics will be crucial to ensuring minimal adverse impact to the surrounding areas. Key to this will be the timely arrivals of deliveries to the site, as and when required. The responsibility for this will be taken on by the appointed contractor/s, who will strive to coordinate deliveries to site in a way that reduces number and frequency of deliveries. Central to this will be undertaking adequate pre-planning of material availability with the relevant supply chains and coordinating deliveries to ensure that no vehicle queuing occurs external to the site. For times when it is essential for materials to be stored on-site, areas outside the RPA's have been identified so that any undue loading to the underlying roots is avoided.

All aspects of the proposed logistics for the site will be subject to detailed assessment, to be submitted in the Contractor's SEMP or in a stand-alone Construction Traffic Management Plan prepared by the appointed Contractor/s. This will look to demonstrate how construction of the UKHMLC will comply with the CoCP, specifically Chapter 5: Traffic and Transport. This will need to be submitted and agreed with Westminster City Council prior to works commencing.

As illustrated in the site arrangement diagrams, it is anticipated that there will be one vehicle access point for each phase of works. Restricting vehicle access to single locations will reduce the effect on the RPA's.

The Contractor/s will need to make themselves aware of all other construction work in the vicinity of the site, to ensure access routes and vehicle movements can be coordinated and therefore, minimise the cumulative traffic impact of the adjacent road network.

Given the anticipated quantity of spoil to be removed from the site and the proximity to the River Thames, the option of spoil removal via river transport is being considered. This would



help to minimise the quantity of vehicular trips to and from the site during the excavation stage of construction, however, this is pending further investigating and is subject to a detailed feasibility investigation. Therefore, for environmental assessment purposes, spoil removal via road-based transport has been assumed.

#### **4.2.1 Workforce Access**

It will mandatory for all personnel to travel to and from site via public transport as there will be no car parking provided on-site. This will reduce traffic impact on the surrounding road network as well as eliminating the need for non-construction related vehicles to be parked on site and applying undue pressure to RPA's.

The main public transport access node in the vicinity of the site is the Westminster Underground Station. This is a six minute walk from the site and provides access from the Circle, District and Jubilee underground lines.

#### **4.2.2 Road Transport**

Road transport will be utilized for all servicing and delivery requirements of the site. All road-based construction transport will be required to comply with relevant policy, to be verified within a Construction Traffic Management Plan. This will be prepared by the appointed Contractor/s and agreed with Westminster City Council.

##### *4.2.2.1 Vehicular Access Routes*

The Contractor/s will arrange for vehicle accessing the site to comply with access routes agreed within the Construction Traffic Management Plan, in accordance with Section 5.5 of the CoCP. Given that the majority of vehicles accessing the site will likely be heavy goods vehicles, it is anticipated that they will be confined to the strategic road network and be required to access the site from the south, avoiding the Palace of Westminster and Parliament Square.

The anticipated vehicular access routes are illustrated in the following diagram:

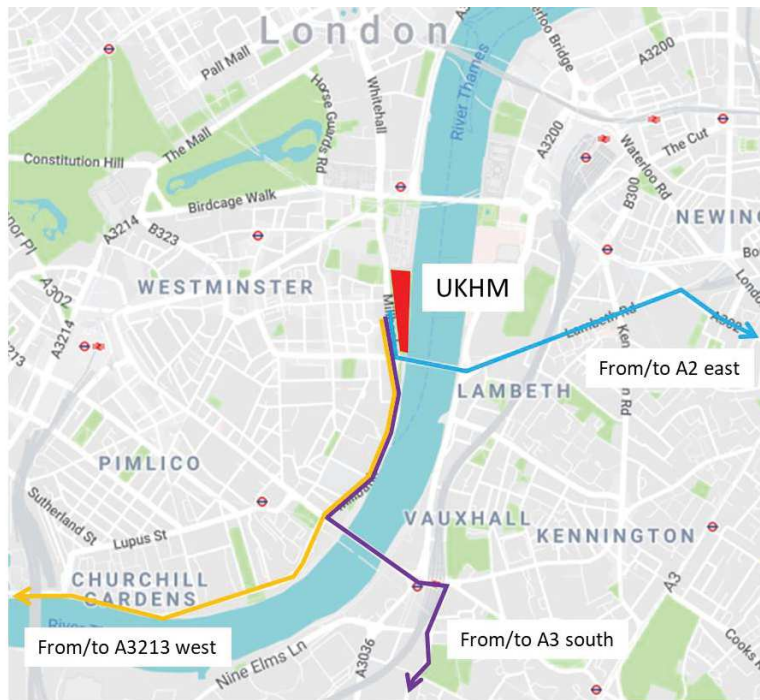


Figure 24: Anticipated Vehicle Access Routes

#### 4.2.2.2 Temporary Traffic Management

Given that all construction works will be contained within the site boundary, it is anticipated that there will be minimal requirement for temporary traffic management measures outside the site.

