

Thames Tideway Tunnel  
Thames Water Utilities Limited



# Application for Development Consent

Application Reference Number: WWO10001

## Design and Access Statement

Doc Ref: **7.04**

### Part 2

#### Victoria Embankment Foreshore

APFP Regulations 2009: Regulation **5(2)(g)**

Hard copy available in  
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January 2013

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Creating a cleaner, healthier River Thames

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# Section 19

## Victoria Embankment Foreshore

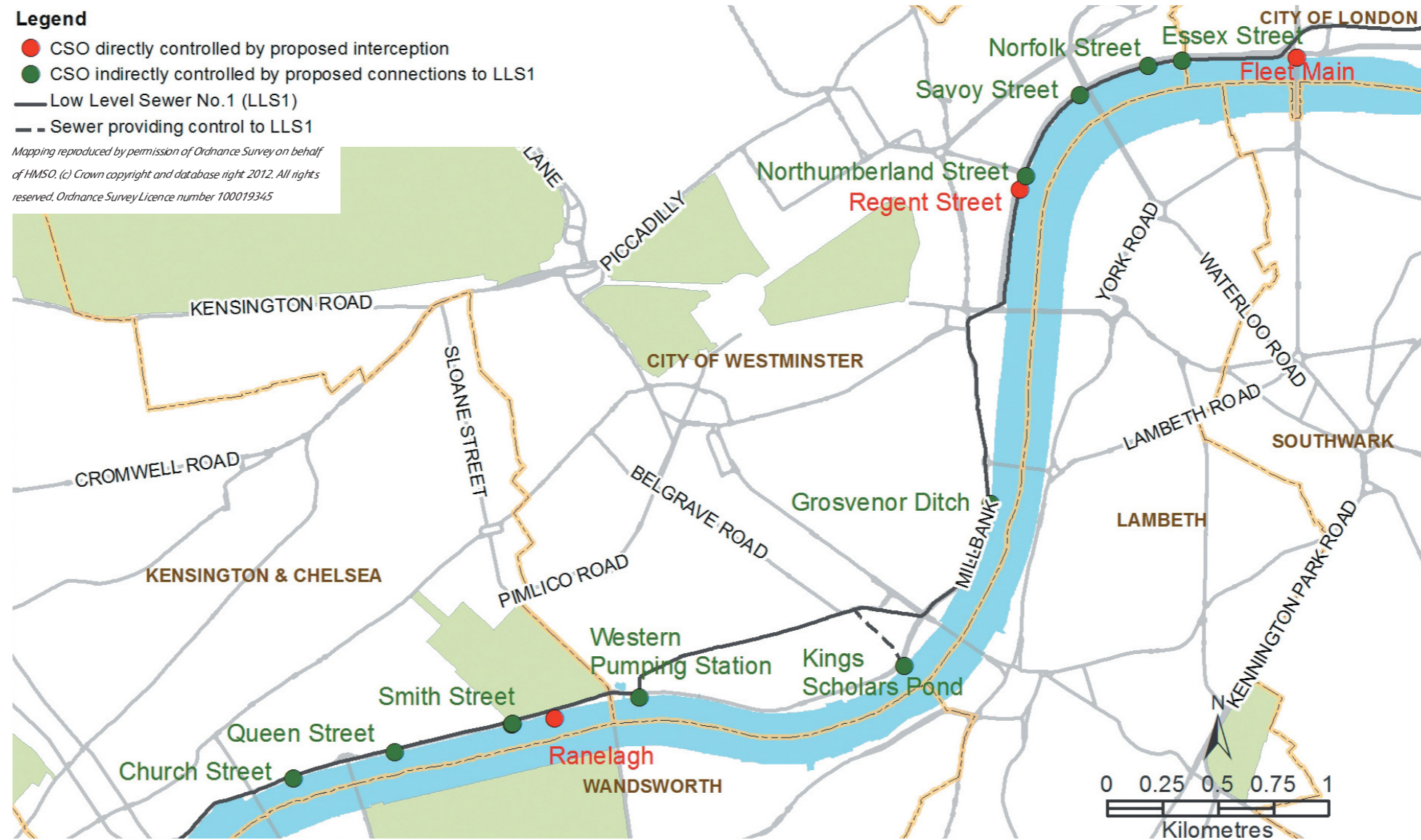


Figure 19.1: CSOs indirectly controlled on the northern embankment (refer to paragraph 19.1.2)

## 19.1 Introduction

19.1.1 A worksite is required to connect the northern Low Level Sewer No. 1 to the main tunnel in order to control the Regent Street CSO. The proposed development site is known as Victoria Embankment Foreshore, which is located in the City of Westminster.

19.1.2 Relieving the flow from the northern Low Level Sewer No. 1 at this site, as well as at Chelsea Embankment Foreshore and Blackfriars Bridge Foreshore, would control the flows from ten other CSOs along the northern bank of the river. This would avoid the need for additional sites at or near the ten CSOs from Church Street in Chelsea to Essex Street in Westminster, as shown on Figure 19.1.

19.1.3 We have agreed with the City of Westminster that some elements of the detailed design proposals would be drawn up at a later stage. The detailed designs would be submitted to the local authority for approval in the form of a DCO requirement. Therefore, the majority of the images and plans in this section are for illustrative purposes only. The proposed landscape design and the scale of the above-ground structures, however, are indicative.



Figure 19.2: Aerial photograph of the existing Victoria Embankment Foreshore site with LLAU indicated

### 19.2 Existing site context

19.2.1 The site itself comprises an area of the foreshore of the River Thames and a section of the pavement and carriageway of Victoria Embankment. A permanently moored vessel, the Tattershall Castle (a floating bar and restaurant), and two service moorings lie within the site.

19.2.2 The site falls within the Whitehall Conservation Area, which comprises a number of listed buildings, other buildings of international importance, and various statues and monuments in a high quality built environment. Victoria Embankment is characterised by an avenue of mature London Plane trees, which receive a level of protection as part of the conservation area. The site also falls within the Lundenwic and Thorney Island Area of Archaeological Priority.

19.2.3 The section of river wall within the site (the 'listed wall') features Grade II listed 'sphinx' seats, catenary lamp standards and 'sturgeon' lamp standards. These features form part of the Victoria Embankment, which was constructed beside the River Thames between 1864 and 1870 when Sir Joseph Bazalgette's sewerage system was installed.

19.2.4 The River Thames is designated as the River Thames and Tidal Tributaries Site of Importance for Nature Conservation (Metropolitan Importance). The site is considered a functional flood plain (Flood Zone 3b) and falls within the Blue Ribbon Network.

19.2.5 The site also lies within a designated linear view identified in the Mayor's London View Management Framework (Linear View 9A: King Henry VIII's Mound, Richmond to St Paul's Cathedral) and in river prospect views from the southern upstream Golden Jubilee footbridge (River Prospect 17A.2: Golden Jubilee/Hungerford Footbridges: upstream) and Jubilee Gardens (River Prospect 21B: Jubilee Gardens and Thames side in front of County Hall). Local views south along Victoria Embankment and from the central roundel in Victoria Embankment Gardens are designated in the City of Westminster's Whitehall Conservation Area Supplementary Planning Guidance.

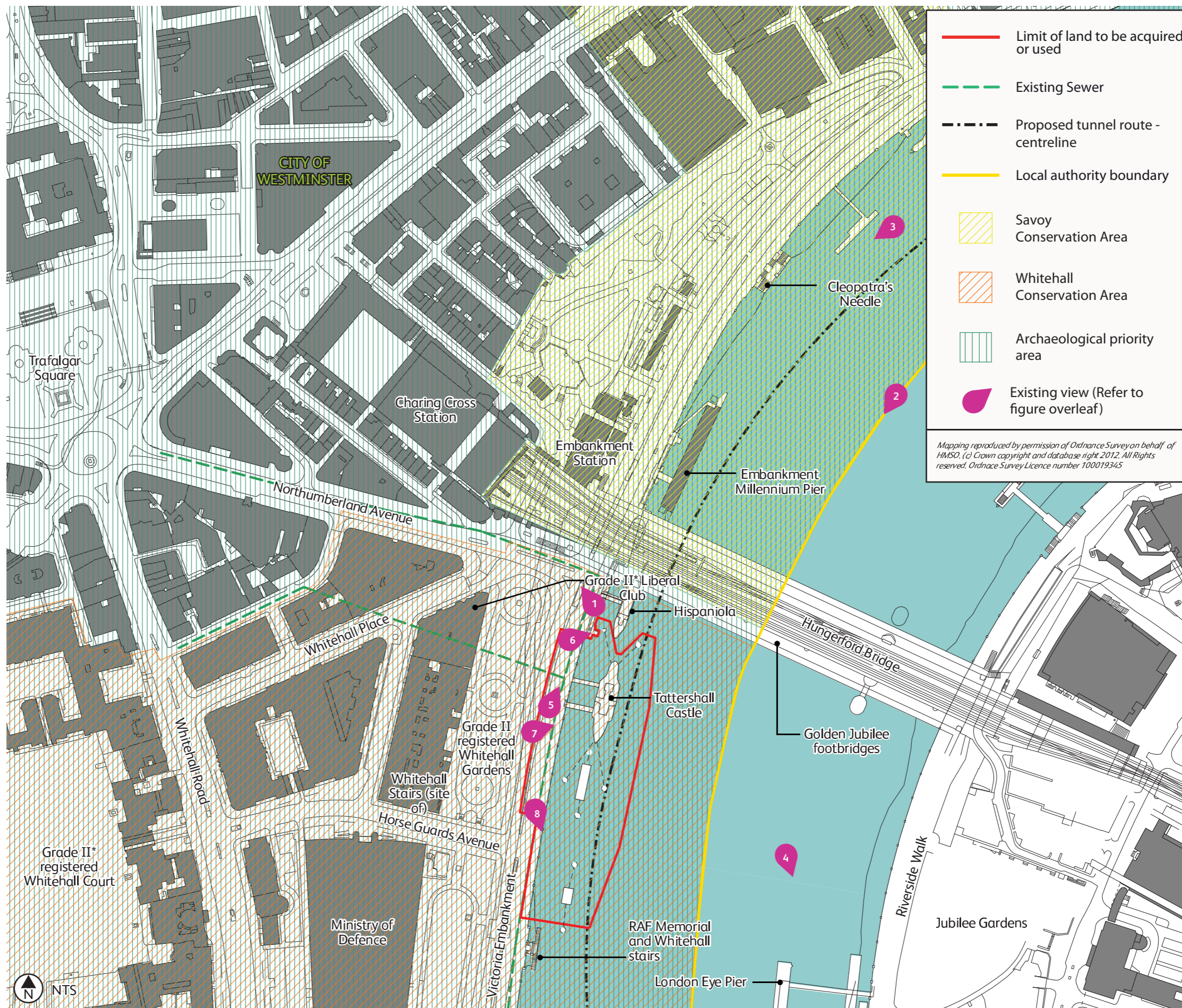


Figure 19.3: Existing site plan



Figure 19.4: Detail of Caternary lamp standard



Figure 19.5: The tidal Thames from Waterloo Bridge



Figure 19.6: Cleopatra's Needle



Figure 19.7: The South Bank from the site



Figure 19.8: Victoria Embankment looking north towards Tattershall Castle



Figure 19.9: Hispaniola and steamer pier



Figure 19.10: Tattershall Castle



Figure 19.11: Detail of sturgeon lamp standard

19.2.6 The site is bounded to the north, east and south by the River Thames and to the west by Victoria Embankment, the pavement of which forms the Thames Path.

19.2.7 The restaurant ship Hispaniola is moored adjacent to the southern Golden Jubilee footbridge and the Hungerford Rail Bridge to the north. The northern Golden Jubilee footbridge, Embankment Millennium Pier and the Embankment London Underground Station lie beyond. The Golden Jubilee footbridges are awarded landmark quality status in the Whitehall Conservation Area Supplementary Planning Guidance. A Grade II listed memorial to Sir Joseph Bazalgette is located approximately 25m to the north of the site.

19.2.8 To the east, on the opposite side of the River Thames (in the London Borough of Lambeth) lie Riverside Walk, Jubilee Gardens and the London Eye. To the southeast is the Grade II\* listed County Hall, which contains a hotel, the London Aquarium and other cultural uses. The site is visible from the South Bank with moored vessels in view and a backdrop of mature London Planes and the Whitehall Court buildings.

19.2.9 The Palace of Westminster and Westminster Abbey including St Margaret's Church World Heritage Site, Whitehall Stairs, the Grade II listed Royal Air Force memorial and a service mooring lie to the south of the site.

19.2.10 Beyond Victoria Embankment to the west lies Whitehall Gardens, a Grade II registered park and garden, which is part of Victoria Embankment Gardens. The closest building to the site is the Grade II\* listed Whitehall Court to the west of Whitehall Gardens, which contains residential properties, the National Liberal Club and the Royal Horse Guards Hotel. Charing Cross Station lies to the northwest of the site.

**Existing site access and movement**

19.2.11 There is no existing vehicle or pedestrian access to the proposed foreshore site.

**Highways**

19.2.12 Victoria Embankment (A3211) is a wide dual carriageway subject to a 30mph speed limit, which forms part of the Transport for London Road Network.

19.2.13 Northumberland Avenue (A400) to the north leads to Trafalgar Square, and Horse Guards Avenue to the south. Whitehall Place to the west leads to Whitehall (A3212).

**Car parking**

19.2.14 There are pay and display parking bays along Victoria Embankment (westbound) between Savoy Pier and Embankment Underground Station. There are also pay by phone parking bays along Northumberland Avenue.

19.2.15 There are residents' car parking bays on Whitehall Court and Whitehall Place and Blue Badge parking bays along Whitehall Place.

19.2.16 Motorcycle parking is available along Victoria Embankment and Northumberland Avenue (pay by phone).

19.2.17 There are a number of coach parking bays along Victoria Embankment: two on the eastbound carriageway; seven on the westbound carriageway south of the junction with Northumberland Avenue; and eight on the westbound carriageway south of Horse Guards Avenue.

**Public transport**

19.2.18 There are five bus stops within 640m of the site, which serve more than 200 buses an hour during the day and 40 to 50 buses an hour at night.

19.2.19 The closest National Rail station is Charing Cross, approximately 420m to the northwest, which provides services to Hastings, Dartford, Ramsgate, Dover Priory and Ashford operated by Southeastern trains.

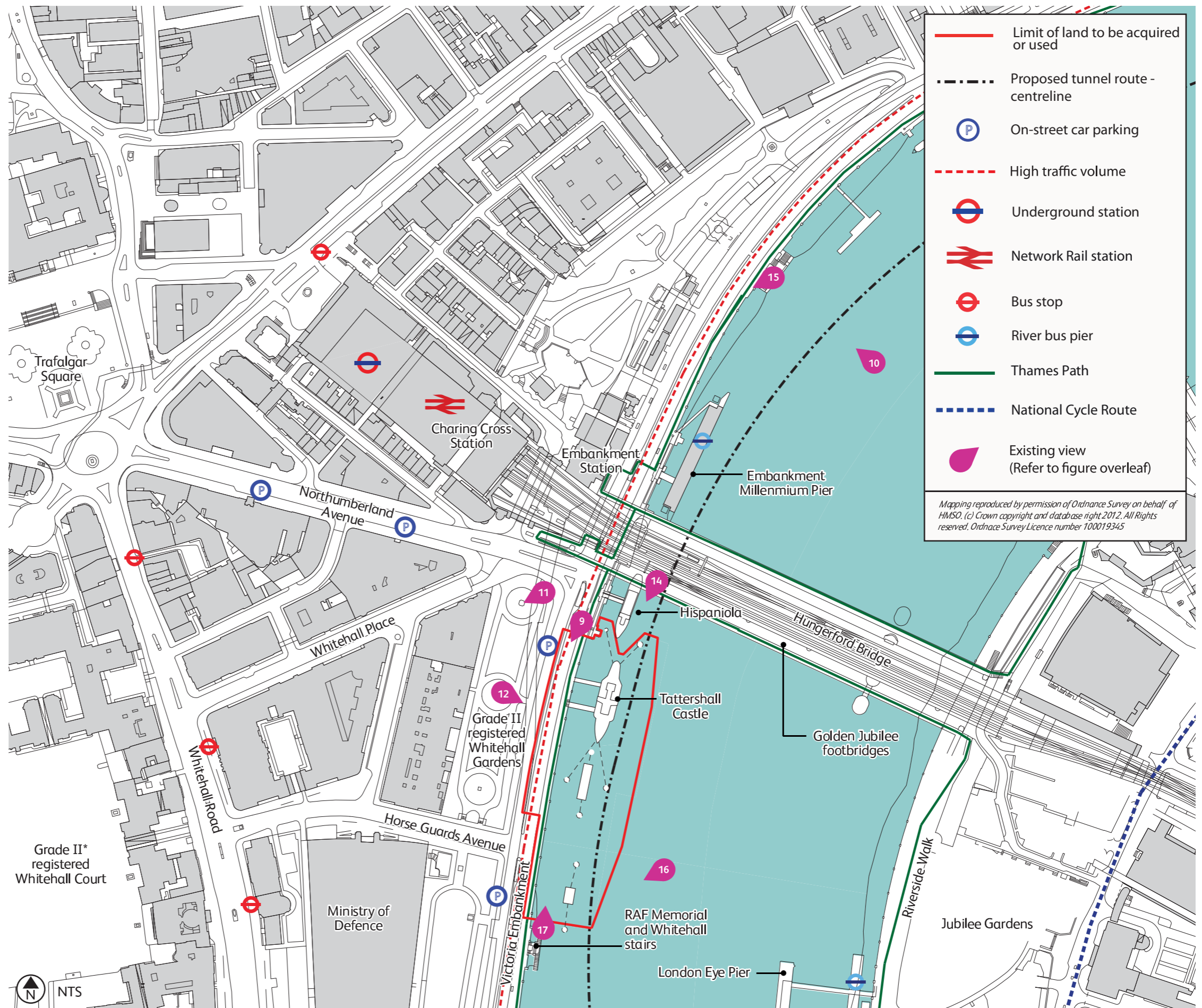


Figure 19.12: Existing site analysis plan





Figure 19.13: Victoria Embankment looking south



Figure 19.14: Cleopatra's Needle from the Thames



Figure 19.15: Sir James Outram statue in Whitehall Gardens



Figure 19.16: Existing site from Whitehall Gardens



Figure 19.17: Submariners monument at Temple Stairs (not shown on plan)



Figure 19.18: Tattershall Castle from Hungerford Bridge



Figure 19.19: One of two sphinxes at the base of Cleopatra's Needles



Figure 19.20: Whitehall stairs from the Thames



Figure 19.21: Victoria Embankment from Whitehall stairs

19.2.20 The nearest London Underground stations are: Embankment, which is approximately 150m to the north and served by the Circle, District, Bakerloo and Northern lines; and Charing Cross, which is situated beneath the National Rail station and is served by the Circle, District, Bakerloo and Northern lines.

