

**Thames Tideway Tunnel**  
Thames Water Utilities Limited



# Application for Development Consent

Application Reference Number: WWO10001

## Heritage Statement

Doc Ref: **5.3**

### Appendix L

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

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**Thames  
Tideway Tunnel**



Creating a cleaner, healthier River Thames

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# Thames Tideway Tunnel

## Heritage Statement

### Appendix L: Chambers Wharf

#### List of contents

	Page number
<b>L.1 Site location and context</b> .....	<b>1</b>
Historical context .....	<b>2</b>
<b>L.2 Relevant local heritage policy and guidance</b> .....	<b>3</b>
<b>L.3 Description of heritage assets and significance summary</b> .....	<b>6</b>
Chambers Wharf and associated dolphin .....	6
29 Bermondsey Wall West and associated dolphin.....	6
33 Bermondsey Wall West .....	7
St Saviours Dock Conservation Area .....	8
East Lane Stairs .....	9
Wapping Pierhead Conservation Area .....	9
Tower Bridge and Tower Bridge Conservation Area .....	9
Edward III's Rotherhithe Conservation Area.....	10
Riverside School.....	10
48 Farncombe Street.....	10
Archaeology.....	10
Significance summary .....	11
<b>L.4 Description of proposals and required heritage consents</b> .....	<b>12</b>
Temporary construction works.....	12
Permanent works.....	12
Chambers Wharf .....	13
29 Bermondsey Wall West and associated dolphin.....	14
33 Bermondsey Wall West .....	14
St Saviours Dock Conservation Area .....	14
East Lane Stairs .....	15
Wapping Pierhead Conservation Area .....	15
Tower Bridge and Tower Bridge Conservation Area .....	15
Edward III's Rotherhithe Conservation Area.....	15
Riverside School.....	16
48 Farncombe Street.....	16

Archaeology.....	16
<b>L.5 Heritage design considerations.....</b>	<b>16</b>
<b>L.6 Mitigation measures .....</b>	<b>17</b>
<b>L.7 Assessment of effects .....</b>	<b>18</b>
Chambers Wharf and associated dolphin.....	19
29 Bermondsey Wall West and associated dolphin.....	19
33 Bermondsey Wall West .....	19
St Saviours Dock Conservation Area .....	19
East Lane Stairs .....	19
Wapping Pierhead Conservation Area .....	20
Tower Bridge and Tower Bridge Conservation Area .....	20
Edward III’s Rotherhithe Conservation Area.....	20
Riverside School.....	20
48 Farncombe Street.....	21
Archaeology.....	21
Assessment in relation to policy .....	21
<b>L.8 Conclusion.....</b>	<b>22</b>

### List of figures

	<b>Page number</b>
Figure L.1 View east along Bermondsey Wall West towards the site (standard lens)	7
Figure L.2 View east towards the site from St Saviours Dock Conservation Area (standard lens) .....	8

### List of tables

	<b>Page number</b>
Table L.1 Significance of heritage assets at Chambers Wharf.....	11
Table L.2 Drawings relating to heritage assets at Chambers Wharf.....	13
Table L.3 Historic environment: Gazetteer of known heritage assets shown on the historic environment features map .....	23
Table L.4 List of drawings in order.....	35

## Appendix L: Chambers Wharf

### L.1 Site location and context

- L.1.1 The proposed development site lies in the London Borough of Southwark. The site itself comprises previously developed land, an area of the River Thames foreshore and two small areas of roadway.
- L.1.2 The site is rectangular in shape and includes a mid-20th century concrete wharf on concrete piles that extends into the foreshore of the River Thames. An associated timber 'dolphin' structure that is in poor condition is located in the river to the east of the wharf.
- L.1.3 Two small areas of highway are required: the first is located at the junction of Chambers Street and Bevington Street where a pedestrian crossing needs to be relocated, and the second comprises the full length of East Lane, which is required for the diversion of utilities.
- L.1.4 The site has been cleared and is currently hoarded off while awaiting construction of an approved residential development. The residential development comprises mixed use residential development comprising the construction of six residential buildings (four to the north of Chambers Street and two to the south). This would provide 587 residential units and 275m<sup>2</sup> of flexible Class A/B1 floorspace at ground-floor level along Chambers Street; 203m<sup>2</sup> of Class D1 floorspace along Llewellyn Street; basement parking; service and access roads; hard and soft landscaping works; and other incidental works. The planning approval also comprises removal of the wharf deck and strengthening/replacement of the river wall.
- L.1.5 The site is designated by the London Borough of Southwark as an Archaeological Priority Zone and falls within the Thames Policy Area. It does not fall within a conservation area.
- L.1.6 The site is bounded by the River Thames to the north, Loftie Street to the east, Chambers Street to the south and buildings backing onto the site from East Lane and Bermondsey Wall West to the west. The Thames Path currently runs around the site along Chambers Street and Loftie Street.
- L.1.7 The area surrounding Chambers Wharf comprises a mix of uses. On the riverbank to the north of Loftie Street sit two three-storey residential blocks in Fountain Green Square.
- L.1.8 To the east of the site along Loftie Street and Bermondsey Wall East the uses are predominantly residential. The area features brick terrace houses and blocks of flats two to four storeys high.
- L.1.9 The Riverside Primary School and its grounds and a residential development of two-storey buildings lie to the southeast of the site on Bevington Street. Opposite these properties sit five to six-storey blocks of flats set within spacious, informally landscaped green spaces. More residential properties extend to the southeast including some commercial frontages.

- L.1.10 An area of cleared brownfield land, which is subject to the planning permission for residential development lies to the south across Chambers Street.
- L.1.11 To the southwest is St Michael's Catholic College, which was recently redeveloped with buildings up to three storeys high with associated access, parking and amenity space.
- L.1.12 Luna House and Axis Court, residential blocks between six and eight storeys high, adjoin the western boundary of the site on East Lane. Beyond these buildings to the west is the St Saviours Dock Conservation Area, which contains a mix of converted warehouses and new buildings of a similar style of between four and eight storeys high. Land uses in this area are predominantly residential with a mix of commercial uses usually located on the lower levels. The Tower Bridge Conservation Area and Tower Bridge lies further to the west.

### Historical context

- L.1.13 The site lies on the alluvial floodplain of the River Thames, approximately 150m to the west of the northern tip of a raised sandy area known as the Bermondsey Eyot. During the early prehistoric period (700,000 BC to 2,000 BC), the River Thames was made up of braided channels across a broad floodplain. A number of Mesolithic and Neolithic finds have been recovered from the foreshore section of the site. Early prehistoric deposits may evidence activity on another eyot, which was inundated in the later prehistoric period (2,000 BC to 43 AD) when sea levels rose. There have been fewer Bronze Age and Iron Age finds at the site.
- L.1.14 In the early medieval period (AD410 to 1066), the site lay in an area of intertidal marshland prone to flooding. It may have been used for pasture and there is evidence of associated reclamation and drainage of land, such as a clay-filled channel recorded 100m to the east of the site.
- L.1.15 It is likely that large areas of marshland were reclaimed during the later medieval period (AD 1066 to 1485), which involved constructing drainage channels and embankments. A later medieval or post-medieval timber revetment/structure, a fish trap, a dam and an embankment were recorded on the site itself. Another medieval embankment was recorded at Adlarde's Wharf (approximately 70m west of the site), and a possible barge bed and various postholes, which were perhaps part of a fish trap, were recorded at Bermondsey Wall (approximately 10m to the west). During this period, Bermondsey and Rotherhithe ('Redriff') became a centre for shipbuilding and maritime industry.
- L.1.16 In the post-medieval period (AD 1485 to the present day), the waterfront was occupied by docks, yards and buildings that served various nautical trades. The land beyond the riverfront to the south remained open fields and market gardens until the 19th century.
- L.1.17 By the late 19th century, the riverfront at the site was entirely occupied by warehouses. A number of roads were constructed to the south of the site and the immediate vicinity became heavily built up. The complex of buildings that forms Chambers Wharf was built in the 20th century and its wharf was constructed on piles over a reclaimed area of the foreshore.