The extent of any necessary temporary traffic management will be at the discretion of the selected Contractor/s and will be captured by the Construction Traffic Management Plan.

#### 4.2.2.3 Expected Traffic Generation & Impact

The appointed Contractor/s will report on the anticipated traffic generation and impact of the construction of the UKHMLC within their Construction Traffic Management Plan.

It is expected that the most significant traffic impact will occur during the excavation period, which is anticipated to last for up to three months towards the end of 2020. The current methodology of spoil removal is by lorry however, there is potential for this to occur via river, pending further investigation. Spoil removal by lorry will be appropriately managed by the Contractor to ensure minimal impact on the surrounding road network. Lorry arrivals and departures from site will be coordinated by the Contractor to ensure evenly-spaced vehicle movements, resulting in lower risk of vehicle bunching and queuing external to the site.

Other construction phases that will see increased traffic generation will be those that require large-scale concrete pours, such as raft and floor slab construction. These phases typically require a steady supply of concrete via lorries however, the timeframes for such construction sequences are relatively short, ensuring a lower level of impact to the surrounding area. These phases will be assessed and reported within the Contractor's Traffic Management Plan.

At all other times, deliveries and servicing via road-based transport will be highly coordinated by the Contractor/s to minimise any adverse traffic impact on the areas adjacent to the site. This will likely include restriction of vehicle access to off-peak periods and designated routes to and from the site.

#### **4.2.3 River Transport**

As mentioned, the potential to utilize river transport to service the site is significant. Bulk excavation typically requires spoil removal via lorry however, this can be disruptive to the adjacent road network and surrounding residents and businesses. The proximity of the River Thames and the unconstrained embankment opens up the opportunity to remove spoil from the basement excavation via river transport. The potential for this is pending further investigating and is subject to a detailed feasibility investigation.

For assessment purposes, all servicing of the site is assumed to occur via road-based transport.

#### **4.3 Working Hours**

The permitted working hours will be defined by the planning permission however, it is anticipated that core working hours will be between 8:00am and 6:00pm on weekdays and between 8:00am and 1:00pm on Saturdays, in accordance with Section 6.6 of the CoCP.

To ensure any construction related impacts on the surrounding areas are mitigated appropriately, we propose that the selected contractor obtain a Section 61 agreement, in accordance with the Control of Pollution Act 1974.

#### **4.4 Public Information & Security**

All information pertinent to the public will be displayed by the Contractor/s at appropriate locations on the site hoarding, along with contact details for relevant site representatives. This will include an out-of-hours contact so that any unforeseen issues can be suitably dealt with.

Effective neighbourhood liaison will be crucial to the success of this project and through the requirement of signing up to the Considerate Contractors Scheme, it is expected that the Contractor/s will undertake industry best-practice initiatives to keep local residents informed. This is expected to include newsletters, up-to-date information on site hoardings and personnel dedicated to fielding local residents' or members of the public's enquiries.

Security of the site will be maintained by the Contractor/s, who will ensure the site is appropriately hoarded and that only authorised persons and vehicles are allowed access to the site at all times.

The physical perimeter of the site will be walled with appropriate hoardings, with a design to be agreed with the Local Authority and the Metropolitan Police. Along with gates on the access points, the hoarding will ensure a locked secure site area when the site is closed and a safety barrier to prevent unauthorised access during working hours. Night-time security will be aided by appropriate flood-lighting within the site and on hoardings, as agreed with the Local Authority, plus monitored CCTV.

All vehicles accessing site will be escorted on and off site and only allowed to enter at a pre-arranged time slot. All deliveries and vehicles will be cross-referenced with the booking system to ensure only authorized vehicles are permitted entry.

Storage of materials on site will only occur in areas of tree root and ground protection and will be highly coordinated to ensure storage of only the minimum amount of materials required for the immediate work. This will help to maintain a minimal construction site footprint and a deterrent to any unauthorized access. Vetting requirements for personnel working on the site will be established through coordination with the Metropolitan Police.

#### 4.5 Emergency Procedures

Emergency contact information will be prominently displayed within the information boards on the site hoardings, including methods of alerting Westminster City Council and relevant authorities, as well as contact details for key Contractor personnel.

The Contractor/s will be also be responsible for developing appropriate emergency procedures to account the following:

- **Fire**

A Fire Safety Plan will be necessary to ensure all regulatory requirements, such as those of the London Fire and Emergency Planning Authority (LFEPA), are adhered to. The plan should address methods to minimise the risk of fire and ensure adequate means of evacuation are in place.