19.2.21 Regular river bus services operated by the Thames Clippers run from Embankment Pier to the north of the site and London Eye Pier on the opposite side of the river.

**Cycle routes**

19.2.22 National Cycle Network Route 4 (from London to Fishguard) runs through central London along the River Thames along Chelsea Embankment (A3212), Lambeth Palace Road, Belvedere Road, Upper Ground, and Southwark Street (A3200). The closest point on this route is 900m to the southeast of the site.

19.2.23 The closest Cycle Superhighway to the site is CS8, which runs between Westminster and Wandsworth. Westminster Bridge, 600m to the south of the site, is the closest point on this route.

19.2.24 The closest Barclays Cycle Hire docking station is located on the northbound carriageway of Victoria Embankment, to the north of the junction with Horse Guards Avenue. Another docking station is located on Northumberland Avenue to the east of the junction with Whitehall Place.

**Pedestrian routes**

19.2.25 Victoria Embankment provides a continuous east-west link for pedestrians along the northern bank of the River Thames.

19.2.26 The Thames Path National Trail runs along the footpath of Victoria Embankment adjacent to the river. The path provides access to the Tattershall Castle and the Hispaniola. The Thames Path is popular with pedestrians, including local office workers and residents, who use it as an indirect transport route or for recreational walking and running.

### Historical context

19.2.27 The site lies at the edge of a large delta formed by the confluence of the former Tyburn and Tachbrook tributaries to the River Thames. This river system cut through the older Kempton Park Gravel Terrace to the west and created Thorney Island, which is now home to Westminster Abbey and the Houses of Parliament.

19.2.28 Due to rising water levels in the late prehistoric period, the site was submerged during the Roman period (AD 43 to 410). The landscape adjacent to the river was rural and made up of open fields. A major Roman road ran approximately 340m to the northwest of the site. There may have been an early ford across the River Thames approximately 430m to the southwest of the site, between Lambeth and Thorney Island, where there is recorded evidence of Roman occupation.

19.2.29 During the medieval period (AD 410 to 1485), the site lay adjacent to a stretch of riverfront between the settlements at Thorney Island (approximately 700m to the south), and the trading port of Lundenwic, which is now Aldwych, Strand and Covent Garden (approximately 300m to the north). Westminster Palace, the main London residence of the kings of England, was located approximately 580m to the south. During this period, successive attempts were made to reclaim the low-lying land along the riverfront and to the south of the site. The site itself lay permanently submerged within the channel of the River Thames, approximately 100m from the later medieval embankment.

19.2.30 During the post-medieval period (AD 1485 to the present day), the site remained within the channel of the River Thames. The adjacent north bank was developed as part of the expanding City of Westminster.

19.2.31 Victoria Embankment was constructed between 1864 and 1870. Extensive areas of land were reclaimed from the river and the river wall (now listed) was set out in its present alignment.

19.2.32 By the end of the 19th century, the pier immediately to the north of the site was used as a floating fire engine station and by the 1920s as a fire brigade service depot. By the mid-20th century the pier had been replaced with the current permanent structure. The site remained largely unchanged since the late 1940s.



Figure 19.22: Historic drawing of Victoria Embankment under construction © Mary Evans Picture Library

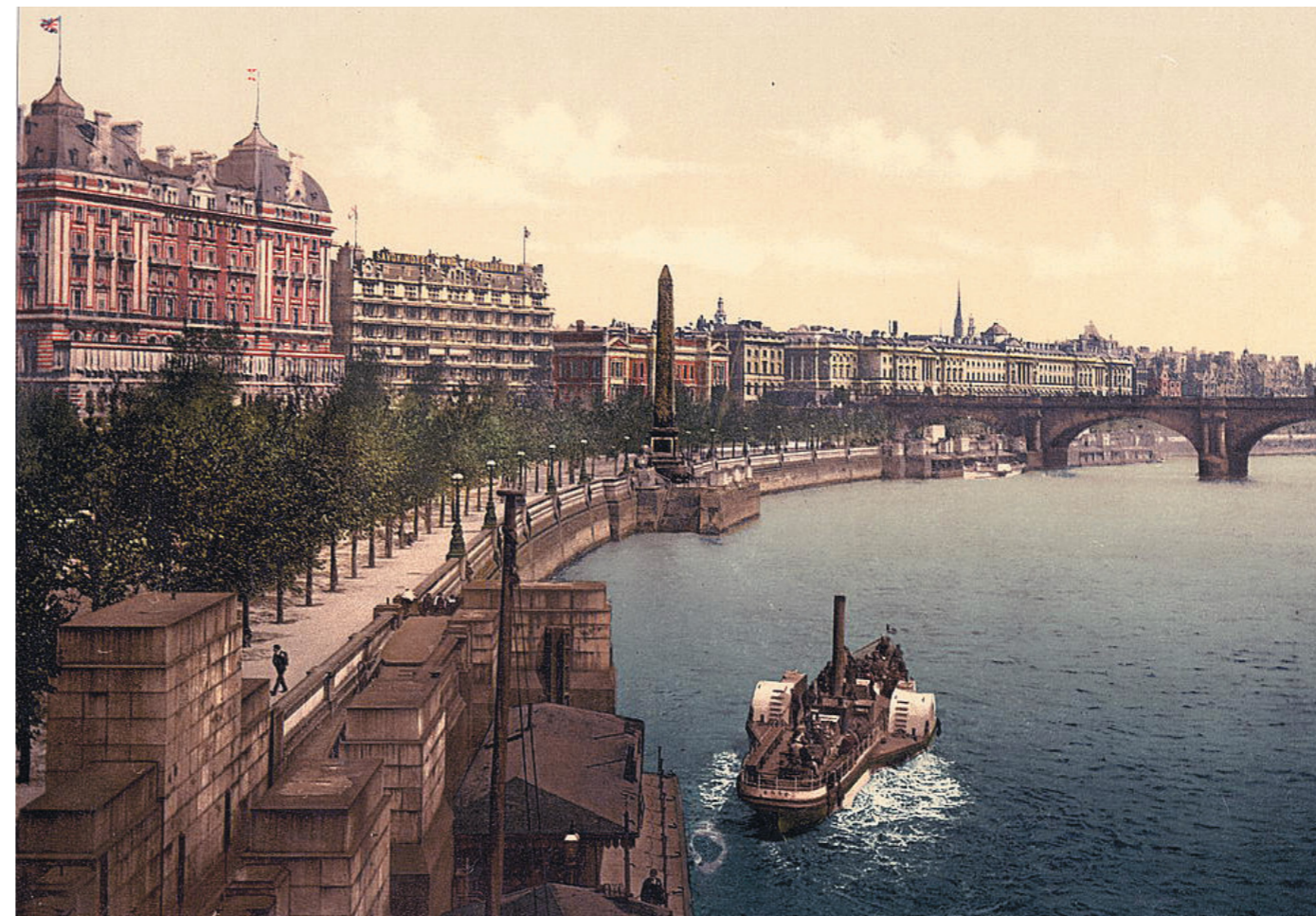


Figure 19.23: Historic painting of Victoria Embankment © Mary Evans Picture Library

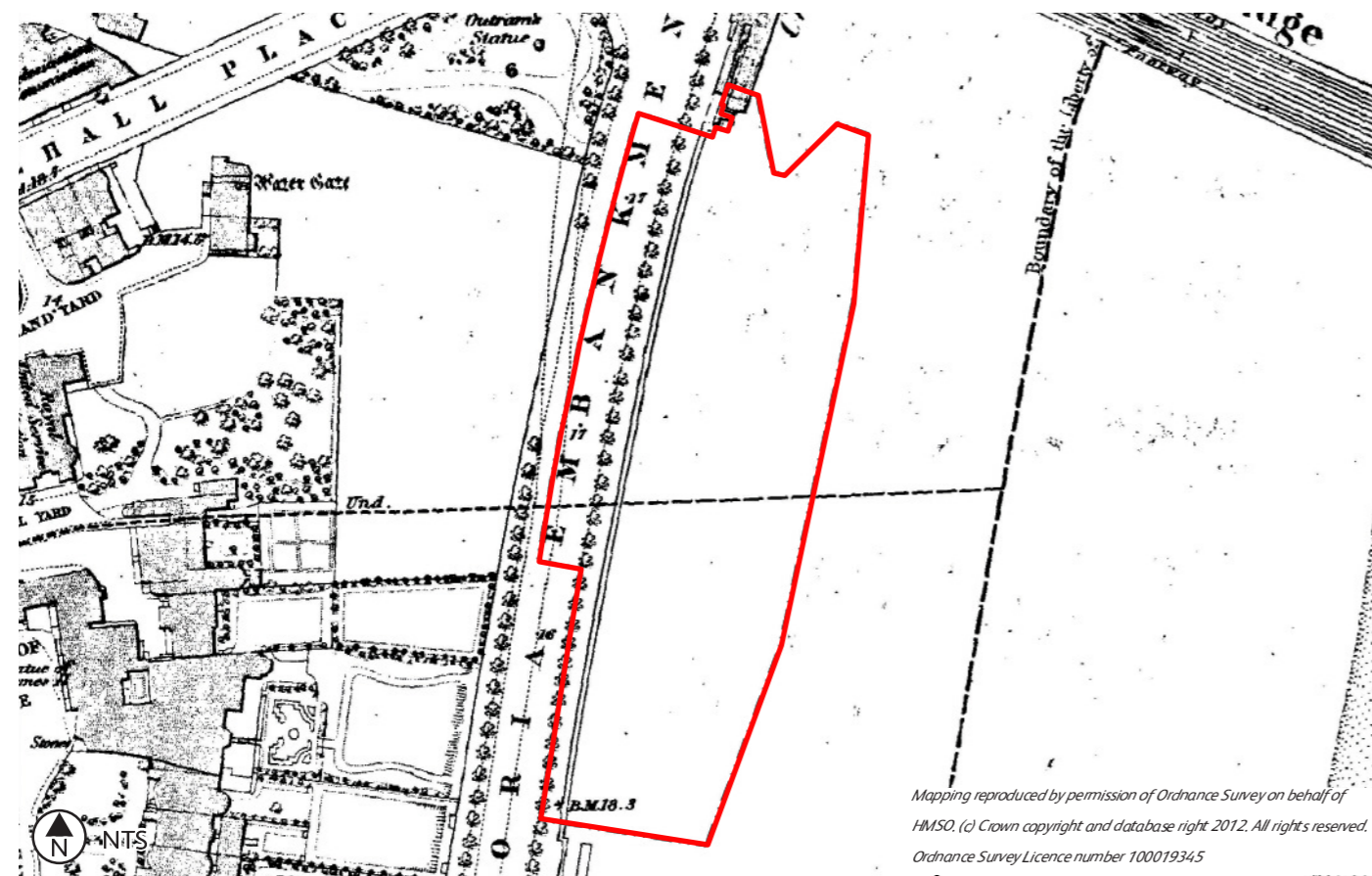


Figure 19.24: Historic map of the Victoria Embankment Foreshore site (1879)

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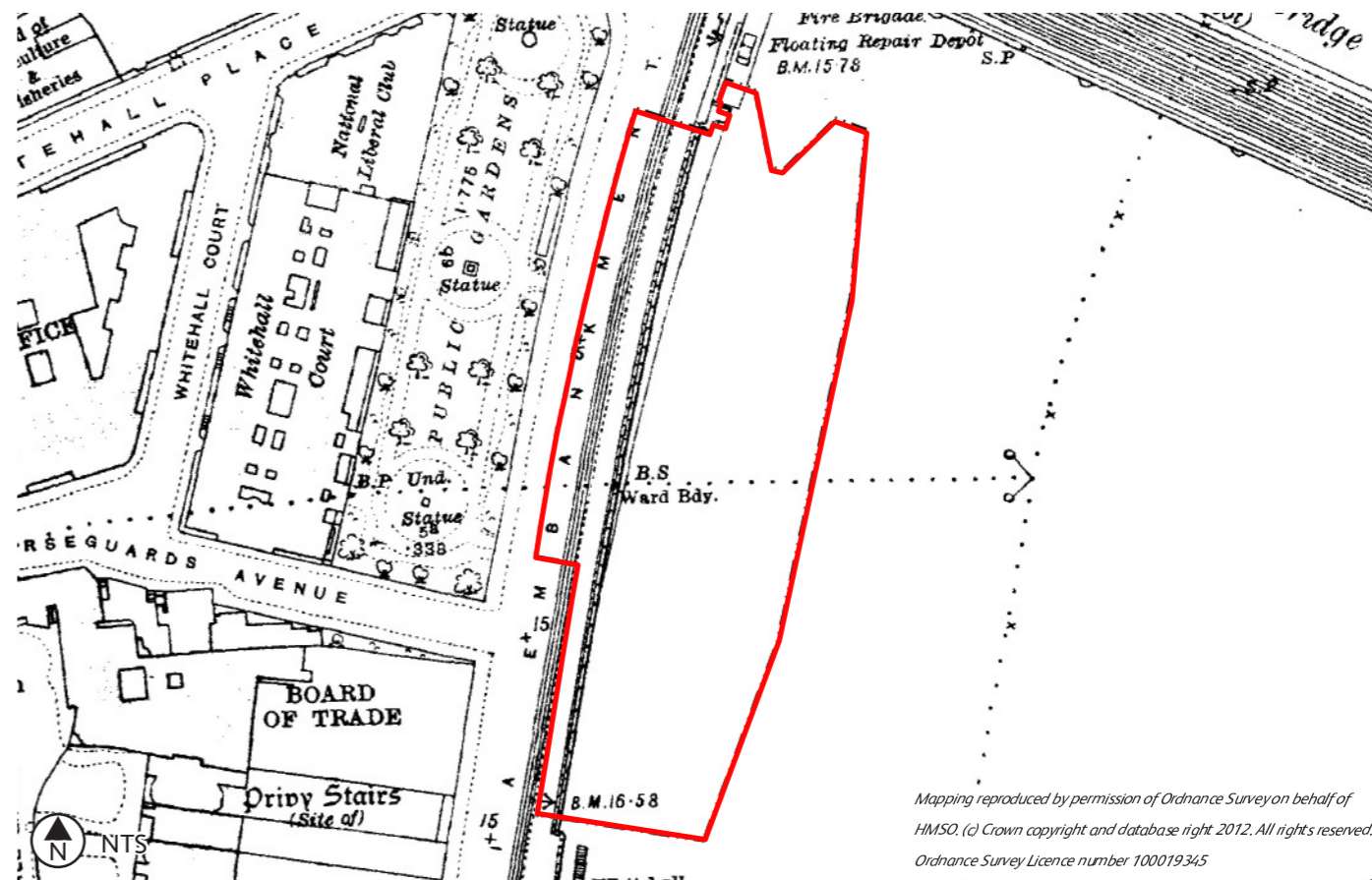