For the most part, this layout survives to the present day, although various buildings at the western and eastern ends of the riverfront were demolished.

## L.2 Relevant local heritage policy and guidance

- L.2.1 As this application for development consent relates to a Nationally Significant Infrastructure Project the NPS is the primary basis for decision making on all planning issues raised by the application. When it comes to assessing the acceptability of the application proposals it is the NPS that sets the relevant criteria to be applied. However, the project has been developed in the knowledge of local planning policies and, particularly, local land use planning designations.
- L.2.2 The London Borough of Southwark's *Local Development Framework* comprises the *Core Strategy* (April 2011) and the saved policies from the *Southwark Plan* (adopted 2007), as well as guidance in the *St Saviours Dock Conservation Area Appraisal*.
- L.2.3 Section 4 of the *Core Strategy* (Spatial planning to improve places) states: "*We will encourage developments to focus on the strengths of places that make the different areas of the borough distinctive and respect local and historic context*".
- L.2.4 *Core Strategy* Policy 12 (Design and conservation) states that: "*Development will achieve the highest possible standards of design for buildings and public spaces to help create attractive and distinctive places*".
- L.2.5 The *Core Strategy* also states that developments within the Thames Policy Area "*will be expected to be carefully designed to protect and enhance the River environment and the important contribution it makes to both local people and all of London. This includes its contribution to the history of Southwark and London*" (p. 105).
- L.2.6 The *Southwark Plan* includes a number of saved policies:
- a. Policy 3.15 (Conservation of the Historic Environment) states that: "*Development should preserve or enhance the special interest or historic character or appearance of buildings or areas of historical or architectural significance. Planning proposals that have an adverse effect on the historic environment will not be permitted. The character and appearance of Conservation Areas should be recognised and respected in any new development within these areas*".
  - b. Policy 3.16 (Conservation Areas) states that: "*Within Conservation Areas, development should preserve or enhance the character or appearance of the area [...] Planning permission will be granted for new development, including the extension or alteration of existing buildings provided that the proposals:*
    - i "*Respect the context of the Conservation Area, having regard to the content of Conservation Area Appraisals and other adopted Supplementary Planning Guidance / Documents; and*

- ii *“Use high quality materials that complement and enhance the Conservation Area; and*
  - iii *“Do not involve the loss of existing traditional features of interest which make a positive contribution to the character or appearance of the Conservation Area; and*
  - iv *“Do not introduce design details or features that are out of character with the area, such as the use of windows and doors made of aluminium, uPVC or other non-traditional materials. Where appropriate development in Conservation Areas may include the use of modern materials or innovative techniques only where it can be demonstrated in a design and access statement that this will preserve or enhance the character or appearance of the Conservation Area”.*
- c. In relation to demolition within conservation areas, it also states that: *“there will be a general presumption in favour of retaining buildings that contribute positively to the character or appearance of the Conservation Area. Planning permission will not be granted for proposals that involve the demolition or substantial demolition of a building that contributes positively to the character or appearance of the Conservation Area, unless, in accordance with PPG15 or any subsequent amendments, it can be demonstrated that:*
- i *“The costs of repairs and maintenance would not be justified, when assessed against the importance of the building and the value derived from its continued use, providing that the building has not been deliberately neglected; and*
  - ii *“Real efforts have been made to continue the current use or find a viable alternative use for the building; and*
  - iii *“There will be substantial planning benefits for the community from redevelopment which would decisively outweigh loss from the resulting demolition; and*
  - iv *“The replacement development will preserve or enhance the character or appearance of the conservation area and has been granted planning permission. Implementation Submission of details demonstrating that a contract for the construction of the replacement development has been let will be required prior to implementation of the development.*
- d. It further states that: *“The council is keen to encourage a high quality of design in Conservation Areas. This may include the use of modern materials or innovative techniques on new developments as they can preserve or enhance the character or appearance of the area”.* (p.46)
- e. Policy 3.18 (Setting of Listed Buildings, Conservation Areas and World Heritage Sites) states that: *“Permission will not be granted for developments that would not preserve or enhance:*
- i *The immediate or wider setting of a listed building; or*
  - ii *An important view(s) of a listed building; or*

- iii The setting of the Conservation Area; or iv. Views into or out of a Conservation Area; or*
- iv The setting of a World Heritage Site; or*
- v Important views of /or from a World Heritage Site”.*

f. Policy 3.19 (Archaeology) states that: *“Planning applications affecting sites within Archaeological Priority Zones (APZs) [...] shall be accompanied by an archaeological assessment and evaluation of the site, including the impact of the proposed development. There is a presumption in favour of preservation in situ, to protect and safeguard archaeological remains of national importance, including scheduled monuments and their settings. The in situ preservation of archaeological remains of local importance will also be sought, unless the importance of the development outweighs the local value of the remains. If planning permission is granted to develop any site where there are archaeological remains or there is good reason to believe that such remains exist, conditions will be attached to secure the excavation and recording or preservation in whole or in part, if justified, before development begins”.*

L.2.7 The *St Saviours Dock Conservation Area Appraisal* notes, concerning development within the conservation area, that: *“Equally important are townscape issues of mass, overall form, building placement relative to the public realm, creation and preservation of views and vistas, quality of boundary treatments, and visual impacts of utility areas such as parking, servicing and site access”* (p. 57).

### **L.3 Description of heritage assets and significance summary**

L.3.1 The site contains no designated heritage assets. There are a number of heritage assets (as defined in the NPS, para. 4.10.2) nearby. These heritage assets are illustrated in the Historic environment features map and the Conservation areas map. The numbering on the Historic environment features map refers to the gazetteer in which the heritage assets are described in the *Environmental Statement*, which accompanies the application (Vol 20, Appendix E.1). The gazetteer is provided at the end of this appendix.

L.3.2 The Heritage assets include:

- a. Chambers Wharf and associated dolphin
- b. 29 Bermondsey Wall West and associated dolphin
- c. 33 Bermondsey Wall West
- d. St Saviours Dock Conservation Area
- e. East Lane Stairs
- f. Wapping Pierhead Conservation Area
- g. Tower Bridge and Tower Bridge Conservation Area
- h. Edward III's Rotherhithe Conservation Area
- i. archaeological potential.

#### **Chambers Wharf and associated dolphin**

L.3.3 The buildings that formerly stood on Chambers Wharf have now been demolished. The river wall in this area is a multi-period structure that mostly comprises sections of brick and concrete. The concrete wharf along the length of the river frontage was constructed in the mid-20th century and there is an associated surviving dolphin to the northeast. The significance of the wharf is negligible.