- **Pollution**

Suitable action plans will be required to manage and direct an immediate response to unforeseen pollution and hazardous material spills. Special attention will need to be paid to the risk of contamination to the nearby River Thames.

#### 4.6 Cranage & Plant

The use of cranes and plant on site will be at the discretion of the appointed contractor/s and will be subject to agreement with Westminster City Council. It is likely that the cranage strategy for the Phase 2 works will consist of either one tower crane or multiple mobile cranes. Both options will make use of the vehicle manoeuvring space for the designated offloading area. All crane activities will occur either within the building footprint or from appropriate ground protection areas and locked boom swing will be supervised so as to not conflict with the tree canopy.

Other large plant will include piling rigs, excavators for removing spoil, concrete lorries, concrete pumps, telehandlers and generators for emergency power supply. These will be required to operate only on areas of appropriate tree root and ground protection. Indicative models and their duration on-site is provided in the table below:

Plant Type Description	Model	Duration On-site
Piling rig	MP4000 Martello Piling Rig Bauer MBG12	3 months during piling works
360° Excavator	20T standard excavator: Hitachi ZX225US-6 40T long-reach excavator: CAT 340F	3 months during excavation period



Concrete lorry	DAF 8x4	Intermittent use on site throughout Phase 2
Concrete pump	Schwing WP1250	Intermittent use on site throughout Phase 2
Crane	Mobile crane: Demag AC25 Luffing tower crane: Jost JL316.16	Main use throughout superstructure construction (8 months)
Telehandler	MERLO TF33-7-115 2018	Throughout Phase 2
Generator	HRYW-45 T5	Emergency use throughout Phase 2

Table 1: Indicative Plant Types and Durations On-site

## 4.7 Existing Installations

### 4.7.1 Monuments

The gardens are designated a zone of Monument Saturation, housing the Buxton Memorial (Grade II\*, 1865), the Emmeline Pankhurst Memorial (Grade II, 1930), the Burghers of Calais (Grade I, 1915), and the Spicer Memorial.

The Emmeline Pankhurst Memorial and the Burghers of Calais are both located in the northern end of the gardens and therefore will not be directly impacted by the construction of the UKHMLC.

The Buxton Memorial is located adjacent to the proposed UKHMLC structure and will therefore require special attention to preserve its appearance and structural integrity. The responsibility for this will form a condition of contract with the appointed contractor, ensuring full responsibility for the Buxton Memorial is accounted for. It is expected that the Contractor will be required to carry out a condition survey, documentation, protection and regular monitoring throughout the construction process, in accordance with all planning permission requirements.

The Spicer Memorial, constructed in the 1920s to commemorate Henry Spicer's gifting of the original playground, is currently located at the southern end of the gardens and north of the Horseferry Playground. It will require relocation to allow for construction of the UKHMLC. This was most recently relocated in 2015 as part of playground refurbishment works.

### 4.7.2 Thames Water Storm Overflow Sewer

There is an existing storm overflow sewer that runs through the site, from Great Peter Street to the River Thames, bisecting the Burghers of Calais statue and the Buxton Memorial. The storm overflow sewer is approximately 4.1 metres below ground level and at least 3m away from the proposed secant pile wall along the northern edge of the UKHMLC basement. Special attention will be paid to maintaining the integrity of this storm overflow sewer through coordination with Thames Water.

## 4.8 Archaeology

In addition to the Archaeological Investigation undertaken in Phase 1, a watching brief by an independent appointed Archaeologist will be in place during Phase 2, limited to the parts of the development involving significant groundwork's. Provision will be made for recording the

excavation of any items of significance which may be found. These excavations and groundwork's will be carried out in conjunction with the independently appointed Archaeologist in order to avoid damage or disturbance to any archaeological sites identified.

#### **4.9 Considerate Constructors Scheme & Good Housekeeping**

The selected contractor/s will be required to be registered under the Considerate Constructors Scheme, which ensures construction works are undertaken with best-practice methods to ensure the impact of the project's construction is minimised. In particular, implementation of this scheme will ensure the construction of the project is undertaken in a way that ensures a high level of social and environmental responsibility, as well as maintaining appropriate 'housekeeping' measures at all times.

The Contractor will be expected to ensure the following:

- Acceptable PPE is worn by site personnel at all times.
- Site personnel leave the site with clean boots and work gear, to ensure dirt and debris is not traipsed outside the site boundary.
- The wheels of vehicles leaving the site are free of dirt and debris and have appropriate wheel-wash facilities
- All site rubbish is frequently removed, ensuring a clean and tidy site at all times.
- The appearance of the hoarding is maintained to a high level, including timely removal of graffiti and flyposting.
- Welfare facilities, including toilets and breakrooms, are kept clean and tidy.
- Reversing of vehicles out of the site is prohibited.
- All noisy works are kept to a minimum and comply with the Section 61 agreement.