Figure 19.25: Historic map of the Victoria Embankment Foreshore site (1916)

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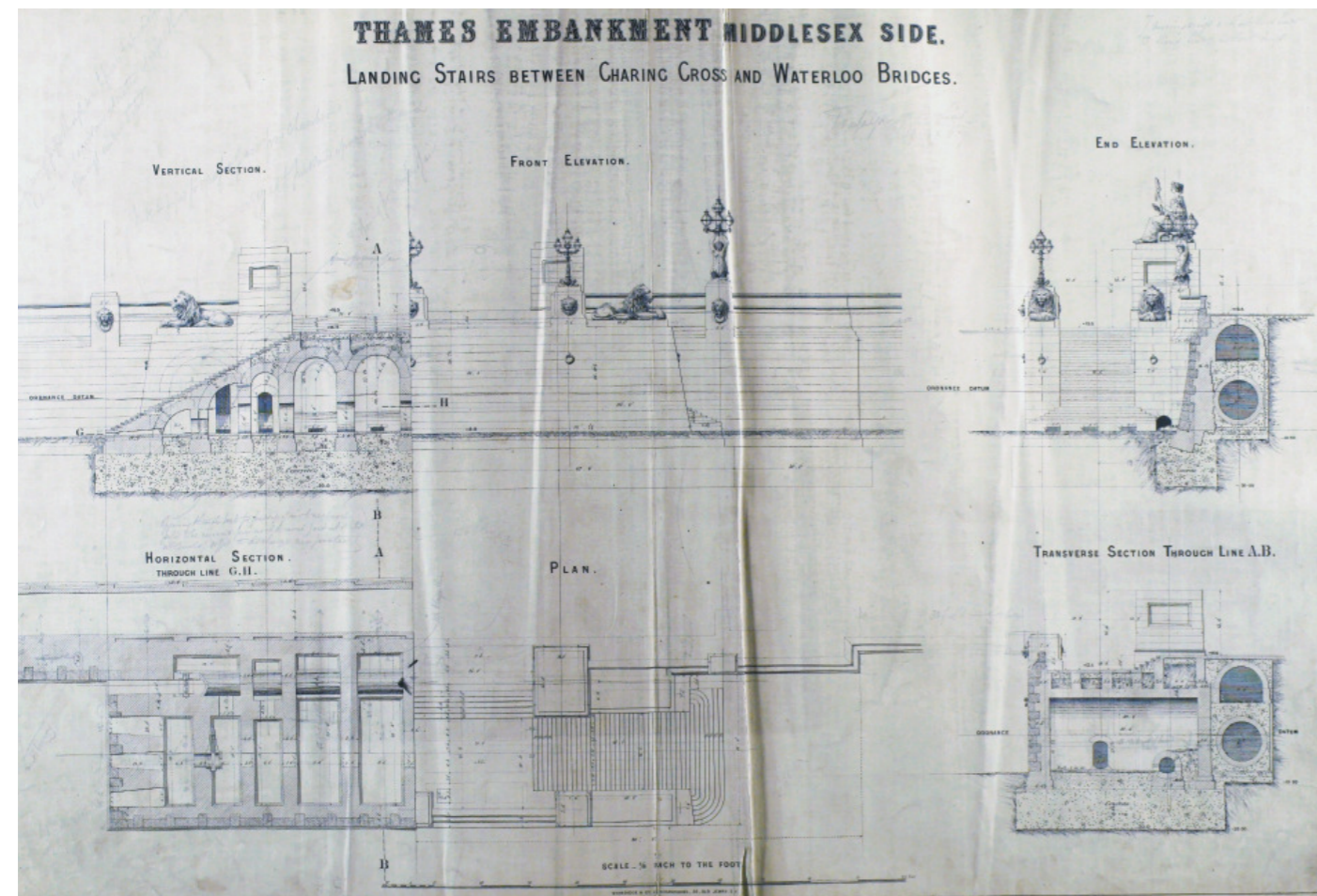


Figure 19.26: Original Thames Embankment detail drawings (not to scale)

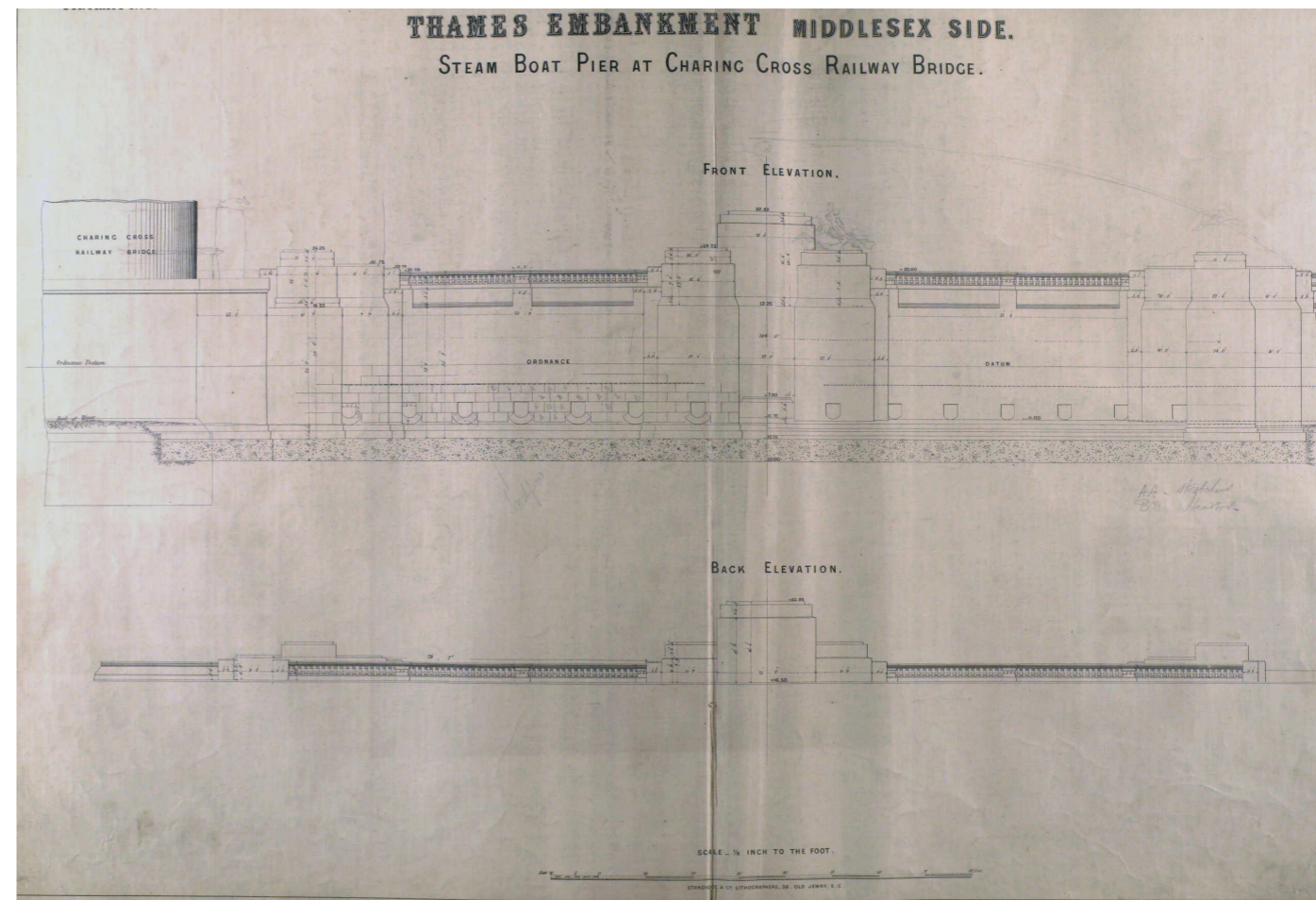


Figure 19.27: Original Thames Embankment detail drawings (not to scale)

## Site analysis: Opportunities and constraints

### The site-specific design opportunities included:

- a. Help to indirectly control flows from ten other CSOs along the northern bank of the River Thames.
- b. Create a new high quality public space on top of the proposed foreshore structure, exploiting the southeast aspect to enable views of the river, the World Heritage Site, and the South Bank.
- c. Improve visual access to the River Thames by providing open balustrading around seating areas away from the main pedestrian and vehicular routes.
- d. Introduce ecological enhancements (in the form of microhabitats for invertebrate colonisation) to a section of the River Thames that currently has little biodiversity.

### The site-specific design constraints included:

- a. the location of the Regent Street CSO and the northern Low Level Sewer No. 1
- b. the Grade II listed Victoria Embankment river wall, sturgeon lamps, catenary lamp standards and sphinx benches
- c. designated and protected views along the riverside, including views of the World Heritage Site
- d. the setting of Grade II\* listed buildings and Grade II registered parks and gardens

e. the line of mature trees along the listed wall

f. the busy Victoria Embankment (A3211)

g. the Westminster Central Activities Zone and large numbers of tourists in the vicinity and the aspirations set out in the City of Westminster's Core Strategy Policy CS6

h. existing coach parking

i. the proximity of the Bakerloo, Circle and District Line tunnels, the Golden Jubilee footbridges, Hungerford Rail Bridge, Embankment Pier and river traffic

j. major utilities within a pipe subway directly above the northern Low Level Sewer No. 1 and within the embankment walls

k. the depth and relatively fast flow of the River Thames at this point

l. the Tattershall Castle and the Hispaniola, which are moored within/adjacent to the site.

19.2.33 Environment Agency policy seeks to minimise encroachment into the river. The project structures must minimise any impact on river flows and reduce the potential for scour. The project structures must also be protected from vessel impacts.

19.2.34 Developing the design at Victoria Embankment Foreshore required a detailed analysis of the existing embankment and listed wall in line with saved UDP Policy DES 9 (Conservation Areas) and DES 10 (Listed Buildings).

19.2.35 The curved and slightly angled listed wall is clad in granite blocks. The sturgeon lamp standards are set on stone piers at approximately 20m intervals along the embankment. The standards are linked by 'festoon lighting' that dates from the Festival of Britain in the 1950s.

19.2.36 There are a number of orthogonal projections from the main line of the listed wall in the form of steamer piers and steps such as Whitehall Stairs and Cleopatra's Needle. These functional breaks in the wall are marked with monuments, such as the Royal Air Force memorial by Whitehall Stairs and the Bazalgette Memorial by a steamer pier.

19.2.37 Unlike the pedestrianised spaces of the South Bank, it is not as pleasant to spend time by the river, even though many tourists enter London in this area from the coach drop-off. *Core Strategy Policy CS 36* (Westminster's Blue Ribbon Network) encourages development alongside the Blue Ribbon Network to enhance the waterside location and improve access to and enjoyment of the waterfront. In developing the design for the permanent works, we considered the site from various perspectives around and across the river and away from the busy embankment towards the river views. We conducted studies of the works in the context of the monumental 'theatre' of the River Thames between the Palace of Westminster and the Hungerford bridges.

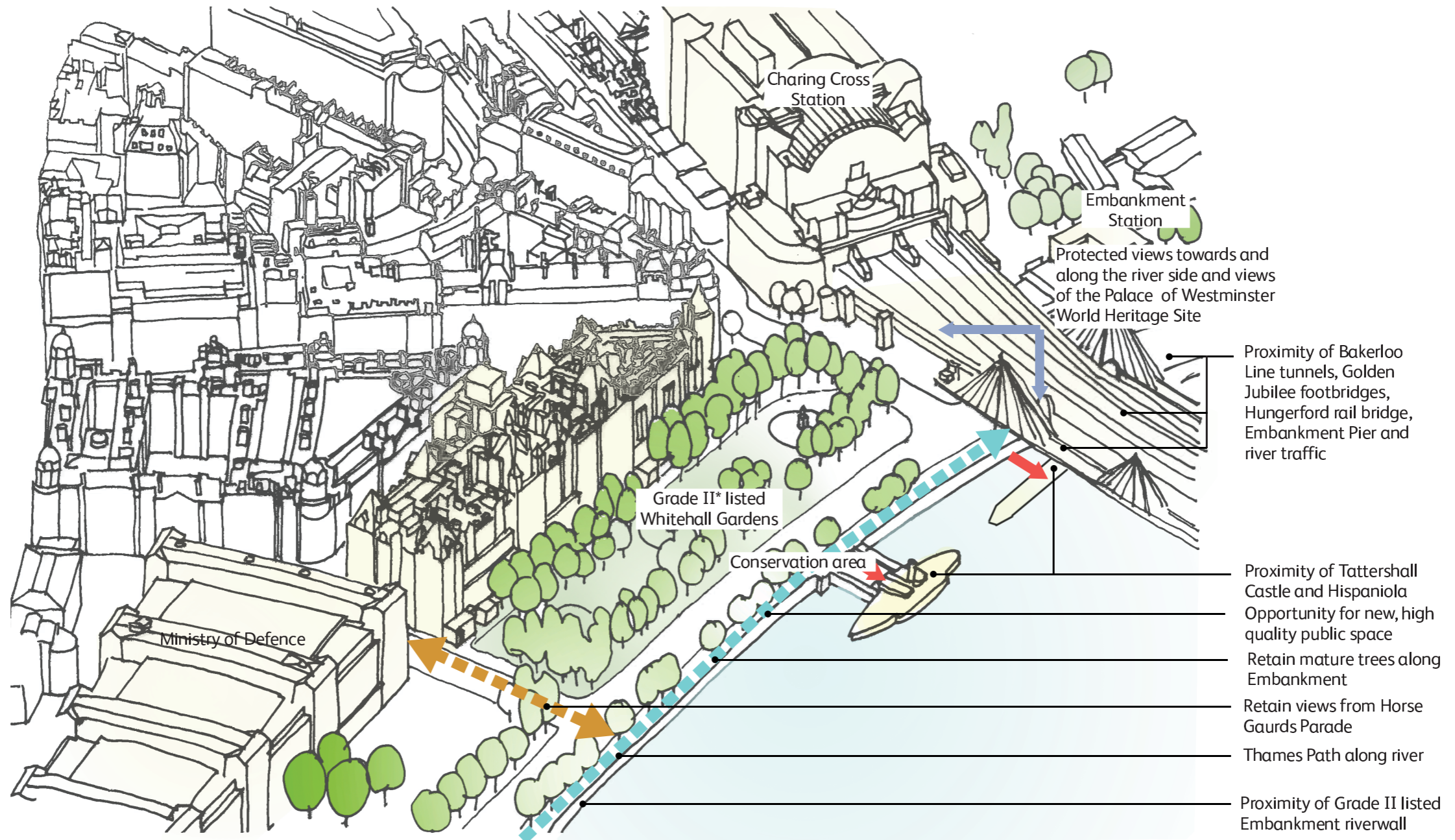


Figure 19.28: Existing site opportunities and constraints sketch

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### 19.3 Design evolution and alternatives

19.3.1 As the majority of the infrastructure for the project would be below ground, the key design objective for the permanent above-ground works was to integrate the functional components into the surroundings. The site-specific design objective at Victoria Embankment Foreshore was to successfully integrate the infrastructure into the visually sensitive area, while protecting heritage assets and views, having regard to the City of Westminster's *Core Strategy Policy CS 24* (Heritage) and *CS 25* (Views).

19.3.2 The design of our proposals at Victoria Embankment Foreshore was also significantly influenced by an extensive process of stakeholder engagement and design review. In order to ensure design quality, we undertook three rounds of review hosted by the Design Council CABE. We also held various pre-application meetings with the City of Westminster, English Heritage and other strategic stakeholders. More information on our public consultation process is provided in the *Consultation Report*, which accompanies the application.