#### **29 Bermondsey Wall West and associated dolphin**

L.3.4 29 Bermondsey Wall West is a Grade II listed five-storey, three-bay stock brick warehouse on the eastern edge of St Saviours Dock Conservation Area (refer to the Historic environment features map). It was built in circa 1865/70 as part of a group of similar buildings in the area.

L.3.5 The significance of the building relates to its age and on-going contribution to the narrow Bermondsey Wall West and to the riverside character of dense warehousing, which evidences London's commercial history.

L.3.6 The dolphin associated with the building is located in front of the wharf in the foreshore of the River Thames. Its former use was to aid the management and docking of ships.

### 33 Bermondsey Wall West

- L.3.7 This building is a Grade II listed warehouse and granary located on the riverfront to the west of the proposed site. Dated to 1866, it is constructed of London stock brick. It features a hipped slate roof with skylights, partly surmounted by timber clerestory, possibly for housing a pneumatic grain intake.
- L.3.8 As part of a group of similar buildings in the area, the significance of Bermondsey Wall West relates to its age and on-going contribution to the riverside character of dense warehousing, which evidences London's commercial history.

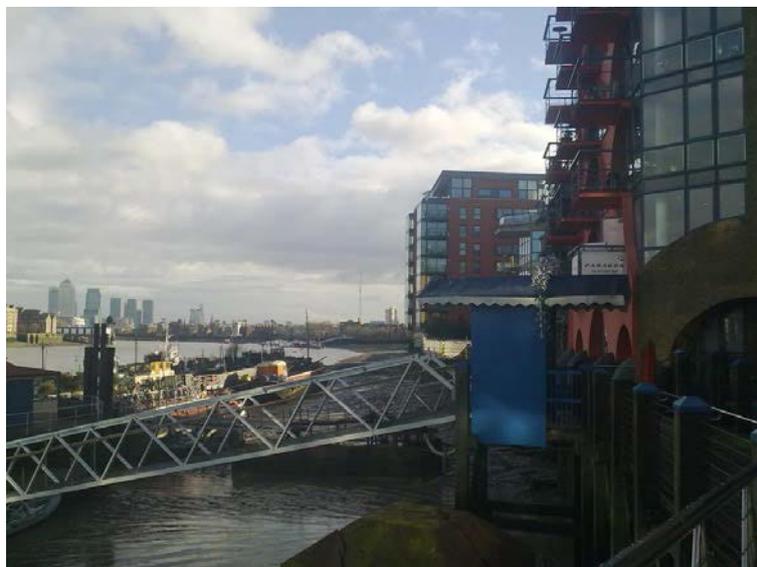
**Figure L.1 View east along Bermondsey Wall West towards the site (standard lens)**



## St Saviours Dock Conservation Area

- L.3.9 St Saviours Dock Conservation Area, as designated by the London Borough of Southwark, centres on St Saviours Dock, which extends inland and is lined with dense warehousing (refer to the Conservation areas map). It also covers the narrow streets to the east of the dock, including Bermondsey Wall West, where dense warehousing creates a sense of enclosure and the body of buildings fronts directly, or almost directly, onto the River Thames. This creates a strong urban edge that is emphasised by the regularity of the mostly yellow stock brick facades. The setting of the conservation area is defined by its relationship to the River Thames and the warehousing.
- L.3.10 The typical narrow footprint of the buildings ranged along the River Thames is an early feature, possibly late-medieval in origin, and is found elsewhere along the south bank of the river. The narrow streets behind the river frontage resulted from the need for warehousing to service the large volume of international trade and the incremental reclamation of land from the river.
- L.3.11 Just beyond the eastern edge of the conservation area are two large modern buildings on either side of Bermondsey Wall West; the northern building steps out from the alignment of the listed 33 Bermondsey Wall West. This effectively screens the proposed site from view within the eastern part of the conservation area, except along Bermondsey Wall West (refer to Figure L.1).

**Figure L.2 View east towards the site from St Saviours Dock Conservation Area (standard lens)**



### **East Lane Stairs**

- L.3.12 The Grade II listed East Lane Stairs consist of a set of stone steps leading down to the River Thames to the west of the site. The date of the stairs is uncertain; they seem to appear on Rocque's map of 1746 and are visible on a map from 1799. Therefore they may predate many of the surrounding warehouses and wharf buildings.
- L.3.13 The significance of the stairs is related to the development of the area around commerce and trade. They have group historical, evidential and aesthetic value with the former riverside docks and wharves. They have no inter-visibility with the proposed site.

### **Wapping Pierhead Conservation Area**

- L.3.14 The Wapping Pierhead Conservation Area lies in the London Borough of Tower Hamlets approximately 300m to the northeast of the site (refer to the Conservation areas map). The conservation area is characterised by 19th century industrial warehouses and residential buildings built immediately on the river frontage.
- L.3.15 The conservation area is a heritage asset of high significance; the river walls, dock entrances, jetties, piles and timber whalings evidence the unique history of London's dockland industry with a distinctive architectural waterside legacy.
- L.3.16 The direct views towards the site from the conservation area are of low significance; however, the site makes a minor contribution to its setting. The views of the historic warehouses in the St Saviours Dock and Tower Bridge Conservation Areas, views of Tower Bridge in the distance, and views to the east towards Edward III's Rotherhithe Conservation Area and St Mary's Rotherhithe Conservation Area are more significant.

### **Tower Bridge and Tower Bridge Conservation Area**

- L.3.17 The Grade I listed Tower Bridge lies approximately 700m to the west of the site. The bridge is an internationally recognised landmark and is iconic of London and the UK. The setting of the bridge is defined by the broad expanse of the River Thames, the Tower of London and the former industrial buildings along the southern side of the river within the Tower Bridge Conservation Area. The proposed site is visible from the bridge in the distance and makes a minimal contribution to its setting.
- L.3.18 The Tower Bridge Conservation Area includes the southern half of Tower Bridge and the large scale 19th- and early 20th-century former warehouses along Shad Thames, which have been converted to modern residential apartments and retail units (refer to the Conservation areas map).
- L.3.19 The river frontage in the conservation area continues the line and character of the St Saviours Dock Conservation Area, although the buildings are generally larger. From beyond the western end of the site, the warehouses appear obliquely as a solid wall of buildings lining the River Thames. The concrete wharf on the site projects in front of this view.

### **Edward III's Rotherhithe Conservation Area**

- L.3.20 Edward III's Rotherhithe Conservation Area is located approximately 350m to the east of the site (refer to the Conservation areas map). It covers King's Stairs Gardens and its river frontage, King Edward III's manor house (a scheduled monument), as well as a further area of the riverfront until 50m to the west of the Angel public house.
- L.3.21 The conservation area is a heritage asset of high significance, which derives mainly from the archaeology of Edward III's manor house. The gardens were laid out from the 1940s to 1980s by clearing various buildings. The riverside setting of the conservation area makes a moderate contribution to its significance and the proposed site's contribution is minimal.

### **Riverside School**

- L.3.22 Riverside School is a Grade II listed School Board school that was built 1874; it is located around a corner from the site. The school is entirely surrounded by modern development and, other than elements of the historic street pattern, it has entirely lost its pre-late 20th century context. Its setting therefore contributes little to its significance, other than providing views of the building.

### **48 Farncombe Street**

- L.3.23 48 Farncombe Street is the Grade II listed former offices of a sewer pumping station built 1822 that has now been demolished. It is a two-storey, wedge-shaped corner building with a three-bay front. It predates the present sewerage system from 1858 and was constructed during the first phase of dock expansion in the area.
- L.3.24 Views towards the building are significant. The site is visible from the building and the demolitions on the site to date have already removed all the elements within the site that contributed to its setting.