## **5 Environmental Management**

### **5.1 Managing Environmental Impact**

The selected Contractor/s will be required to appropriately manage the construction impacts of the UKHMLC. How they propose to do this will be documented in the necessary Site Environmental Management Plan (SEMP), which will outline how they plan to comply with the requirements of the CoCP.

Once the contracts for Phase 1 and 2 have been agreed with the respective Contractor/s, they will produce and submit their SEMP to the Westminster City Council for approval. The SEMP will demonstrate how construction of the UKHMLC will comply with the relevant aspects of the CoCP, specifically addressing the management, monitoring, auditing and training required for compliance. The requirements of the CoCP also apply to all appointed sub-contractors and therefore, the SEMP will outline the main Contractor/s proposals to manage and monitor performance of all sub-contractors, in accordance with the CoCP.

It is expected that the SEMP will detail how each aspect will be administered day-to-day, including details of the relevant management personnel and structure, audit processes and routine inspection of work site. It should also outline of how stakeholder management and liaison with the Westminster City Council, neighbours and the surrounding community will be undertaken.

The following sections outline the anticipated considerations relevant to the site and how specific aspects of environmental impact will be managed.

### **5.2 Noise and Vibration**

The appointed Contractor/s will be responsible for administering the levels of noise and vibration created by construction works, to ensure compliance with planning permission, Section 6 of the CoCP and applicable statutory policies. The Westminster City Plan Strategic Policy S32 and the Unitary Development Plan Policy ENV6 present additional specific requirements that the contractor must adhere to throughout the construction period.

The Contractor/s will be required to utilise low-impact construction methods where possible, to minimise any adverse impact to the surrounding areas and particularly the impact to neighbouring properties. Typically disruptive construction activities, such as piling and compaction, will need to be carefully considered and notified to neighbours.

In addition to this, the contractor will be required to enter into a Section 61 agreement, in accordance with the Control of Pollution Act 1974. This will ensure appropriate working hours are established and thus, minimise any adverse impact on neighbouring properties.

### **5.3 Dust & Air Pollution**

The appointed Contractor/s will be responsible for managing all dust and air polluting activities during the construction works, to ensure compliance with planning permission, Section 7 of the CoCP and applicable statutory policies. The Westminster City Plan Strategic Policies S31, Unitary Development Plan Policy ENV5 and London Plan Policy 7.14 present additional specific requirements that the contractor must adhere to throughout the construction period.

## **5.4 Water Pollution & Flood Risk**

Given the site's proximity to the River Thames, effective management of flood and pollution risk will be imperative, including potentially harmful liquid spillages. Mitigation of these risks will be the responsibility of the Contractor/s, who will be required to comply with planning permission, Section 9 of the CoCP and all applicable statutory policies.

## **5.5 Ecology & Arboriculture**

The ecology of the site, including wildlife and tree protection, will be the responsibility of the appointed project Ecologist and Arborist. How they intend to manage the impact of construction on the ecology and trees of the site in accordance with Section 10 of the CoCP will be detailed in their respective SEMP's and Arboricultural Method Statement.

### **5.5.1 Tree Protection**

The site is bound by established trees along both the western and eastern edge. The trees are an important feature of the gardens and the Contractor/s must seek to take every precaution to protect their welfare during construction of the UKHMLC, in accordance with BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations.

Reference should be made to the Arboriculture Method Statement for the specific recommendations proposed for the project to mitigate damage to all trees and their roots, both within the construction area and along any access routes. The Contractor/s will be required to implement all recommendations from this document, such as:

- All vehicle access points and haul roads are to be scaled according to the size of vehicles using them. All surfaces where vehicles are expected to track will need to be load bearing, to prevent compaction of the underlying soil.
- Any designated parking and laydown areas are to be sized for the anticipated number of vehicles which may be parked and unloading on the site at any one time. These areas must also be formed of a load bearing surface.
- The positioning of site welfare cabins shall take tree root protection areas into consideration. Should they be located within tree root protection zones, they will need to be underpinned by load bearing footings, such as the Jack Pad product, surrounded by vertical barriers to prevent further access into the root protection area, and walkways on loadbearing surfaces and clearly marked.
- To minimize the amount of tree root protection zone within the site, the Contractor/s shall endeavour to locate the hoarding line as close to the footprint of the UKHMLC as possible. All tree root protection zones outside the site hoarding shall be protected by a load bearing surface. The final location of the hoarding will be proposed by the Contractor/s in their respective SEMP's, for Westminster City Councils consideration.