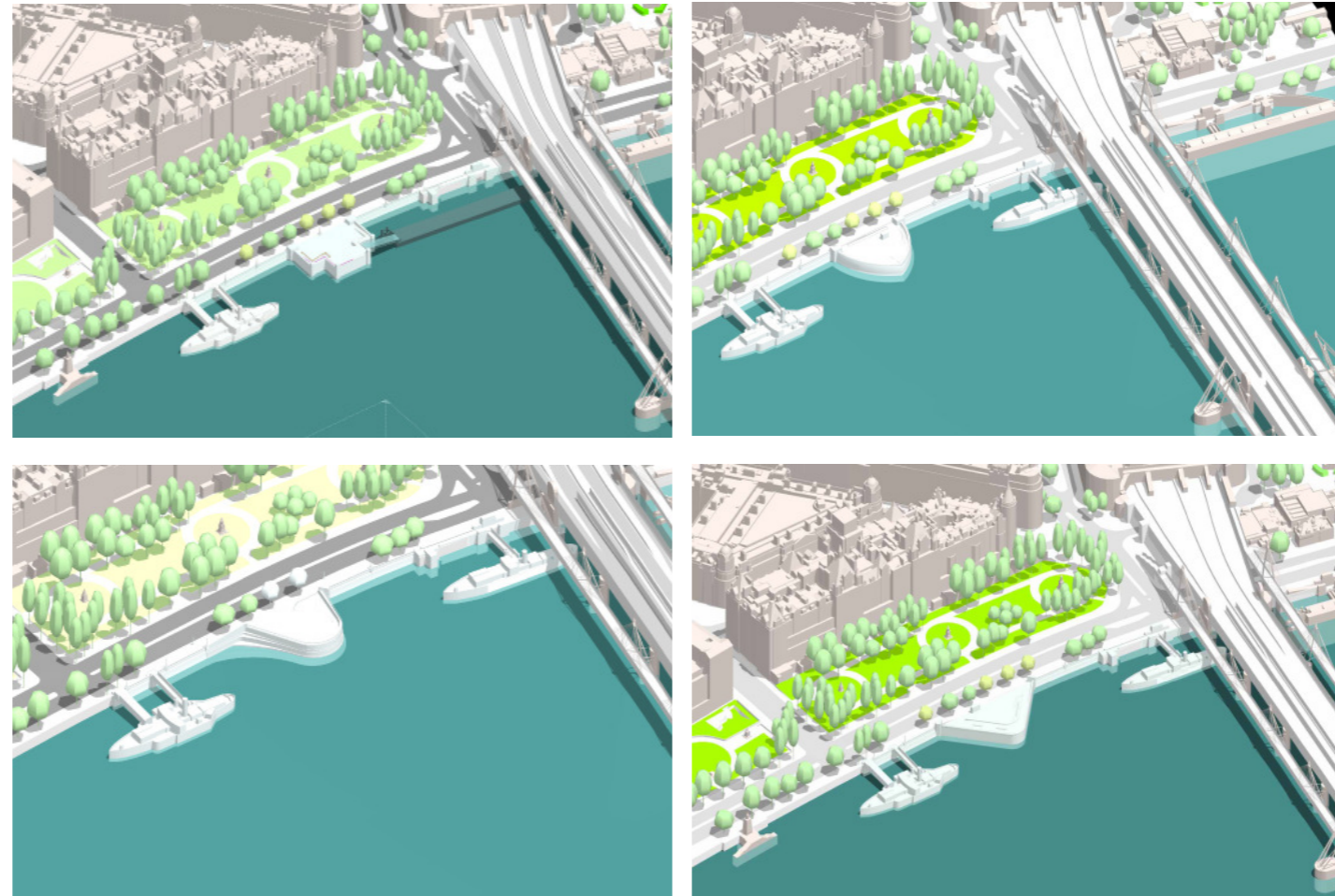


Figure 19.29: Design development options presented at Design Council CABE sketch review

October 2010

## Phase one consultation

19.3.3 Victoria Embankment Foreshore was presented as our preferred site at phase one consultation. We proposed to intercept the Regent Street CSO and connect the directly adjacent northern Low Level Sewer No. 1 to the main tunnel in order to control other CSOs along the embankment.

19.3.4 The proposals for the permanent works comprised a curved triangular foreshore structure flush to the steamer pier abutment at its eastern end enclosing a 10m diameter drop shaft, and a 10m high ventilation column on the river's edge.

19.3.5 Key issues raised by stakeholders at this phase of consultation included:

- the potential impact on aquatic ecology
- the potential impact on existing heritage in the area
- the potential impact on river navigation
- the potential impact on the Bakerloo Line tunnels.

19.3.6 Having considered the feedback received, we still believed that the foreshore was the most appropriate site. We therefore sought to mitigate stakeholders' concerns through engagement and design development.

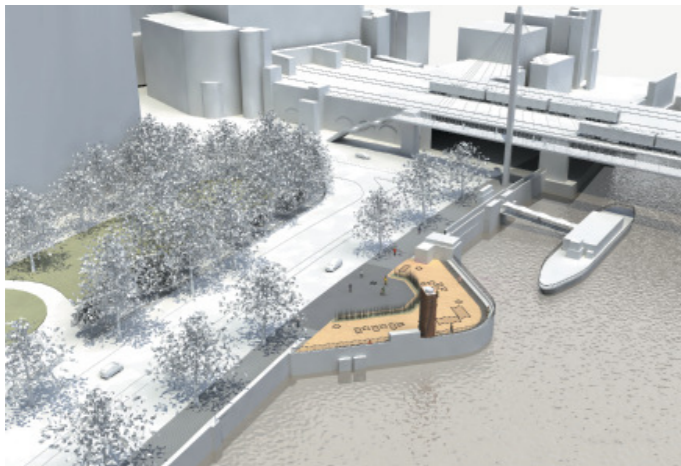


Figure 19.30: Proposed view from phase one consultation

## Design development

19.3.7 Following phase one consultation, we prepared sketch options to explore the following design considerations:

- moving the project structures to the south, away from the Bakerloo Line tunnels
- aligning the structures with existing heritage assets; specifically the gated entrance to Embankment Gardens opposite.
- increasing the area of the foreshore structure to accommodate a larger diameter drop shaft to meet hydraulic requirements in response to further hydraulic modelling
- testing possible shapes for the foreshore structure with fluvial modelling
- introducing multiple, smaller ventilation columns
- permanently relocating the Tattershall Castle.

19.3.8 Further modelling then established that the Regent Street CSO could be adequately controlled by relieving flows from the northern Low Level Sewer No.1 by means of a 20m long overflow weir. The results of the modelling formed the basis of our engineering design from this point on.

April 2011

## CABE sketch review

19.3.9 We held a sketch review based on our initial assessment and sketched ideas for the site with the Design Council CABE in April 2011. We presented various options for the shape of the foreshore structure and the layout of the landscape design including the ventilation columns and electrical and control kiosks.

19.3.10 Our design at this stage was based on a progression from beneath the imposing canopy of the line of London Plane trees along Victoria Embankment, through a pergola and up to a viewing platform on the foreshore structure, where the elevation would enable unimpeded views of the River Thames.

19.3.11 The Design Council CABE panel considered our general approach to the site well-reasoned, in particular the strong orthogonal shape of the foreshore structure to reflect the linear Victoria Embankment.

19.3.12 The panel acknowledged the significance of the historic context of the site and noted that it demands a visionary, design-led solution, which may require compromising the below-ground works to a certain extent to accommodate the design aspirations. The panel stated that the design team must find a solution that respects and enhances the surroundings.

19.3.13 The panel advised that the design team needed to demonstrate that the proposals for this site are consistent with the long-term vision for this part of Victoria Embankment, including the Tattershall Castle and the Hispaniola.

19.3.14 The panel noted that the site presents an exciting opportunity for a new public space in which to pause and enjoy views of the river. The proposals must reflect a vision for how the public space would accommodate the needs of different users. The panel considered that the suggestion of using it as a bike hire location could inhibit the enjoyment of the space as a respite from the busy surroundings.

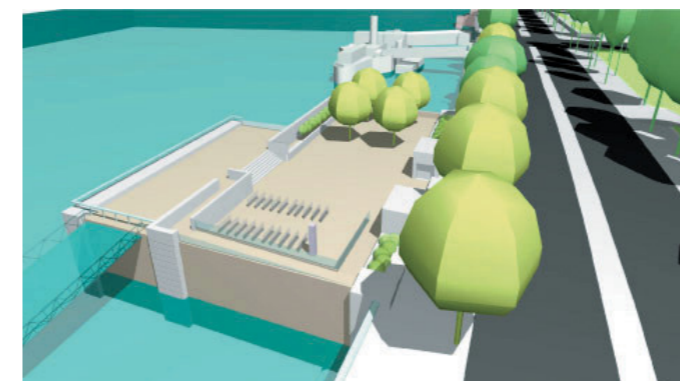


Figure 19.31: Proposed view from Design Council CABE sketch review

June 2011

## CABE scheme review

19.3.15 We presented a more detailed scheme to the Design Council CABE for review in June 2011. We had developed an orthogonal L-shaped design for the foreshore structure to reflect existing projections along Victoria Embankment. We presented a visual from the southern Golden Jubilee Bridge and a section of the above- and below-ground structures looking towards the Golden Jubilee/Hungerford bridges from the south. We also included a potential palette of materials and finishes for street furniture and landscaping.

19.3.16 The Design Council CABE panel reiterated its support for the "well-judged" asymmetrical orthogonal foreshore structure and considered that the asymmetry would create interest when viewed from the south. The panel suggested mirroring the asymmetry on the downstream side to reduce the structure's monolithic appearance from Hungerford Bridge, possibly by including steps down to the water. It also considered that slanting the walls of the structure would lend it a welcome sense of strength and majesty in the waterside context.

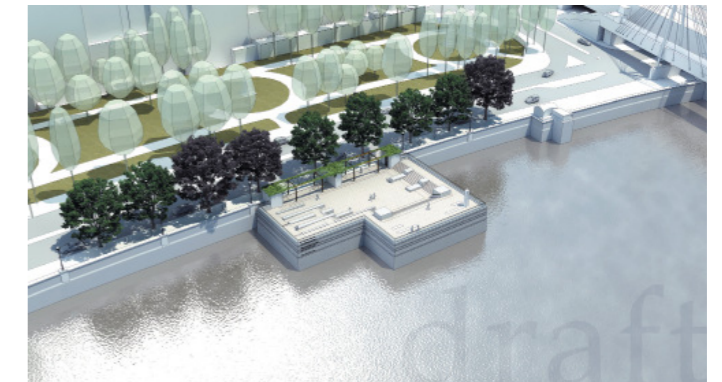


Figure 19.32: Proposed view from Design Council CABE scheme review



February 2012

## Phase two consultation

19.3.17 The panel stated that using the kiosks to define the threshold of the public space was a well-conceived idea. It stated that the concept of celebrating users' arrival into a 'project' space could serve as a model for other foreshore sites.

19.3.18 The panel further considered that terracing the sides of the structure down towards the river would lend more drama to the experience of the space. It suggested using robust materials for balustrades as an alternative to glass.

19.3.19 The panel suggested testing a variety of inclines for access ramps and considering how people of different ages might use them.

19.3.20 Finally, the panel stated that it would be useful to consider whether the space could host temporary public art to draw the eye of passers-by at street- and bridge-level.

19.3.21 We presented the L-shaped orthogonal design for the foreshore structure at phase two consultation. The key concerns raised by stakeholders, including English Heritage, in relation to the revised design included:

- a. the need to protect the historical townscape, including the conservation area, listed buildings, World Heritage Site and the surrounding views
- b. the proposed relocation of the Tattershall Castle
- c. the proposed maintenance regime
- d. the use of the proposed foreshore structure.

19.3.22 The City of Westminster made a number of specific design-related comments including:

- a. The council strongly objects to the proposals on grounds of the harmful impact on the listed wall, the setting of nearby listed buildings, the Whitehall Conservation Area, the riverside and the surrounding views.
- b. The size of the foreshore structure has increased since phase one consultation and, although the orthogonal shape responds to the linear character of the site, the asymmetrical design is unconvincing. A symmetrical design would better reflect other projections into the river.



Figure 19.33: Proposed view from phase two consultation

c. The 4m and 6m high ventilation columns could harmfully impact on the setting of nearby listed buildings and river prospect views towards the World Heritage Site. The design of the columns must fit the character of the local townscape.

d. The council opposes the proposed location for the Tattershall Castle. There is no existing purpose-designed pier in that location and access would require gangways over the listed wall. Cumulatively the vessel, gangways and new foreshore structure would have a significant and detrimental impact on the listed wall and views of the river.

e. Thames Water should consider the ownership, long-term function, maintenance and governance of the site.

f. The council supports the aim to minimise light spill onto the River Thames and to avoid detracting from the night-time view of the festoon lighting from the south. Light spill onto neighbouring buildings and the public road should also be minimised.



Figure 19.34: Proposed view from phase two consultation

## Design development

19.3.23 In response to phase two consultation, we undertook an internal design review and additional analysis of the site. Criticism of the phase two design had focused on the bulk of the foreshore structure when viewed from the river; whereas up to that point we had focused on the experience of enjoying views towards the river. Accordingly, we analysed the views towards the site and determined that the structure's 'bulk' was most problematic when viewed from the southern Golden Jubilee Footbridge.

19.3.24 We prepared sketches of the foreshore structure that outlined three possible approaches to resolve this imbalance. The least radical sketch mirrored the footprint of the phase two design in order to keep the affected section of the listed wall to a minimum but broke up the bulk of the structure when viewed from the southern Golden Jubilee Footbridge.

19.3.25 The second sketch added a 'wing' to the foreshore structure to make it symmetrical. The wing balanced the bulk of the structure and reduced the perceived projection into the river. However, this option unnecessarily increased the impact on the listed wall and the encroachment into the foreshore.

19.3.26 The third and most radical sketch broke up the mass of the structure by splitting it in two. This entailed significant re-engineering of the below-ground structures and a number of compromises in relation to the long term maintenance access. The main features of this design included one structure around a longer, thinner and deeper CSO interception chamber against the listed wall and a separate structure over the CSO drop shaft that formed an 'island' in the foreshore. The island was functionally connected to the interception chamber by a culvert buried beneath the foreshore. It also formed a publically accessible viewing platform connected to the embankment via a light-weight, cable-stayed bridge. This was known as the 'island design'.

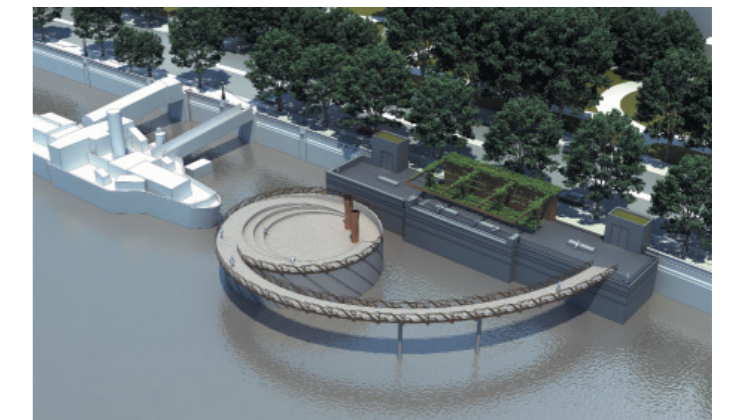


Figure 19.35: Proposed view during design development

June 2012

## Design Council CABE targeted consultation review

## Targeted consultation

19.3.27 The City of Westminster and English Heritage stated in initial discussions that the island design had great potential as a unique and exciting new space for London. Therefore we developed the design further. We included a second bridge to the island to improve maintenance access and public safety. We also included a number of seating terraces on the island oriented towards the principal views. We then undertook a further round of consultation.

19.3.28 The City of Westminster raised some specific concerns in relation to the design including:

- the scale of the projection into the river
- the impact on the listed wall
- the impact on the conservation area and World Heritage Site
- the significant risk of the actual or perceived bulk of the projection increasing as a result of further design development.

19.3.29 The council also noted that several matters remained unresolved, including:

- requirements from the Port of London Authority, Environment Agency and other stakeholders that might impact on the design
- the detailed design of the spiral shape that encompasses the island
- the loss and replacement of trees on the footpath of Victoria Embankment
- the future maintenance and ownership of the new public space
- the proposals for the Tattershall Castle.

19.3.30 The council believed that the design did not preserve or improve the character of this part of the River Thames. It recommended returning to a formal, orthogonal approach in order to minimise the bulk of the foreshore structure. It considered that a symmetrical design would reduce the perceived bulk and reflect other riverside projections.

19.3.31 English Heritage also objected to the island design and noted that all of the permanent structures that protrude into the River Thames from the North Bank are very formal and generally commemorative in nature, such as the Royal Air Force memorial and Cleopatra's Needle. It stated that the design for this site needed to be more formal in order to respond to the key heritage assets in the area.

19.3.32 Other comments received from English Heritage are summarised below:

- The island design would have a jarring presence and would unbalance the contrast between the two sides of the river, which is a critical element of the extraordinary quality of this part of London's historic environment.
- A symmetrical, more integrated shape would be a more discreet way of accommodating the necessary infrastructure.
- The 'sail-like' support structure for the island design could create visual discord with Hungerford Bridge when viewed from Westminster Bridge or from the South Bank.



Figure 19.36: Proposed view from targeted consultation

19.3.33 At the request of key stakeholders, including the City of Westminster and English Heritage, we presented the island design (from targeted consultation), the orthogonal L-shaped design (from phase two consultation), and a symmetrical design to the Design Council CABE for comparison and discussion in June 2012.

19.3.34 The Design Council CABE panel applauded the island design for the "very challenging location"; however, although the panel was delighted with the design, it did not consider it appropriate for this formal, civic part of the North Bank. It also queried how accessible the island would be for the mobility impaired.