### **Archaeology**

- L.3.25 The site lies within the Borough, Bermondsey and River Archaeological Priority Zone. A number of archaeological finds have been recorded from the foreshore area within the site.
- L.3.26 The potential for archaeological remain, in particular waterlogged palaeoenvironmental remains, is likely to be high on the higher part of the foreshore close to the river wall. The potential decreases towards the main channel. The foreshore has been protected from dredging by the existing concrete wharf and is thought to be one of the best-preserved foreshore sequences in London, representing a series of former landscapes within the floodplain of the River Thames. In view of the continuing discovery of prehistoric horizons and the remains of prehistoric trees on the foreshore, it is clear that no modern dredging has been carried out within the site.
- L.3.27 The extent of past and current fluvial erosion is yet to be established. It is likely that scouring action due to the dynamic position of the site within the intertidal zone, along with erosion from passing river traffic has affected archaeological deposits and/or structures. However, the survival of other

features on the foreshore noted by past and recent surveys suggests that levels of erosion have been relatively low.

### Significance summary

- L.3.28 An assessment of the significance of the heritage assets and the potential effects of the proposed works at this site is set out in the *Environmental Statement* (Vol 20). The assessment includes a full statement of significance for built heritage and buried archaeological assets at the site, which is summarised below in Table L.1.

**Table L.1 Significance of heritage assets at Chambers Wharf**

Heritage asset	Heritage significance	Reason for significance
Chambers Wharf and associated dolphin	Negligible	A large post-war wharf of negligible historical significance, with an associated dolphin of little significance other than its association with the most recent phase of international shipping in London.
29 Bermondsey Wall West and associated dolphin	High	Significant as part of a group. A well-preserved industrial building and associated mooring dolphin that evidence aspects of the historic character of the St Saviours Dock Conservation Area, including the use of the river for trade, early street layouts and property boundaries.
33 Bermondsey Wall West	High	Significant as part of a group. A well-preserved industrial building that evidences aspects of the historic character of the St Saviours Dock Conservation Area, namely the early street layout and property boundaries.
Saint Saviour's Dock Conservation Area	High	An area with many historic buildings that reflect the former importance of trade and maritime activity in this area. Much of the 19th century street layout and property boundaries survive. The dock itself is of particular significance.
East Lane Stairs	High	The stairs evidence the long use of the river in this area.
Wapping Pierhead Conservation Area	High	An area of historic warehousing and wharfs that evidences the area's commercial heritage and development of international trade.
Tower Bridge and Tower Bridge Conservation Area	High	Tower Bridge is an internationally recognised icon of London and an important piece of 19th century engineering. Tower Bridge Conservation Area is an area of historic warehousing and wharfs that evidences London's status as a world city and commercial hub.
Edward III's Rotherhithe Conservation Area	High	The significance of the conservation area derives mainly from the archaeology of Edward III's manor house (scheduled monument LON

Heritage asset	Heritage significance	Reason for significance
		164).
Riverside School	High	An early School Board school, dating to 1874.
48 Farncombe Street	High	Significance derives from architecture and small scale, which is representative of the first phase of dock expansion, and its association with an early sewage pumping station.

## L.4 Description of proposals and required heritage consents

L.4.1 A summary of the proposed temporary and permanent works at Chambers Wharf is set out below.

### Temporary construction works

L.4.2 A temporary worksite would be required in order to receive the main tunnel drive from Kirtling Street, drive the tunnel to Abbey Mills Pumping Station and receive the Greenwich connection tunnel. The worksite would involve the erection of hoardings, site and welfare facilities and a large noise enclosure over the shaft and gantry crane. Workshops, stores, a slurry processing plant, a grout batching plant, excavated material storage areas, and a tunnelling shed would also be constructed on pad foundations.

L.4.3 The concrete wharf would be demolished and a temporary sheet-piled cofferdam and temporary wharf structure constructed. The works would require the use of cranes, a piling rig, a jack up barge and other tall plant.

L.4.4 Following construction, the river wall and flood defences would be reinstated and the temporary cofferdam and wharf would be removed.

### Permanent works

L.4.5 Post construction, the visible structures on the site would include three ventilation columns (up to 8m high), a rectangular electrical and control kiosk (approximately 2.5m high) and a new river wall with built-in flood defences.

L.4.6 The evolution of the design of the permanent works and the alternatives considered are set out in the *Design and Access Statement*, which accompanies the application. The design proposals are illustrated in the drawings within the *Book of Plans* and were developed in line with the *Design Principles* and the *Code of Construction Practice*, which also accompany the application, to minimise the impact of the proposed works and structures on their surroundings, in line with relevant national, regional and local policies.

L.4.7 The aspects of the proposed works that would affect the nearby heritage assets are set out below. The proposals that would normally require Listed Building Consent or Conservation Area Consent are also identified.

- L.4.8 Refer to the Historic environment features map, the Conservation areas map and the drawings listed in 13Table L.2 below. This table sets out the drawings of the proposed works, which are provided in A3 format at the end of this appendix. It also provides the status and location of the drawings within the application.

**Table L.2 Drawings relating to heritage assets at Chambers Wharf**

<b>Drawing title</b>	<b>Drawing status</b>
Location plan	For information
As existing site features plan	For information
Demolition and site clearance plan	For approval
Site works parameter plan	For approval
Permanent works layout	Illustrative
Finished site levels	For approval
Proposed site features: Overall	Illustrative save for the scale of above ground structures which is indicative
Proposed site features: Shaft area	Illustrative save for the scale of above ground structures which is indicative
Post residential development section AA	Illustrative
As existing and post residential development north elevation	Illustrative
Kiosk design intent	Illustrative save for the scale of the kiosk which is indicative
Construction phase 1: Site set-up	Illustrative
Construction phase 2: Shaft construction	Illustrative
Construction phase 3: Tunnelling	Illustrative
Construction phase 4: Secondary lining	Illustrative
Construction phase 5: Site demobilisation	Illustrative

The drawings are located in Section 21 of the *Book of Plans*

## Chambers Wharf

- L.4.9 The construction works would directly affect Chambers Wharf. The existing concrete wharf would be demolished and the temporary cofferdam constructed on the foreshore in its place (refer to the Demolition and site clearance plan). The temporary wharf structure would project further into the river than the existing. The associated dolphin would not be removed.
- L.4.10 The main tunnel shaft would be excavated adjacent to the existing river wall on the landward side. Channels would be cut into the river wall in order to tie the cofferdam into it. A section of the existing river wall would be removed; following construction, a new wall constructed along the line

of the existing. Refer to the following drawings: Construction phase: 1 Site set-up, Construction phase 2: Shaft construction, Construction phase 3: Tunnelling, Construction phase 4: Secondary lining and Construction phase 5: Site demobilisation.

- L.4.11 The above-ground structures would be positioned on the site (refer to the Proposed site features: Overall and Kiosk design intent drawings). No site-specific principles were developed in relation to the significance of Chambers Wharf.
- L.4.12 Following construction, the Thames Path would be routed along the riverside in front of the site, which would open new views across the River Thames to the public. The three ventilation columns would form a new feature in the area and the river wall would be reinstated to its historic alignment.
- L.4.13 No heritage consent would normally be required.