19.3.35 The panel considered that the symmetrical and orthogonal designs were more in keeping with the character of the site and merited further development. The panel's comments included:

- There is no need for the foreshore structure to be symmetrical; it is more important to develop a formal design that complements the character of the surroundings. A less modest structure could fit comfortably in the broad and open context of the River Thames.
- In addition to developing the symmetrical or orthogonal designs, the design team could explore a formal approach to the island design, such as a 'peninsula' extending into the river.



Figure 19.37: Proposed view of design option from Design Council CABE targeted consultation

c. The design team should consider the appearance of the foreshore structure at low and high tide. The inset corners of the structure lessen its visual bulk and improve its appearance from Hungerford Bridge but could appear 'dark' at low tide. Stepped access between the structure and the foreshore could mitigate its visual impact.

d. The relationship between the new public space on top of the foreshore structure and the existing public realm of Victoria Embankment and Embankment Gardens is extremely important. The panel suggested aligning the entrance of the new public space with the entrance to Embankment Gardens to create a visual connection and potentially a sequence of public spaces, which could be facilitated by a new pedestrian crossing.

e. The design team should further consider the transition between the pavement of Victoria Embankment and the new public space. The ventilation column should be a stronger feature in the new space; however, it should not block views of the river. The various design elements of the kiosks, column, seating, and handrails should be cohesive.

f. The panel is concerned that level changes across the foreshore structure would limit accessibility.

g. The design team should explore the opportunity to include moorings for small boats and, in particular, to enable mobility-impaired access to boats.

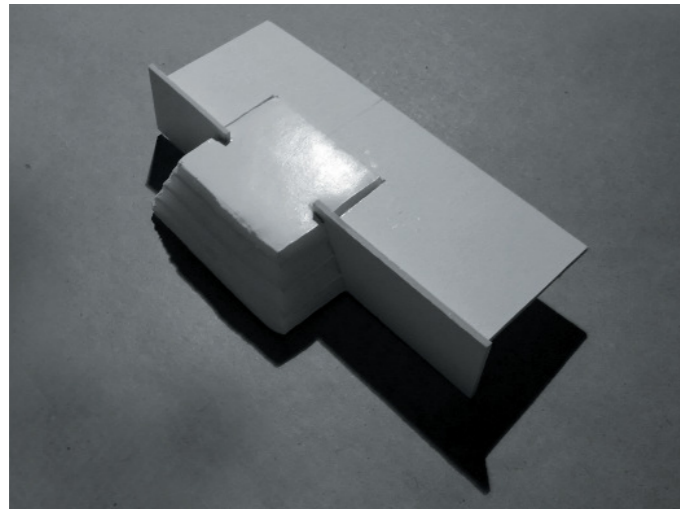


Figure 19.38: Proposed view of design option from Design Council CABE targeted consultation

July 2012

Design development

Section 48 publicity



19.3.36 Following targeted consultation, we continued to liaise with representatives of the City of Westminster and English Heritage to develop the design and the design principles for the site to accommodate their aspirations for the area.

19.3.37 As the majority of our stakeholders did not consider the island design suitable for the location, we amended the layout and shape of the design, having regard to comments from English Heritage and the Design Council CABE.

19.3.38 The proposed layout is more formal and symmetrical than at phase two consultation and targeted consultation and would not project as far into the river. The design was influenced by the historic environment of Victoria Embankment and aims to emulate the existing features along the listed wall. The design combines elements of the phase two consultation architectural design (the orthogonal shape) with the targeted consultation engineering design (the longer intrusion into the river wall but reduced extent out into the river).

19.3.39 The City of Westminster responded with the following design-related comments:

- a. The council would value a symmetrical, orthogonal design that reflects the line of the listed wall.
- b. Every effort should be made to minimise the bulk of the foreshore structure. The design team should consider introducing recesses, set-backs and steps to the sides of the structure.
- c. The design team should reinstate as much of the listed wall removed during construction as possible. The separation between the Victoria Embankment footpath and the foreshore structure should be clearly defined.

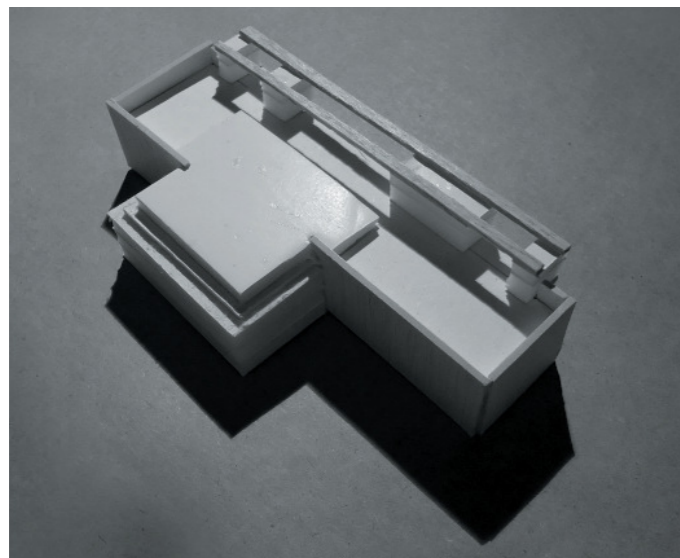
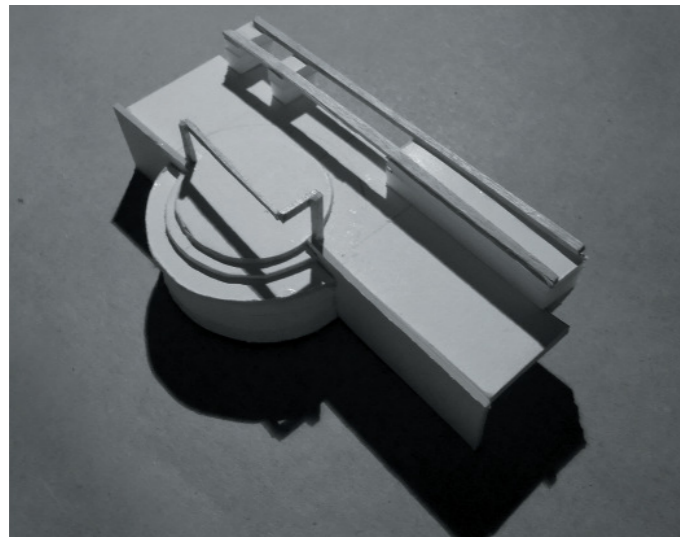


Figure 19.39: Design development models

d. The council expects the highest standards of sustainable and inclusive design and architectural quality.

e. The ventilation columns should be designed to minimise any harmful impact on the setting of the nearby listed buildings and views towards the World Heritage Site. The design should also have regard to the character of the local townscape.

f. The council strongly opposes the proposal to relocate the Tattershall Castle upstream of the foreshore structure. The vessel, gangways and foreshore structure would cumulatively have a significant and detrimental impact on the listed wall and on views of the river.

19.3.40 English Heritage advised that it strongly supported the revised design for the operational infrastructure at Victoria Embankment Foreshore at Section 48 publicity.

19.3.41 The design submitted in the application for development consent is closely based on the orthogonal design developed in response to targeted consultation and the final Design Council CABE review.

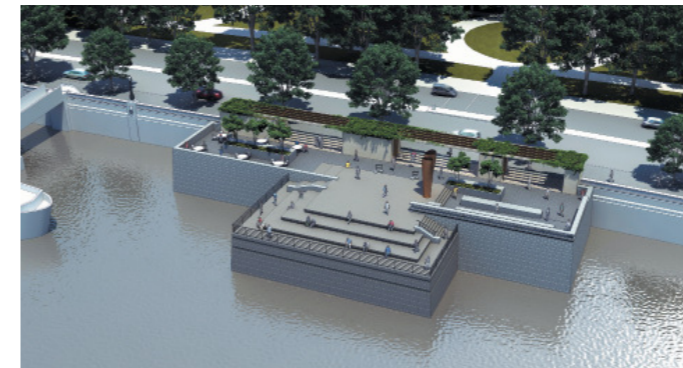


Figure 19.40: Proposed view from Section 48 publicity

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19.4 Proposed design

19.4.1 This section describes the amount, layout and scale of the proposed development and how the functional components would be integrated into the existing site. Details of the proposed landscaping and appearance of the site are also embedded in the description where relevant.

Fixed principles

19.4.2 The Site works parameter plan defines the zones in which the proposed works would take place. The plan indicates the general location of the CSO drop shaft, electrical and control kiosks, amenity buildings and ventilation columns.

19.4.3 The site-specific design principles are included in the *Design Principles* document which accompanies this application. These principles establish the parameters for the above ground structures and landscaping on the site and have, where possible, been developed in consultation with the local authority. The site-specific principles should be read in conjunction with the project-wide design principles.

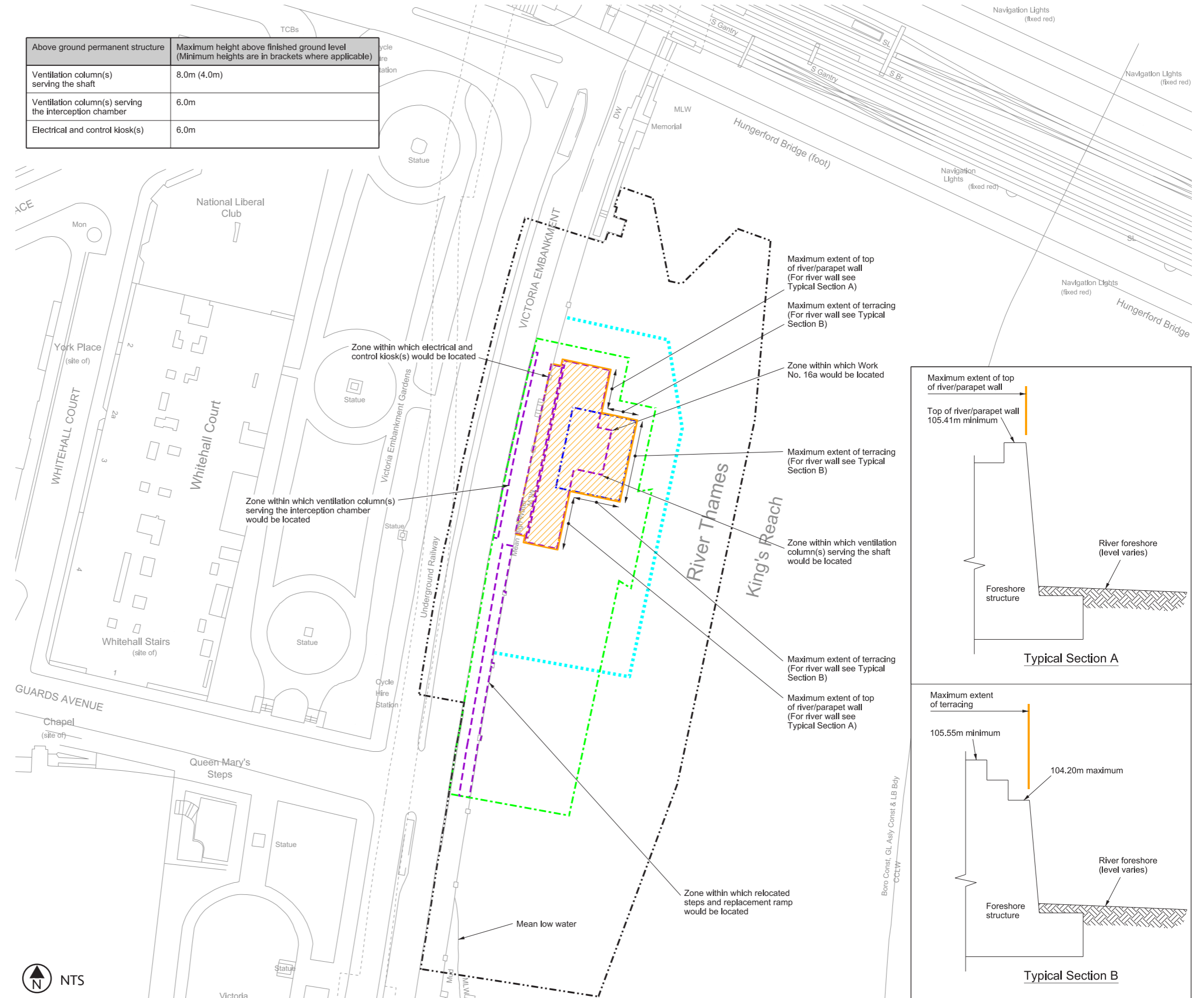


Figure 19.41: Proposed site works parameter plan - refer to Site works parameter plan in the *Book of Plans*

## Design objectives

19.4.4 The proposed foreshore structure would form a new area of public realm. The main driver behind the development of the design was to explore ways in which the structure could fit in with and contribute positively to its riparian environment. Our main objectives included:

- a. Enhance visual access to the River Thames.
- b. Create a simple and elegant new landmark public space of a fitting stature for the monumental context of the site.
- c. Frame views to create a visual link between Embankment Gardens and the River Thames.
- d. Develop a variety of pleasant spaces by providing seating, addressing shade and microclimate, ensuring the right degree of separation from Victoria Embankment, and providing opportunities for commercial activities to further 'activate' the space.
- e. Develop a contemporary architectural language for the foreshore structure that complements the context including appropriate massing and proportions, sensitive detailing and selection of high quality materials.
- f. Locate the proposed trees in line with the historic rhythm and alignment of trees along Victoria Embankment.
- g. Minimise the impact on nearby heritage assets and (where possible) preserve and enhance them.

## Use and programme

19.4.5 Given the central location and prominent position of the proposed foreshore structure, we anticipate that it would be used as a new, high-quality public space on the busy central London riverside. We sought to position the works to avoid any physical or visual obstruction of the sensitive surroundings. The southern Golden Jubilee footbridge and the Thames Path are busy thoroughfares and it can be difficult to stop and enjoy the views. There is often pressure on pavement space from various kiosks, Embankment Pier, the London Underground stations, the coach drop-off and other tourist activities. The foreshore structure would relieve some of this pressure and provide a calm space away from traffic. It would allow users to appreciate the River Thames and interpret the historic surroundings; it is therefore important that the site is not cluttered.

19.4.6 The proximity of the structure to Embankment Underground Station and nearby coach parking would make it a convenient meeting point. The suggested commercial use of the proposed southern amenity building would create additional activity and foster natural surveillance.

19.4.7 The southeast facing projecting terraces would provide a serene and open environment in which to sit and enjoy the views. It would increase riverfront access for local workers, residents and tourists and form a pleasant, accessible space for people all of ages year round. Against the backdrop of the London Eye and the World Heritage Site beyond, the terraced structure could also provide a forum for street performances.



Figure 19.42: Proposed view of foreshore structure



Figure 19.43: Proposed view of foreshore structure

**Foreshore structure**

19.4.8 The foreshore structure would enclose the CSO drop shaft (approximately 13m in internal diameter) and other below-ground infrastructure and would be surrounded by a new section of river wall. The structure would be aligned as closely as possible to the central roundel in Whitehall Gardens on the opposite side of Victoria Embankment in order to visually link the new public space to the existing entrance to the gardens.

19.4.9 In developing the design of the structure, we had regard to the City of Westminster’s saved *Unitary Development Plan* Policy DES 9 (building in conservation areas), *Core Strategy Policy CS24* (works to listed buildings) and *Core Strategy Policy CS25* (protection of views). We therefore broke the structure up into masses of different volumes in order to reduce its perceived mass in views along the river. We designed the massing and composition, the modulation of the different surfaces and the positioning of the functional components to integrate the structure into the historic surroundings.

19.4.10 The design comprises three main components: the combined kiosk and canopy structure, the embankment terrace, and the projecting river-facing terraces.