### **29 Bermondsey Wall West and associated dolphin**

- L.4.14 The construction works would temporarily affect the setting of the Grade II listed 29 Bermondsey Wall West and associated dolphin. While the cranes, sound enclosure and other construction activities would not visually intrude on views to the building from the Thames Path due to intervening buildings, the foreshore construction area would be visible.
- L.4.15 The permanent above-ground structures would not be visible from the building although they would be visible in its setting from views across the river. The river wall reinstated to its historic alignment would also be visible in its setting.
- L.4.16 No heritage consent would normally be required.

### **33 Bermondsey Wall West**

- L.4.17 The construction works would temporarily affect the setting of the Grade II listed 33 Bermondsey Wall West. The cranes, sound enclosure and other construction activities in the foreshore would be visible in views from the Thames Path along the river but would not visually intrude on the views due to intervening buildings.
- L.4.18 The permanent above-ground structures and the river wall reinstated to its historic alignment would also be visible in the building's setting, although not in views from the building.
- L.4.19 No heritage consent would normally be required.

### **St Saviours Dock Conservation Area**

- L.4.20 The construction works would affect the setting of the St Saviours Dock Conservation Area as the southern edge of the site is visible from George Row in views along Chambers Street. The works would also be distantly visible from the Thames Path in the western end of the conservation area, and obliquely from some of the buildings that front onto the river in the eastern part. Long oblique views from the river frontage to the east of the site would also be affected by the foreshore works. The views of the

conservation area from Wapping Pier Head Conservation Area would also be altered.

- L.4.21 An existing electrical building would be demolished within the proposed site which, along with general site clearance, would temporarily open up views from the conservation area towards the east along Bermondsey Wall West.
- L.4.22 The permanent above-ground structures and the river wall reinstated to its historic alignment would also be visible in the area's setting, although not from within the conservation area.
- L.4.23 No heritage consent would normally be required.

### **East Lane Stairs**

- L.4.24 The construction works would have a temporary effect on the setting of East Lane Stairs in views from across the river. The stairs would be screened from the site itself by Luna House.
- L.4.25 The permanent above-ground structures and the river wall reinstated to its historic alignment would be barely visible in the stairs' setting.
- L.4.26 No heritage consent would normally be required.

### **Wapping Pierhead Conservation Area**

- L.4.27 The construction works would be highly visible from the north bank of the River Thames and would temporarily affect the setting of the Wapping Pierhead Conservation Area; views to the conservation area from the site are unlimited but some distance away.
- L.4.28 The permanent above-ground structures and the river wall reinstated to its historic alignment would also be visible in the area's setting.
- L.4.29 No heritage consent would normally be required.

### **Tower Bridge and Tower Bridge Conservation Area**

- L.4.30 The construction works would fall within the setting of Tower Bridge and the Tower Bridge Conservation Area in distant oblique views from further west.
- L.4.31 The river wall permanently reinstated to its historic alignment would be barely visible in their setting.
- L.4.32 No heritage consent would normally be required.

### **Edward III's Rotherhithe Conservation Area**

- L.4.33 The construction works would form a small element within very oblique views from Edward III's Rotherhithe Conservation Area, which would be obscured by trees, buildings along the riverfront, and the intervening bridge leading to the riverboat pier aligned with Cherry Garden Street.
- L.4.34 The river wall permanently reinstated to its historic alignment would also be visible in these views.
- L.4.35 No heritage consent would normally be required.

### Riverside School

L.4.36 The construction works would be visible from the western side of the school and its setting would be altered. However, as the school is surrounded by modern development its setting makes very little contribution to its significance.

L.4.37 No heritage consent would normally be required.

### 48 Farncombe Street

L.4.38 The construction works would be visible from 48 Farncombe Street and would alter its setting. However, the site in its present state already detracts from its setting.

L.4.39 No heritage consent would normally be required.

### Archaeology

L.4.40 The temporary construction works in the foreshore and on the landward side of the river wall would affect archaeology in those areas. Multi-period archaeological remains are potentially located within the foreshore alluvium and possibly down into the underlying gravels.

L.4.41 Any remains would be removed as a result of the localised excavation of alluvium down to the gravels, adjacent to the perimeter of the temporary cofferdam and existing river wall. The demolition of the existing concrete wharf and the movement of small plant machinery within the footprint of the temporary cofferdam would potentially cause localised disturbance to archaeological deposits.

L.4.42 Within the landward area of the site, excavation of the main tunnel shaft and the base of the new river wall would entirely remove any archaeological remains within the footprint of the works. Site preparation works and construction of the below-ground structures could also locally truncate or remove archaeological remains.

L.4.43 Any potential harm to the significance of archaeological heritage assets during construction would be mitigated by a programme of investigation and recording, as set out in the *Code of Construction Practice*, Part A. The details of this programme are set out in the *Overarching Archaeological Written Scheme of Investigation*, which accompanies the application.

## L.5 Heritage design considerations

L.5.1 As most of the project works would be below ground, the key design objective for the permanent works was to integrate the functional components of the system into the historic environment. The site-specific objective at Chambers Wharf was to ensure the appearance, scale and layout of the proposed structures would appropriately integrate with the approved residential development, taking account of the existing below-ground infrastructure, the nearby heritage assets and the river frontage.

L.5.2 In response to the consultation process, the following heritage-related changes were made to the design:

- a. The design team developed a more imaginative design to make the works a focal point and improve the public realm along the section of the Thames Path within the site.
- b. The ventilation columns were relocated further east towards the end of the vista from St Saviour’s Conservation Area beside the riverfront.
- c. The existing concrete wharf would be permanently removed and the historic line of the river wall reinstated.
- d. In response to discussions with the London Borough of Southwark, the dolphin at the northwestern corner of the site would not be removed.

L.5.3 The design principles for the final design of this site include the generic (project-wide) heritage design principles and the site-specific principles set out in Section 4.16 of the Design Principles. The site-specific principles that relate to the nearby heritage assets include the following:

Reference	Site-specific design principles
CHAWF.01	The electrical and control kiosk shall be clad in materials that reflect the future use of this part of the site as public realm.

## L.6 Mitigation measures

- L.6.1 Due to the presence of heritage assets nearby, the National Policy Statement for Waste Water (the ‘NPS’) requires the proposed development to be based on an understanding of the significance of heritage assets (para. 4.10.11), minimise any impacts on their significance (paras. 4.10.12 - 4.10.14), minimise impacts on their setting (para. 4.10.17), mitigate any negative impacts (para. 4.10.18 to 21), and ensure that the proposals are of a high design quality (Section 3.5). These requirements are reflected in similar policies in the *London Plan* (2011), the *Core Strategy* (2011), the saved *Southwark Plan*, and the *St Saviours Dock Conservation Area Appraisal*.
- L.6.2 Various mitigation measures were embedded into the design of the permanent works, including reinstatement of the river wall to its pre-mid-20th century line following the demolition of the concrete wharf that takes up the majority of the river frontage of the site. The permanent above-ground structures would also be detailed and sited to minimise effects on the historic environment and the ventilation columns would be located as far as possible from St Saviours Dock Conservation Area and not too close to the river frontage.
- L.6.3 As no designated or undesignated heritage assets would be physically affected by the proposed works, no specific mitigation measures would be required. However, various measures would be adopted to minimise and mitigate the potential temporary effects of the works in the setting and views of nearby assets, in line with the requirements of the NPS (Section 4.7 and para. 4.10.18).
- L.6.4 The construction site would be screened with hoardings and a noise enclosure to minimise the impact of any visual disturbance, noise and lighting.

- L.6.5 The potential impact of the demolition of the concrete wharf would be mitigated by cutting off its foundations at least 0.5m below river bed level. This would ensure that its removal would have no permanent impact on the setting of neighbouring heritage assets.
- L.6.6 Although the site is located in an area of high archaeological potential, 19th and 20th construction activity within and immediately surrounding it suggests that no highly significant archaeology is anticipated that would merit preservation *in situ*. Mitigation of the adverse effects on archaeological remains could be further informed by the findings of a field evaluation that would be carried out well in advance of construction.
- L.6.7 A watching brief during site preparation and construction would constitute sufficient mitigation. If considered necessary, targeted investigations could be carried out as the works (especially in the foreshore) proceed, in accordance with the *Overarching Archaeological Written Scheme of Investigation*. A suitable programme of investigation would ensure 'preservation by record'. It would advance understanding of the significance of any finds, which would be appropriately disseminated. This would satisfy the requirement in the NPS (para. 4.10.18) to record any unavoidable losses.
- L.6.8 Due to the depth of the alluvium on the landward part of the site, mitigation of the impacts of ground-works on any deeply buried prehistoric to late-medieval remains may only become feasible during construction, subject to further clarification of construction methodology. The preferred archaeological mitigation strategy – where depth and logistical constraints allow – would be early access for advance archaeological excavation of the principal impact area.
- L.6.9 The programme of archaeological mitigation would be tailored to respond to evolving conditions on-site. It would also continue after the completion of the works in the event that river scour patterns change and affect potential archaeology.
- L.6.10 For the duration of the construction phase, all heritage assets would be safeguarded by the provisions of a site-specific heritage management plan. This plan would be prepared by the contractor prior to commencing construction in accordance with Section 12 of the *Code of Construction Practice Part A*.

## L.7 Assessment of effects

- L.7.1 The *Environmental Statement* assesses the significant effects of the proposals on the historic environment. The discussion below summarises the significant and less significant effects, having regard to the criteria in the NPS. The summary assessment is based on the significance of the heritage assets identified in Section L.3, the impacts identified in Section L.4 and the mitigation measures described in Section L.6.

### **Chambers Wharf and associated dolphin**

- L.7.2 The permanent demolition of the concrete wharf and the reinstatement of the historic river wall alignment would have a negligible positive effect. The dolphin's original context would be lost; however, it would remain as evidence of the historic uses of the river.

### **29 Bermondsey Wall West and associated dolphin**

- L.7.3 The construction works would have a minor temporary negative effect on the Grade II listed Chambers Wharf building. The cofferdam would be visible in its setting, although only to one side in views from across the river and at an oblique angle to the building's river frontage. This would amount to less than substantial harm, as its significance and setting would not be substantially diminished or lost.

### **33 Bermondsey Wall West**

- L.7.4 The construction works would have a minor temporary negative effect on the Grade II listed 33 Bermondsey Wall West. The cofferdam would be visible in its setting, although only to one side in views from across the river. The foreshore construction structures would not be visible from the building, due to the intervening building. This would amount to less than substantial harm, as the building's significance and setting would not be substantially diminished or lost.
- L.7.5 The permanent demolition of the concrete wharf and the reinstatement of the historic river wall alignment would have a negligible positive effect on its setting.

### **St Saviours Dock Conservation Area**

- L.7.6 The construction works would not significantly affect the setting of the St Saviours Dock Conservation Area as they would be some distance away from the main views of the conservation area and would be screened from within the area by existing buildings. The works would have a minor temporary negative effect, which would constitute less than substantial harm.
- L.7.7 The effects of the permanent works on the conservation area would be minor positive. The demolition of the concrete wharf and reinstatement of the historic river wall alignment would enhance views to/beyond the conservation area from the west. The rerouted Thames Path would improve public access to and appreciation of the conservation area's riverfront setting and better reveal its significance.

### **East Lane Stairs**

- L.7.8 The construction works would have negligible effects on the Grade II listed East Lane Stairs, as the cofferdam and foreshore construction site would not be visible in its limited setting. This would amount to less than substantial harm, as their significance would not be substantially diminished or lost.
- L.7.9 The permanent works would not impact on East Lane Stairs' setting.

### **Wapping Pierhead Conservation Area**

- L.7.10 The construction works would be clearly visible from the northern bank of the River Thames at Pier Head; however, they would only have a limited effect on the more significant views to the east and west. The temporary impact of the works would be minor negative and constitute less than substantial harm, as the significance of the conservation area as a whole would not be diminished.
- L.7.11 The demolition of the concrete wharf would enhance views to the site from the conservation area. In view of the relatively small scale of the permanent works, the distance from the conservation area, and the minor contribution of the views directly across the river to its significance, it would constitute a negligible beneficial change. The rerouted Thames Path would also improve public access to and appreciation of the conservation area.

### **Tower Bridge and Tower Bridge Conservation Area**

- L.7.12 The construction works would potentially have a minor negative effect on the setting of Tower Bridge and the Tower Bridge Conservation Area. However, given the distance and the scale of the existing development surrounding the site, the impact would be minimal. It would constitute less than substantial harm as the significance of the bridge and the conservation area would not be diminished.
- L.7.13 The permanent works would have a slightly positive effect on the bridge and the conservation area. The demolition of the concrete wharf would slightly enhance views to the site. The rerouted Thames Path would also improve public access to and appreciation of the bridge and conservation area. It would also enhance views of the bridge and conservation area from the river frontage to the west of the site.

### **Edward III's Rotherhithe Conservation Area**

- L.7.14 The construction works would have a negligible effect on views to/from Edward III's Rotherhithe Conservation Area. However, given the distance, the oblique nature of the view, the screening effect of embankment trees and the pier bridge, and the scale of surrounding development, the effect would constitute less than substantial harm. The significance of the conservation area would not be diminished.
- L.7.15 The effects of the permanent works would be slightly beneficial. The demolition of the concrete wharf would enhance views from the conservation area's riverfront to the site. The rerouted Thames Path would also improve public access to and appreciation of the conservation area.

### **Riverside School**

- L.7.16 The construction works would alter the setting of Riverside School. However, as its setting contributes very little to its significance, the negative effects on its significance would be negligible.

### 48 Farncombe Street

- L.7.17 The construction works would alter the setting of 48 Farncombe Street; however, the site in its present state already detracts from its setting. The works would only result in negligible change to its significance.
- L.7.18 The permanent works would negligibly improve its setting with the introduction of a coherent piece of riverside townscape.

### Archaeology

- L.7.19 The existing record of archaeological finds in the foreshore of the site indicates that survival of *in situ* archaeological material is likely to be generally good, particularly close to the river wall.
- L.7.20 Within the landward part of the site, existing basements lie outside the main areas of proposed ground works. Within these areas, survival of archaeological deposits is also likely to be generally good, although there may be significant local truncation from previous development.
- L.7.21 The demolition of the concrete wharf, erection of the cofferdam, localised removal of alluvium, excavation of the main tunnel shaft, and installation of the associated culverts and chambers would reduce the significance of any archaeological material in these areas to negligible.
- L.7.22 The potential harm would be mitigated by the programme of investigation and recording, which would enable the significance of any archaeology to be fully understood. The dissemination of the information gathered via the usual channels would add greatly to public appreciation of the heritage of the site.