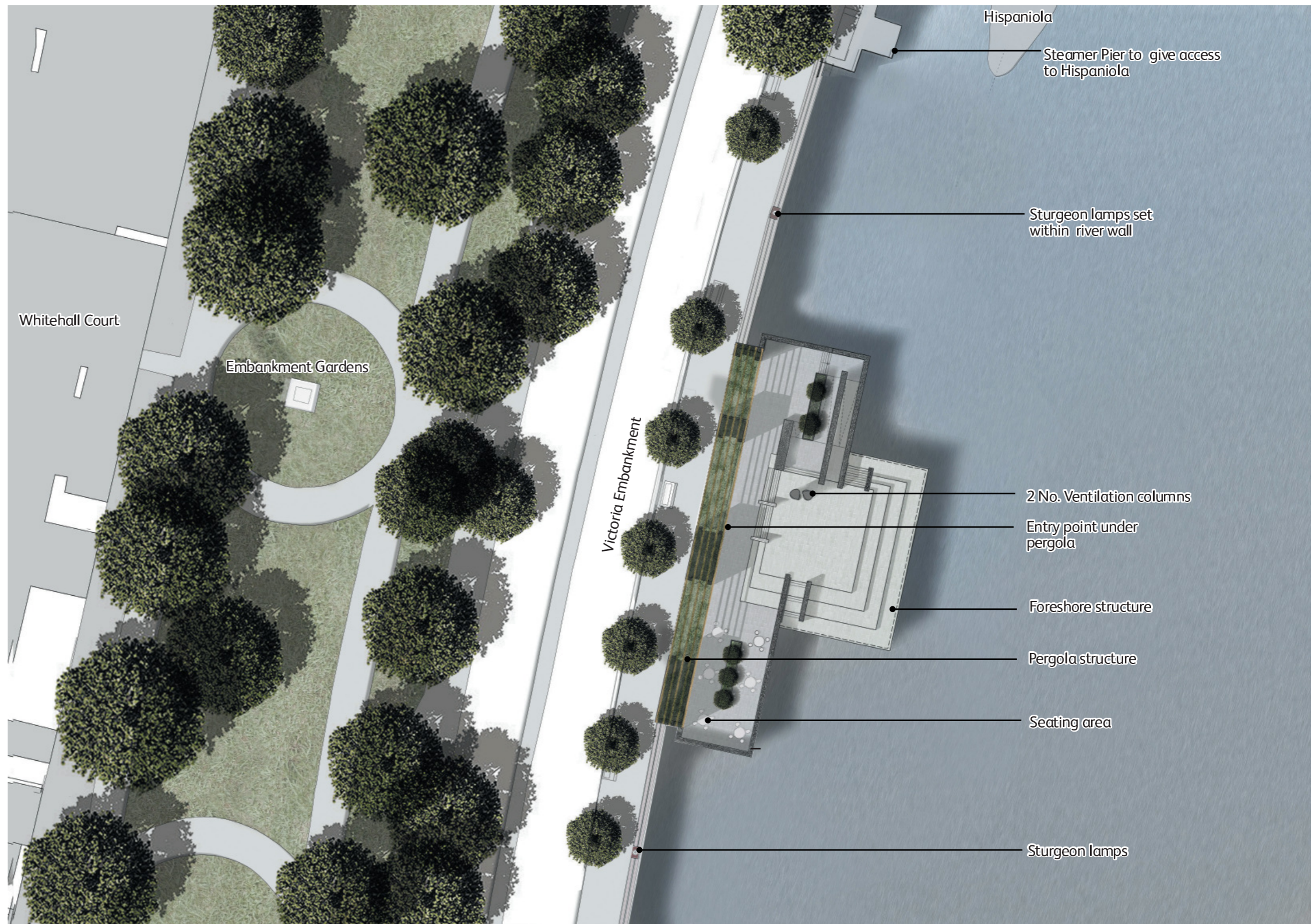


Figure 19.44: Proposed landscape plan

### Combined kiosk and canopy structure

19.4.11 The two stone clad electrical and control kiosks and the two amenity buildings/ kiosks would be combined with a canopy structure to create a threshold to the new public space. They would be arranged to balance permeability and separation between the Victoria Embankment footpath and the embankment terrace. The structure would also perform a number of important architectural functions as follows:

a. The kiosks at either end of the structure would mark the break in the listed wall and the transition to the new wall. They were inspired by the large monolithic monuments along the embankment, such as the Bazalgette Memorial and the Submariners Memorial in front of the historic steamer piers. The width of the kiosks would create a 'shadow gap' that matches the width of the foundation of the listed wall when viewed from the river.

b. The southern end kiosk would form an amenity building that could be used for commercial purposes in the future such as a café or information kiosk (by others). It would separate the embankment terrace from the busy Victoria Embankment and seating could be provided on the adjacent southern section of the terrace. The northern end kiosk could be used for storage.

c. The two kiosks between the end kiosks would be electrical and control kiosks. The kiosks would frame views of the River Thames from Whitehall Gardens and the gates of Embankment Gardens. The distance between them would be widest over the main axis from Whitehall Gardens.

d. The canopy structure would emphasise the sense of arrival into the public space and would distinguish it as new addition to the embankment. It would be planted with climbers to soften the space and provide shade. It would also frame views of the River Thames from Whitehall and Embankment Gardens.

### Embankment terrace

19.4.12 The embankment terrace would form a new linear area of public realm to transition between the combined canopy structure and the central viewing platform and river-facing terraces. The ground level of the terrace would be flush with the existing Victoria Embankment footpath in order to facilitate maintenance vehicle access. The embankment terrace would have its own identity and would be distinguished from the adjacent footpath by slender, high quality rectangular granite paving slabs. We anticipate that the embankment terrace would be less busy than the embankment footpath but busier than the river-facing terraces.

19.4.13 The terrace would be characterised by vertical planes; several low walls would project from the ground parallel to the listed wall and the kiosks to form simple, rectangular granite benches and planters. The walls would intersect with the horizontal planes of the terrace at key places. Steps and ramps would be provided up to the raised central viewing platform (a level difference of approximately 1m). The ramps would wrap around the low walls to create a playful, interesting step-free route to the platform. The main steps to the platform would be aligned with the opening to Whitehall Gardens. The steps and ramps would face west and provide a suitable meeting place.

19.4.14 The middle and northern sections of the embankment terrace would generally be oriented towards Victoria Embankment. We sought to strengthen the sense of progression away from Victoria Embankment and up to the central viewing platform.



Figure 19.45: Proposed view looking south along Victoria Embankment showing kiosk and pergola above



Figure 19.46: Proposed view looking north along Victoria Embankment showing kiosk and pergola above





Figure 19.47: Existing panoramic view from the western end of the Golden Jubilee footbridge



Figure 19.48: Proposed panoramic view from the western end of the Golden Jubilee footbridge



Figure 19.49: Existing panoramic view from the middle of the Golden Jubilee footbridge



Figure 19.50: Proposed panoramic view from the middle of the Golden Jubilee footbridge



Figure 19.51: Existing panoramic view of Victoria Embankment from the river Thames



Figure 19.52: Proposed panoramic view of Victoria Embankment from the river Thames

### River-facing terraces

19.4.15 Due to the layout and constraints of the below-ground connection culvert, the foreshore structure needs to project further into the river than necessary to accommodate the CSO drop shaft and other below-ground infrastructure. In order to break up the projection, we propose to split it into a series of horizontal terraces stepping down towards the river. The terraces would reference existing projections such as Whitehall Stairs.

19.4.16 The square terraces would fall in 400mm increments, which is a comfortable height for seating. They would be arranged slightly asymmetrically in order to maximise the area oriented towards the views to the south and east.

19.4.17 We propose to incorporate flood defences set back from the front edge of the foreshore structure instead of a wall around the edge of the structure. The central viewing platform would be raised to the level of the flood defences, which is approximately 1m above the existing ground level of the embankment. This would create a more monumental platform and an appropriate setting for the signature ventilation columns.

19.4.18 All of the terraces would sit within the floodable zone, although in a typical year only the lowest terrace would flood at the highest tides (approximately three times a year). The paving of the lower terraces would be slip-resistant and designed to shed water. Since the terraces would be floodable, a solid parapet wall is not required and open balustrading would be constructed around the lowest terrace. The balustrading would be as visually unobtrusive as possible and incorporate a comfortable handrail to lean against.

19.4.19 In future, the foreshore structure's flood defences could be raised to the levels predicted in the Environment Agency's Thames Estuary 2100 study. The river wall parapet would be raised and a new parapet constructed around the central viewing platform. At this stage, steps would be required up and over the river wall in order to access the terraces.

### River wall

19.4.20 The new section of river wall surrounding the foreshore structure would be the most prominent feature of the structure when viewed from the river, particularly at low tide. In order to break up the mass of the structure, we propose to treat the new walls around the embankment terrace and the river-facing terraces in two slightly different ways.

19.4.21 Horizontal grooves would be cut into the stonework of the walls around the river-facing terraces at relevant tide heights, like a plimsoll line on a boat. This is consistent with a project-wide motif that draws attention to rising river levels. It would also reinforce the horizontal planes of the terraces.

19.4.22 The embankment terrace section of wall features a stone parapet as part of its flood defences. Due to the ramps at the northern end of the terrace, a guarding must be raised in order to prevent people falling into the river. The open guarding would be constructed from horizontal stone planks with vertical metal supports. It would also further break up the mass of the structure when viewed from across the river. The incline of the wall here would deflect any debris back into the river as the tide falls.

19.4.23 Both walls would be clad in blocks of granite similar to the existing river wall; however, we propose to use two different tones of granite for the different sections. Both walls would be slightly canted or 'battered' back to add to the stature and scale of the structure while helping to reduce wash. The river-facing terraces section would be battered slightly more than the embankment terrace section to emphasise the stepped back nature of the structure here.

19.4.24 River wall parapets would be provided around the foreshore structure at current flood defence levels. The main public space on top of the structure would be at the same height as the flood defences. The stepped terraces around the front sides of the structure would sit below the defence level and would occasionally be flooded.



Figure 19.53: Proposed view of foreshore structure at high tide



Figure 19.54: Proposed view of foreshore structure at low tide

CSOs

19.4.25 A new CSO would discharge from the foreshore structure through metal flap valves in rectangular openings in the lower part of the new wall. It would be known as the 'Regent Street B CSO'.

19.4.26 There are two low level openings in the listed wall just to the north of the proposed foreshore structure. The northern opening currently serves the Regent Street CSO. This opening would remain open as a back-up for the new CSO and would be renamed the 'Regent Street A CSO'.

19.4.27 The southern opening served the now redundant Whitehall Place CSO. The bottom of the new wall would pass in front of this opening. In order to create a neat join between the new and existing sections of wall, we propose to block the opening with stone reclaimed from elsewhere in the listed wall.

Apron and scour protection

19.4.28 A new apron for scour protection would be formed in front of the new Regent Street B CSO and at the base of the new wall with materials such as rip rap beneath the foreshore sediments. The maximum extent of the apron is defined on the Site works parameter plan.



Figure 19.55: Example of 'rip rap' wall



Figure 19.56: Existing Regent Street CSO (right) and abandoned Whitehall Place CSO (left)

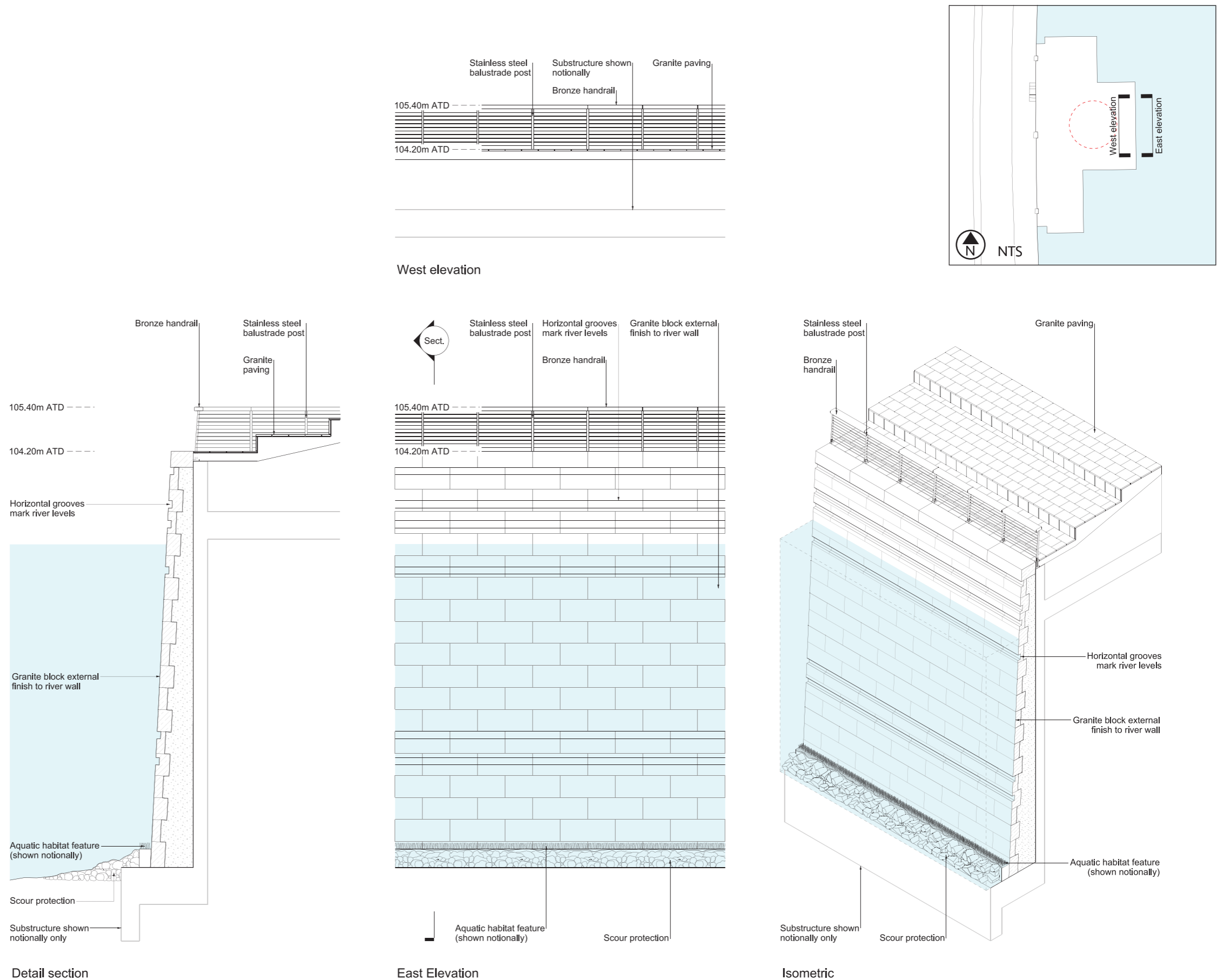


Figure 19.57: Proposed river wall (not to scale) - refer to Typical river wall design intent sheet 1 of 2 in the *Book of Plans*

### New and replacement moorings

19.4.29 The mooring of the Tattershall Castle would need to be permanently relocated, subject to obtaining the necessary operating consents and licenses to use its new mooring. The existing mooring features an array of cables and pipes hanging off the access brow and across the wall parapet. We propose to run the cables under the mooring walkway to integrate them into the mooring structure.

19.4.30 We explored a number of potential locations for the Tattershall Castle in the immediate vicinity. During construction, the mooring would be moved south near Whitehall Stairs, where the two service moorings within the site would be temporarily removed for the duration of the works. Here the Tattershall Castle would partially obscure views of the river from Horse Guards Avenue. Therefore we propose to move the mooring back north towards the foreshore structure following construction. One of the service moorings would then be reinstated. The servicing arrangements for the Tattershall Castle would remain as existing.

19.4.31 The bearings of the two existing access brows to the Tattershall Castle are bolted directly into the river-facing side of the listed wall. The steps and ramps over the wall sit on the pavement and the parapet. When the mooring is relocated, the bolts and fixings would be removed and any damaged stones replaced with stones removed from the listed wall during construction of the foreshore structure.

19.4.32 We would amend the layout of the temporary mooring in order to reduce the physical and visual impact on the listed wall. We would provide only one access brow over the wall to minimise the size of the structure on the landward side. The brow would not be bolted to the wall. A pontoon and fixed access ramps could act as a place of refuge during emergency evacuations instead of the second access brow.