### Assessment in relation to policy

- L.7.23 The proposals would cause less than substantial harm to the significance of heritage assets within and near the proposed site, which is below the threshold set in para. 4.10.14 of the NPS. The settings of the assets would be protected and in some cases enhanced, which meets the requirements of para. 4.10.17 of the NPS and reflects *London Plan* Policy 7.8, *Core Strategy* Section 4 and Policy 12, and *Southwark Plan* Policies 3.15 and 3.16.
- L.7.24 All of the proposed alterations fall outside of any designated site or conservation area.
- L.7.25 The temporary negative effects on the setting of the heritage assets would result in less than substantial harm. This is below the threshold established in para. 4.10.14 of the NPS, above which consent should be refused unless substantial public benefit can be demonstrated.
- L.7.26 The sensitive design and modest scale of the above-ground structures would make a beneficial contribution to the distinctiveness of the public realm. The reinstatement of the historic line of the river wall and the rerouted Thames Path would enhance access to and appreciation of the significance of the heritage assets. This would constitute a public benefit, in line with the requirements of Section 3.5 and paras. 4.10.12 and 4.10.17 of the NPS.

- L.7.27 In respect of archaeology, it is unlikely that there would be any archaeological finds of sufficient significance to require preservation *in situ*. The works would be mitigated by the programme of investigation and recording, which satisfies the requirements of para. 4.10.18 to 4.10.20 of the NPS and reflects *London Plan* Policy 7.8.
- L.7.28 Although the ability to record archaeology that would be removed should not be a factor in any decision to grant development consent (NPS para. 4.10.19), English Heritage has agreed that archaeological recording and dissemination of findings would constitute partial mitigation for any archaeological impacts (Vol 2, Appendix E.1 of the *Environmental Statement*).
- L.7.29 The programme of investigation and recording would be compensatory and enable advanced understanding of the significance of any lost archaeological resources. The information gathered would be disseminated to increase public appreciation of the heritage of the site. These mitigation measures are proportionate to the likely significance of the archaeology. Therefore, the potential impact of the works would be acceptable, in line with para. 4.10.18 of the NPS, which also reflect *London Plan* Policy 7.8.

## L.8 Conclusion

- L.8.1 The main heritage impact of the proposals on the nearby listed buildings and the adjacent conservation areas would be less than substantial harm during construction. The impact of the construction structures would be low overall, in heritage terms, as they would be temporary.
- L.8.2 The permanent works would enhance views and re-create the historic line of the river wall. This would have a positive effect on the setting of nearby assets. In view of the careful design and the range of mitigation measures, the permanent works would also preserve and slightly enhance the character of the assets and their settings.
- L.8.3 Impacts on any buried archaeological deposits would be mitigated.
- L.8.4 Once the project works and the approved residential development are in place, there would be no lasting impact on any heritage assets. The formerly closed view to the east at the end of Bermondsey Wall West would also be closed by any new development. In summary, the design and implementation of the works would minimise any negative impacts on the fabric and settings of nearby heritage assets, in line with the requirements of the NPS, the *London Plan* and the *Core Strategy*. The proposals would not cause substantial harm to any of the heritage assets on or around the site.

## Gazetteer of known heritage assets

Details of known heritage assets within the assessment area are provided in Table L.3 below as illustrated on the Historic environment features map.

All known heritage assets within the assessment area are referred to by a historic environment assessment (HEA) number. Assets within the site are referred to and labelled in the Historic environment features map with the prefix 1, eg, HEA 1a, 1b, 1c. References to assets outside the site but within the assessment area are referred to numerically from 2 onwards, eg, HEA 2, 3, 4, and 5). The gazetteer also appears within the *Environmental Statement*, Vol 10, Appendix E.1.

**Table L.3 Historic environment: Gazetteer of known heritage assets shown on the historic environment features map**

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
1A	<p>Chambers Wharf, Chambers Street. Museum of London Archaeology Service (MOLAS); archaeological watching brief (2006); archaeological evaluation and standing structure survey (2008).</p> <p>An archaeological watching brief was conducted by MoLAS in 2006 to monitor and record ten geotechnical test pits, eight of which were located within the site, landward of the river wall. Of the ten pits, only two reached natural gravel (both were located within the site) at 5mbgl (metres below ground level). Three further pits, also excavated to 5m deep, revealed a sequence of waterlain clays, sand and silt with peaty lenses and in the case of the latter two (neither of which were within the site) a substantial in situ peat horizon at the base of the pits, which may be of Late Bronze date (1200–800 BC). The pits situated in the northern side of the site revealed late post-medieval structures and deposits, mainly of 19th century date, prior to cessation of further investigation, due to the presence of perched water.</p> <p>An archaeological evaluation was carried out on land to the south of Chambers Street in 2008. Seven trenches were excavated, all immediately to the south of, and outside of, the site, two of which revealed the truncation of archaeological deposits. Five trenches located archaeological features dating from the 17th to the 20th centuries. A series of north-south drainage ditches or channels were excavated, probably used to drain the then open land, creating firmer, drier land on which construction could be carried out. The ditches were revetted with timber structures. Evidence of consolidation dumps to provide building foundations were also recorded. Later timber structures, built into the partially filled drainage channels, included a timber-framed building of probable 18th–19th century date, and a privy building.</p> <p>Standing structure recording was also carried out on the site in 2008. The oldest structural remains were to the east where the substantial remains of an 18th to 19th-century warehouse were visible along Loftie Street. Further 19th century wall fragments were noted in other areas</p>	CHJ06

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
	<p>of the site, incorporated into the 20th century buildings. During the 1930s large cold storage warehouses were built, including a dock along the Thames riverbank. Later additions to Chambers Wharf were made in the 1950s. All buildings surveyed at the time have subsequently been demolished.</p> <p>Related sites: FSW01 (<b>HEA 1B</b>) and BCB01 (<b>HEA 6</b>)</p>	
1B	<p>Southwark Foreshore: University College London Institute of Archaeology (1993); Thames Archaeology Service (TAS) (1992); LARF; Museum of London Archaeology Service (MoLAS) foreshore survey (1995 and 2008); Thames Discovery Programme (TDP) on-going survey since 2009.</p> <p>UCLIA/LARF Bermondsey foreshore survey (1993):</p> <p>A variety of prehistoric material was found at the 'dead low' water line on the foreshore in front of Chambers Wharf. This included a flint core of Mesolithic type, a mace head possibly Neolithic, pottery of likely Earlier Neolithic date, a shard of Late Neolithic Peterborough Ware, a barbed and tanged arrowhead, which may also be of Neolithic date, and the bronze chape from a scabbard. Burnt flint, molluscs, and human bone were also found. It was thought that this material may have been derived from erosion of in situ bedded horizons.</p> <p>Traces of a timber revetment or structure, at 97.5m ATD to 96.9m ATD on the foreshore at the upstream end of Chambers Wharf, were previously thought to be of prehistoric date, but are now dated to the medieval or post-medieval periods.</p> <p>TAS 1990s surveys:</p> <p>A photographic record of the foreshore and visible features was made, comprising views of the foreshore and nearby waterfront; detailed images of a number of features. These include a windlass re-used as part of a structure at the water's edge, numerous timbers, and a panel which may be part of a barge, a clinker-built floor frame, mooring blocks and posts beneath the existing jetty.</p> <p>MoLAS 1996:</p> <p>A foreshore survey of the area immediately upstream of Chambers Wharf was carried out.</p> <p>TDP on-going foreshore survey (2009–present):</p> <p>On-going foreshore surveys have been carried out incorporating the stretch opposite Chambers Wharf, resulting in the identification of prehistoric features, post-medieval shipyard and re-used ship and boat timbers. The later foreshore survey observed features during the original survey of the site and the area of foreshore both in front of and underneath the jetty was mapped. A number of new features were also recorded. See also HEA 1D–1M; 1O–1Z; 2A–2F; 2H and 2I; which detail further finds discovered within the site (survey code FSW01) as part of this survey.</p> <p>Related sites: CHJ06 (HEA 1A)</p>	BMF93 FSW01