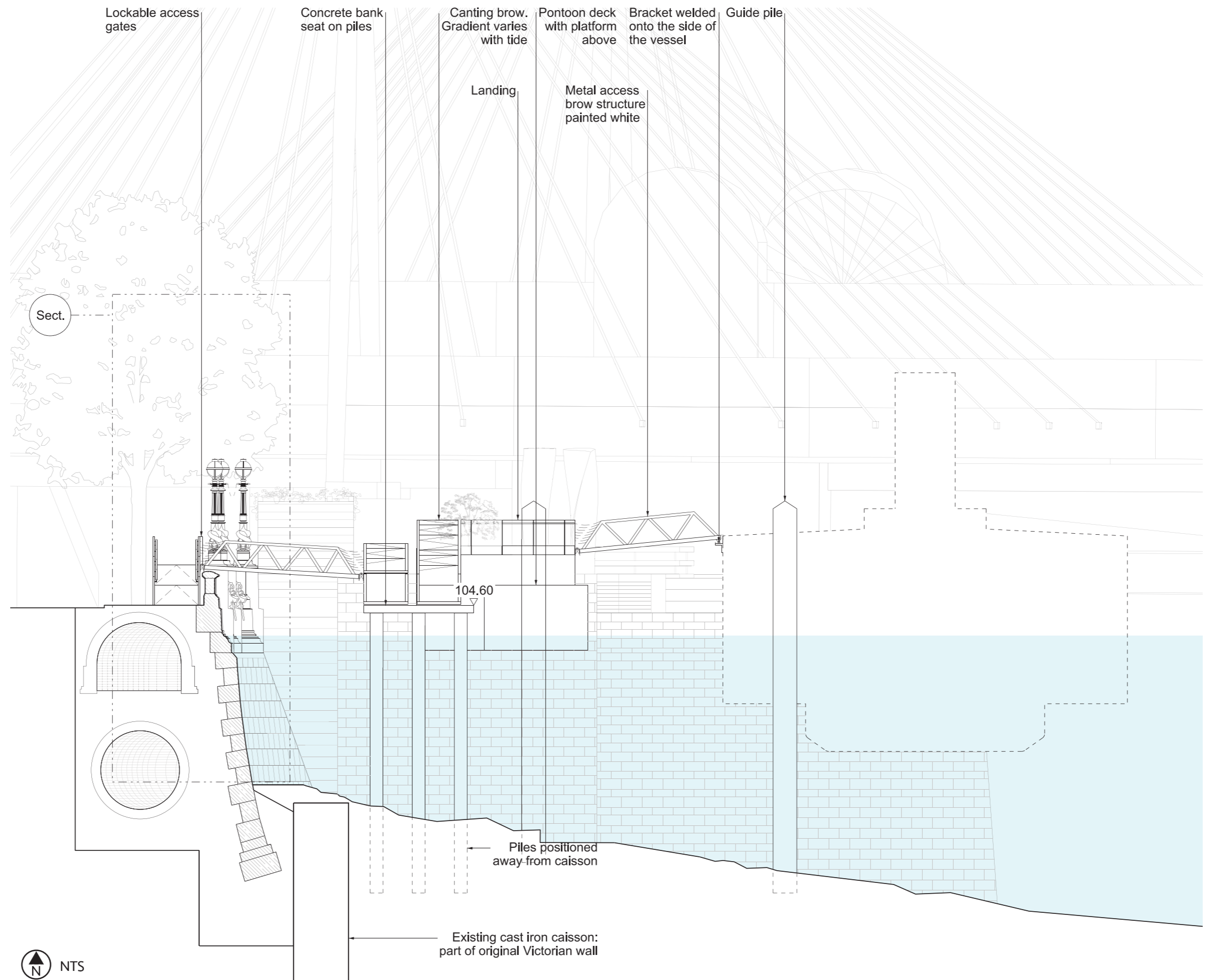


Figure 19.58: Proposed mooring access details - refer to Proposed mooring access details in the *Book of Plans*

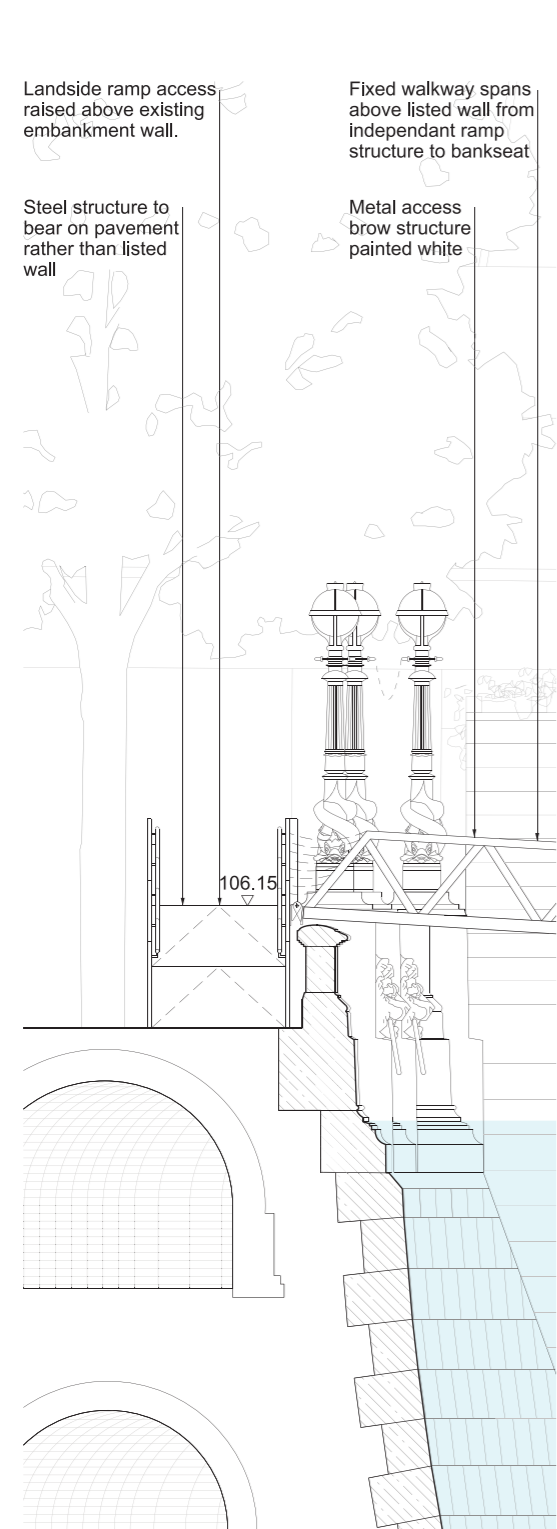


Figure 19.59: Proposed mooring access details - refer to Proposed mooring access details in the *Book of Plans*

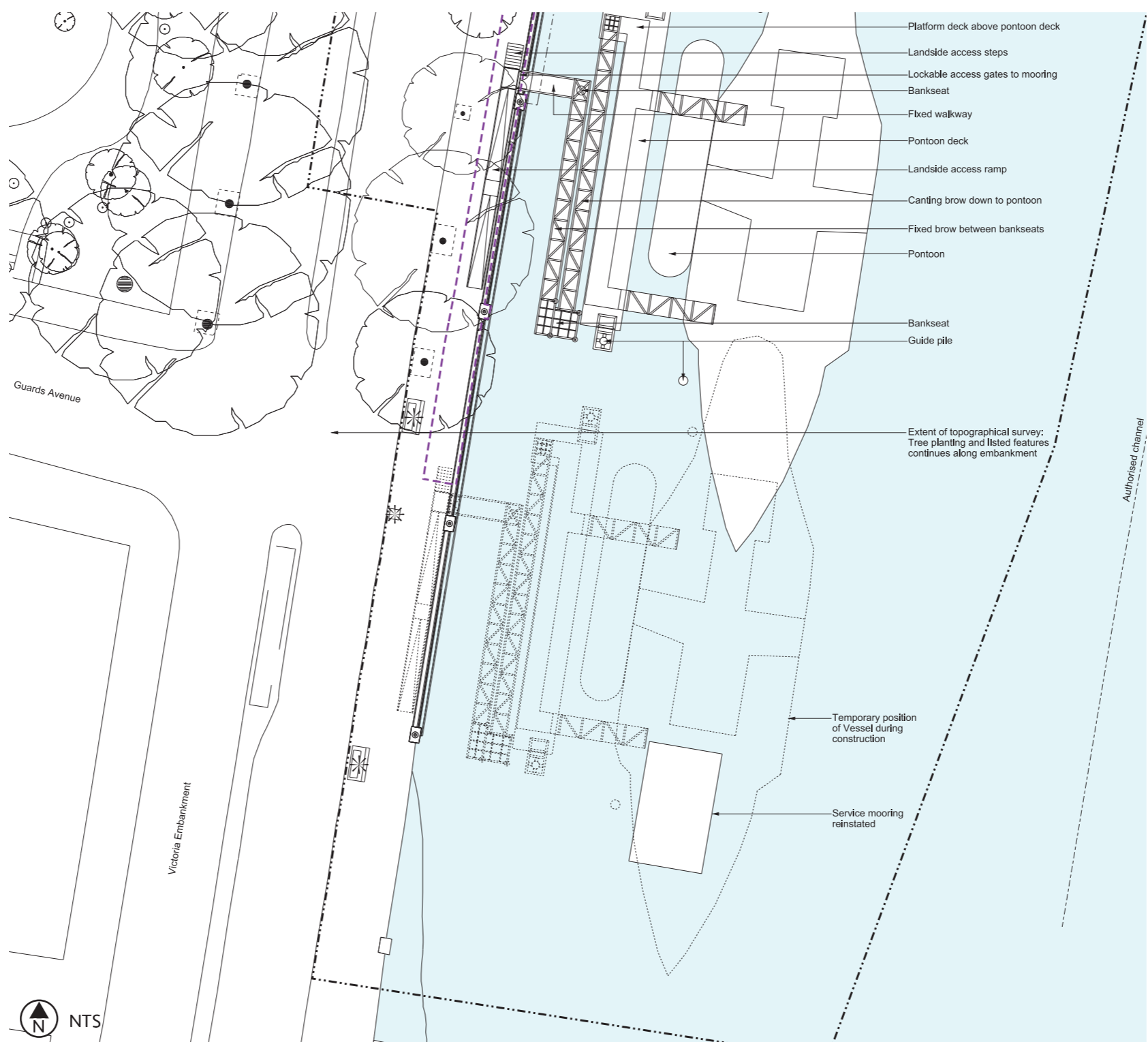


Figure 19.60: Proposed mooring access details - refer to Proposed landscape plan sheet 2 of 2 in the *Book of Plans*

19.4.33 The mooring and access ramps would lie parallel to the listed wall in order to reduce the projection of the vessel when viewed from the river. The mooring would be structurally independent of the wall. A piled 'bank seat' would be constructed in the River Thames away from the existing cast iron caissons at the base of the listed wall. A steel ramp and stair structure would bear directly onto the pavement of Victoria Embankment.

**Navigational issues**

19.4.34 The foreshore structure sits approximately 41m outside of the authorised navigation channel in the River Thames. However, Thames Clippers leaving Embankment Pier and other smaller vessels pass close by. A number of permanently moored vessels along the listed wall and the busy Embankment Pier currently act as barriers to small boat users. The structure would not project as far into the river as the Tattershall Castle at its existing mooring. Therefore we do not expect that it would significantly impact on river navigation for small or large boats.

**Historic interpretation**

19.4.35 We intend to develop a full historical interpretation strategy, which would have particular relevance to this site. There is considerable scope to include interpretive material to inform passers-by of its history.

19.4.36 At targeted consultation we presented proposals for a feature wall in the stone work of the separating kiosk structure, which could be inscribed with information on the project or the history of the River Thames. We reduced the scale of this wall in our proposals for the application; however there is ample scope to include interpretive materials here and in other places on the site.



Figure 19.61: Thames Clipper passing the site

### Integration of the functional components

19.4.37 The majority of the proposed works are below-ground structures, including:

- a. a CSO drop shaft
- b. a connection tunnel
- c. an overflow weir chamber
- d. a connection culvert
- e. CSO overflow structures and a protective foreshore apron
- f. an air treatment chamber
- g. associated hydraulic structures, culverts, pipes and ducts

19.4.38 Post construction, the following structures would be visible on the site

- a. the foreshore structure surrounded by a new section of river wall
- b. two signature ventilation columns to serve the CSO drop shaft
- c. one ventilation column to serve the overflow weir chamber
- d. two electrical and control kiosks and two amenity buildings, combined with a canopy structure.

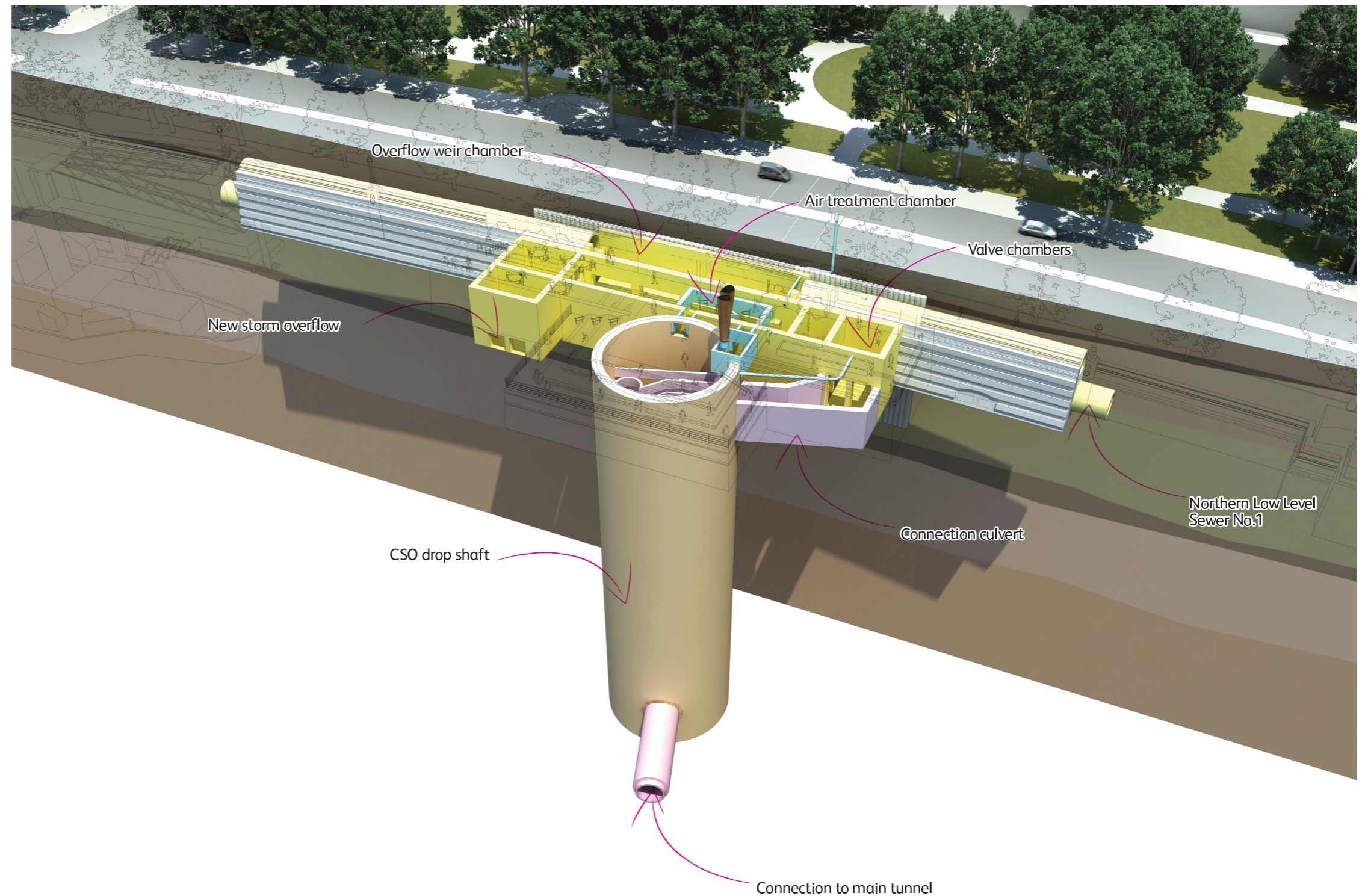


Figure 19.62: Proposed illustrative functional components diagram: below ground view



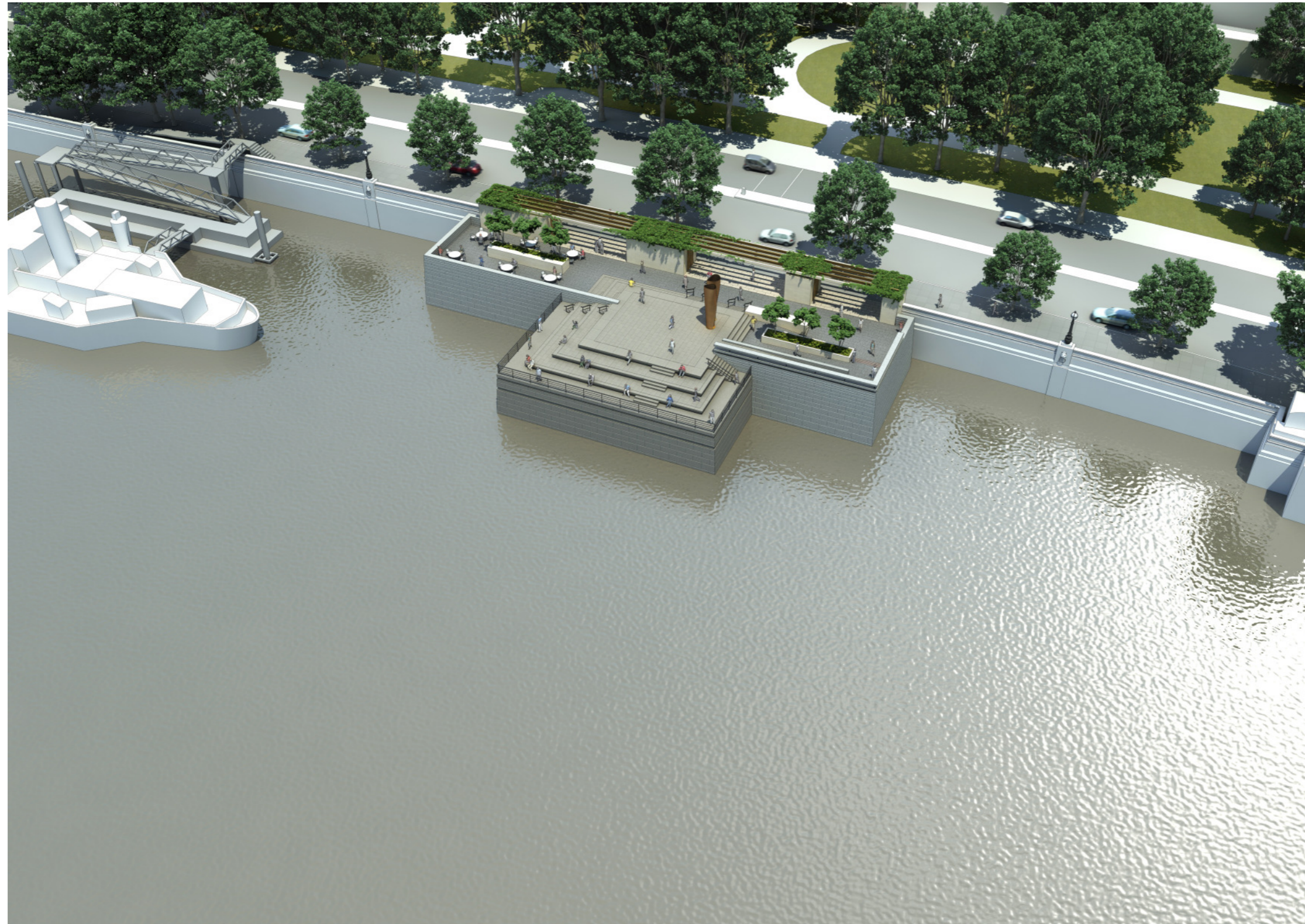


Figure 19.63: Proposed Functional components diagram: above ground view

### Ventilation columns

19.4.39 The number and size of the ventilation columns is determined by the air management requirements for the site. At Victoria Embankment Foreshore, we propose to include two columns to serve the CSO drop shaft, which would be approximately 4m to 8m high. The columns would feature the project's 'signature' design. The columns would be positioned in the southwestern corner of the raised central viewing platform on the foreshore structure to create a backdrop to the viewing area and draw people towards the river.

19.4.40 We also propose to include one smaller diameter column approximately 6m high to serve the overflow weir chamber. There is scope to position the columns in various locations, as indicated by the purple polygon on the Site works parameter plan.

### Areas of hardstanding

19.4.41 Areas of hardstanding would be included to facilitate maintenance vehicle access and incorporate access covers to the below-ground infrastructure. The access covers would be located on the foreshore structure above the northern Low Level Sewer No.1 in order to minimise the impact on the public space. Bespoke access covers would be incorporated into the high quality landscape treatment in agreement with the City of Westminster at a later stage.

Lighting design

19.4.42 The sturgeon lamp standards connected by festoon lighting beneath the London Plane trees form the 'outer edge' of the lighting along the embankment. We considered that any lighting beyond them towards the river should be subtle and understated. No light would be directed towards the Hungerford Bridge and Golden Jubilee Footbridges, or the River Thames itself in order to limit any potential effect on terrestrial or aquatic resident and migratory wildlife.

19.4.43 The spacing of the lamp standards would break around the proposed kiosk and canopy structure as it breaks around existing projections and features along the listed wall. The lamp standards, festoon lighting, catenary lights and highway lighting on the footpath would be reinstated.

19.4.44 The proposed lighting design for the public space includes concealed low-level LED lighting that would subtly accentuate the linear form of the river-facing terraces and central viewing platform. Directional lighting from in-ground luminaires and rectangular, recessed step luminaires would be provided at the edge of the steps. Concealed low-level LED strip lighting would be incorporated into the river-facing terraces and other seating areas. The proposed trees within the raised planters would be subtly up lit.

19.4.45 Rectangular recessed wall luminaires would be positioned in the walls of the kiosks and the walls adjacent to the pedestrian access ramp. In ground luminaires would also be positioned at the base of the kiosks.

19.4.46 The base of the signature ventilation columns would be highlighted with a collar of low-level LEDs that would wash the columns with a subtle light.

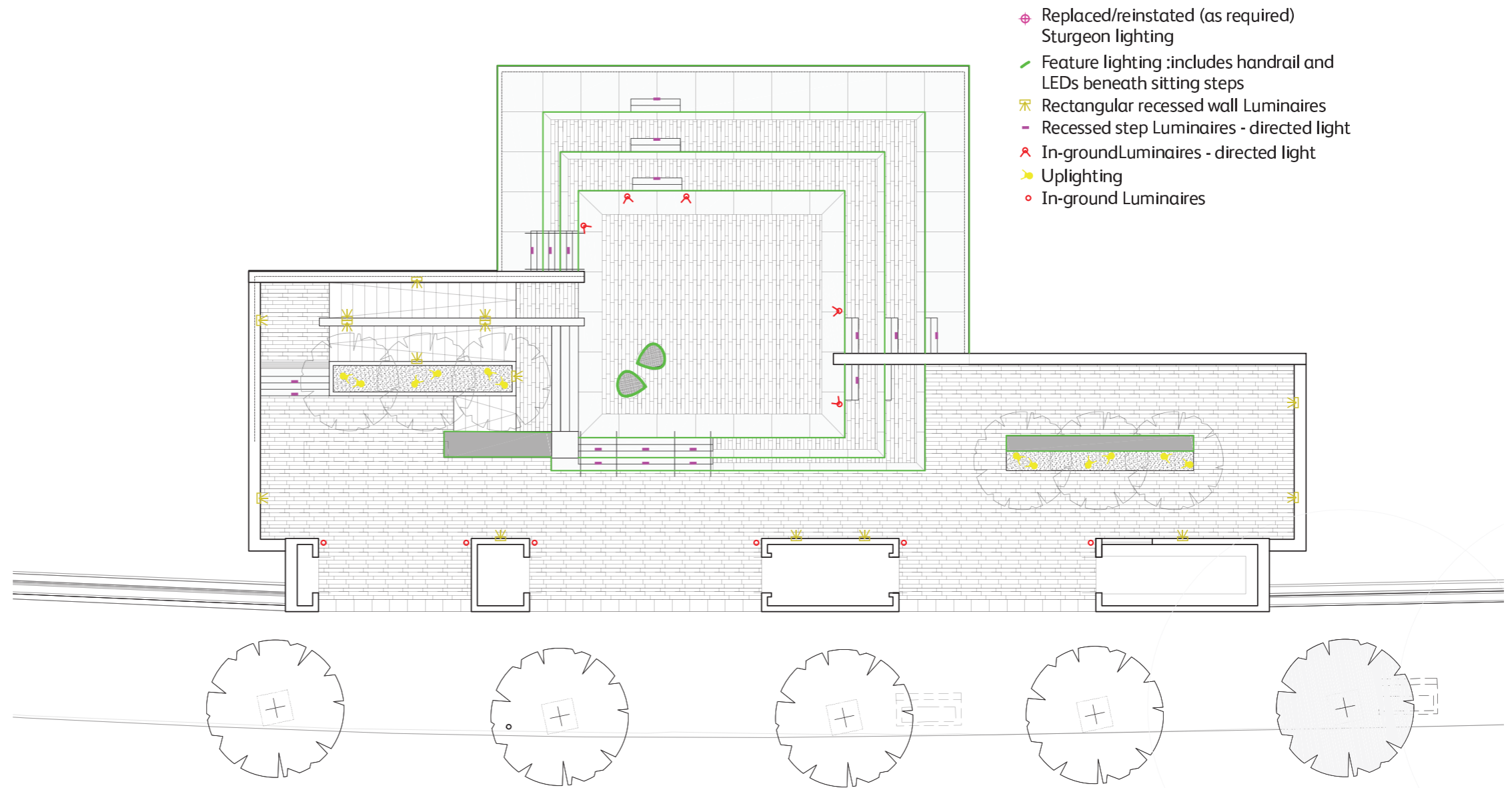


Figure 19.64: Illustrative lighting scheme



Figure 19.65: Proposed panoramic night view from the western end of the Golden Jubilee footbridge



Figure 19.66: Example of landscape lighting



Figure 19.69: Example of landscape uplighting



Figure 19.67: Recessed step Luminaires - directed light



Figure 19.68: Example of landscape lighting



Figure 19.70: Rectangular recessed Luminaires

Landscaping and appearance

Hard landscape palette

19.4.47 The proposed hard landscape materials and furniture palette comprises traditional high quality materials used in a contemporary manner. Hard surface materials would be appropriate to the setting and robust and fit-for-purpose to ensure long-term quality.

19.4.48 Lighting units, bins and other street furniture would be selected from a common palette with a specified finish. The common palette would facilitate management and maintenance and serve to unify the design.

19.4.49 The hard surfaces would be natural stone softened by timber. The predominant paving material would be granite in order to reflect the importance of the space and ensure longevity. Different sized granite paving slabs would create a cohesive surface for the central viewing platform and terraces. A paler natural sedimentary stone, such as Portland stone, would be used for the kiosks.

19.4.50 Bespoke marine-grade brass handrails are proposed for the steps and guarding. Brass would also be used for the ventilation columns and the doors and other features on the kiosks.



Figure 19.71: Example of contemporary seating and materials



Figure 19.73: Example of contemporary seating and materials



Figure 19.75: Example of fretted brass



Figure 19.76: Example of paving



Figure 19.72: Example of brass handrail



Figure 19.74: Example of contemporary seating and materials



Figure 19.77: Example of paving

### Soft landscape palette

19.4.51 The soft landscape palette comprises:

- a. semi-mature London Plane trees (*Platanus x hispanica*) to ensure historic continuity along the embankment
- b. small, multi-stemmed deciduous feature trees such as *Amelanchier lamarckii* (Snowy mespilus) to introduce seasonal variation and provide shade for the embankment terrace and planters.
- c. star jasmine (*Trachelospermum jasminoides*) for the planters for its beautiful, evergreen foliage, which takes on a bronze flush in colder winters and produces clusters of fragrant, pure white flowers from mid- to late summer.



Figure 19.78: Example of planting - Star jasmine



Figure 19.79: Example of planting - Snowy mespilus



Figure 19.80: Example of planting - semi-mature London Plane trees



Figure 19.81: Example of planting - semi-mature, multi-stem trees

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19.5 Access and movement

19.5.1 We propose to create a clear and inclusive environment that would be safe and suitable for everyone, including people with disabilities, the elderly, and children in pushchairs. Where possible we incorporated a ramp in addition to steps. The gradient of the ramp would be 1:21 and it would be surfaced with a slip-resistant material. The design of the new public space would comply with the Disability Discrimination Act. The ramps and steps would be a positive feature of the design and comply with the Approved Document Part M of the Building Regulations.

19.5.2 The river-facing terraces would be publicly accessible and steps would be provided for ambulant disabled people; however, it is not possible to provide step-free access without changing the nature of the design. We consider that all visitors could enjoy the new public space from the raised viewing platform. There would be improved visual access for wheelchair users.

19.5.3 Contrasting colours and textured materials would be selected to take account of the visually impaired, where possible; however, the design palette must also respect the historic surroundings.

19.5.4 The design of the proposed mooring for the Tattershall Castle would improve accessibility to the vessel, as the existing mooring does not provide step-free access. The access ramps would be long enough to ensure a sufficiently shallow gradient at both low and high tide. The width of the access stairs and ramps on the embankment footpath would be kept to a minimum to avoid obstructing pedestrian movements.

Thames Water access requirements

19.5.5 Access to the site would be directly from Victoria Embankment between replacement trees and across the section of the Thames Path adjacent to the proposed site. The Thames Path would likely require temporary closure and diversion during inspections and maintenance.

19.5.6 Once the project is operational, it is anticipated that Thames Water personnel would visit the site approximately every three to six months to inspect and carry out maintenance of the electrical and control, ventilation and below-ground equipment. This would likely involve a visit by personnel in a small van during normal working hours and may take several hours.

19.5.7 It is anticipated that a major internal inspection of the tunnel system and underground structures would be required once every ten years. This process would likely involve a small team of inspection staff and support crew and two mobile cranes to lower the team into the CSO drop shaft. The inspection would be carried out during normal working hours and would likely take several weeks. A crane may need to sit positioned on the foreshore structure and some maintenance vehicles would need to park in the coach bays and on the adjacent footpath.

19.5.8 Thames Water may also need to visit the site for unplanned maintenance or repairs, for example, in the event of a blockage or an equipment failure. Such a visit may require the use of mobile cranes and vans.

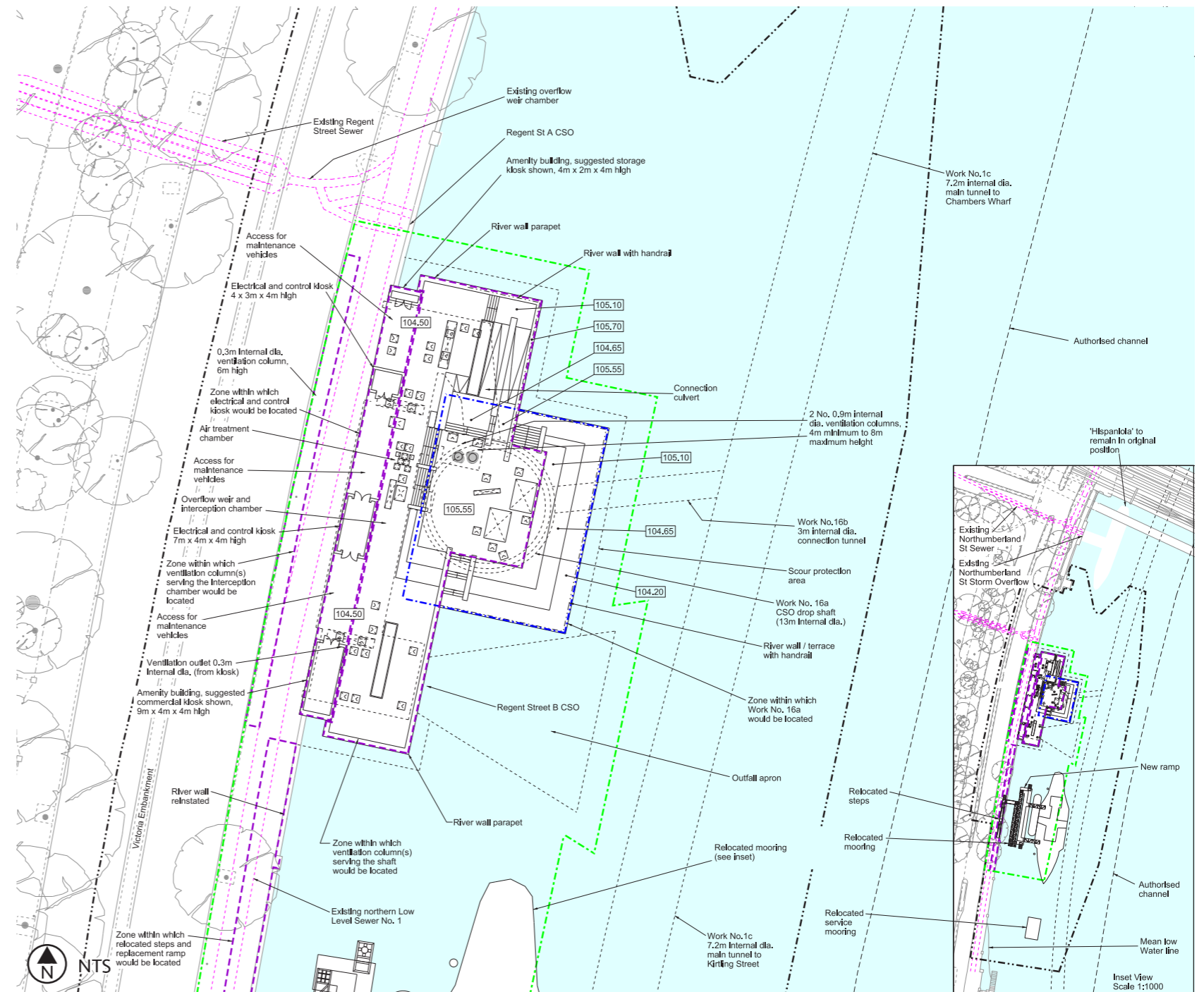


Figure 19.82: Permanent works layout - refer to Permanent works layout in the *Book of Plans*

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