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
1C	To the north of Chambers street. Medieval fish trap, dam, embankment, land reclamation; post-medieval ship timber; Bronze Age peat and alluvium and lithic implement: Noted on the GLHER.	MLO75370
1D	Post-medieval nautical timbers. Re-used in A175. Recorded by the TAS in the 1990s and surveyed as part of a foreshore survey carried out in 2008.	FSW01 A176
1E	Post-medieval mooring block. Recorded by the TAS in the 1990s and surveyed as part of a foreshore survey carried out in 2008.	FSW01 A166
1F	Post-medieval artefact scatter. Nails associated with A148. Sawn timber, drilled timber, remains of a stone surface and make up layer. Recorded by the TAS in the 1990s and re-recorded as part of a foreshore survey carried out in 2008.	FSW01 A171
1G	Post-medieval nautical timber. Recorded by the TAS in the 1990s and re-recorded as part of a foreshore survey carried out in 2008.	FSW01 A163
1H	Post-medieval structure. Probably stairs or a causeway. Timber revetment in form of 2 posts and plank. Nautical post-medieval clinker built floor-frame. Recorded by the TAS in the 1990s and re-recorded as part of a foreshore survey carried out in 2008.	FSW01 A162
1I	Post-medieval artefact scatter. Probably shipworking scatter/shipyard. Recorded by the TAS in the 1990s and surveyed as part of a foreshore survey carried out in 2008.	FSW01 A130
1J	Post-medieval structure. Rectangular box with central divide, possibly vessel engine box. Recorded by the TAS in the 1990s and re-recorded as part of a foreshore survey carried out in 2008.	FSW01 A133
1K	Thames foreshore: A post-medieval iron wheel (possibly a cart or ship's wheel) identified on the foreshore as part of the site visit.	---
1L	Unclassified post-medieval timber structure. Recorded by the TAS in the 1990s, however, not visible during a foreshore survey carried out by the TDP in 2008.	FSW01 A136
1M	Unassigned post-medieval feature, possibly shipworking scatter/ shipyard. Recorded by the TAS in the 1990s and surveyed as a group of vertical timbers by the TDP in 2008.	FSW01 A137
1N	Thames channel: The approximate location of a Roman brooch, two post-medieval toys (unspecified), and a post-medieval plaque, recorded by the Portable Antiquities Scheme (PAS).	LON- 622234 LON- 34AAB1; LON- 348B90; LON- 945312

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
1O	Post-medieval tree trunk with bark, possibly a ship-working scatter. Recorded by the TAS in the 1990s but not visible during a foreshore survey carried out by the TDP in 2008. Possibly washed away.	FSW01 A131
1P	Post-medieval timber, tree trunk cut, probably shipworking scatter. Recorded by the TAS in the 1990s but not visible during a foreshore survey carried out by the TDP in 2008. Possibly washed away.	FSW01 A132
1Q	Post-medieval group of timbers, probably shipworking scatter, shipyard. Recorded by the TAS in the 1990s and surveyed as part of a foreshore survey carried out in 2008.	FSW01 A128
1R	Gravel deposit. Raised bed of gravel and tufa with iron. Possibly a prehistoric land surface. Recorded by the TAS in the 1990s and surveyed (further upstream) as part of a foreshore survey carried out by the TDP in 2008.	FSW01 A127
1S	Undated timber structure and unclassified vertical timber stakes, possibly prehistoric and of multiple phases. Recorded by the TAS in the 1990s and surveyed as part of a foreshore survey carried out by the TDP in 2008.	FSW01 A123
1T	Unclassified timber feature comprising small verticals. Possibly prehistoric. Recorded by the TAS in the 1990s, however, not visible during a foreshore survey carried out by the TDP in 2008. Possibly removed by barge scour.	FSW01 A122
1U	Post-medieval mooring block. Timber anchor point or anchor. Recorded by the TAS in the 1990s but not visible during a foreshore survey carried out by the TDP in 2008. Possibly lying beneath a temporarily moored barge.	FSW01 A126
1V	Post-medieval structure comprising timber verticals at shore level. Recorded by the TAS in the 1990s but not visible during a foreshore survey carried out by the TDP in 2008. Possibly removed by barge scour.	FSW01 A121
1W	Post-medieval structure, probably mooring feature comprising square timber, and timber probably representing shipworking scatter, or potential prehistoric forest remains. Recorded by the TAS in the 1990s but not visible during a foreshore survey carried out by the TDP in 2008. Possibly lying beneath barge which was temporarily moored at the time of the survey.	FSW01 A124
1X	Unspecified and undated timber drain. Recorded by TAS in the 1990s.	FSW01 A304
1Y	Post-medieval consolidated ground. Recorded by the TAS in the 1990s but, not visible during a foreshore survey carried out by the TDP in 2008.	FSW01 A120
1Z	Undated unclassified timber structure. Recorded by the TAS in the 1990s but not visible during a foreshore survey carried out by the TDP in 2008. Exact location uncertain.	FSW01 A119

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
2A	<p>Thames foreshore: An early Iron Age dagger in a wooden sheath is described in London and Middlesex Archaeological Society (vol. 55) as having been discovered by chance on the foreshore in front of Chambers Wharf in 2003. Both the dagger and sheath were in a reasonable state of preservation. A late Iron Age coin had previously been discovered here in 2002. Half of a post-medieval skeleton and an early post-medieval fish trap were discovered close by.</p> <p>This is also the approximate findspot of eleven shards of Neolithic pottery recovered from the foreshore by individual collectors in 2001 and 2002. At least three vessels appeared to be represented by the shards.</p>	5343; 1797 (approx)
2B	Void – Number not used	-
2C	Void – Number not used	-
2D	Post-medieval nautical timbers. Worked with bolts. Recorded by the TAS in the 1990s and surveyed as part of a foreshore survey carried out in 2008.	FSW01 A113
2E	Post-medieval nautical timber plank. Recorded by the TAS in the 1990s and surveyed as part of a foreshore survey carried out in 2008.	FSW01 A114
2F	Post-medieval consolidation timber structure comprising two vertical timbers. Recorded by the TAS in the 1990s and surveyed as part of a foreshore survey carried out by the TDP in 2008.	FSW01 A111
2G	Thames foreshore: The approximate findspot of a discoidal Neolithic flint scraper. Discovered on the foreshore a few metres downstream of shards of Neolithic pottery (see <b>HEA 2R</b> above) in the 1990s.	5343; 1797 (approx)
2H	Post-medieval structure, probably riverfront defence comprising timber and revetment fragment. Recorded by the TAS in the 1990s, however, not visible during a foreshore survey carried out by the TDP in 2008. Perhaps buried by sand deposits.	FSW01 A167
2I	Post-medieval mooring bollard, with graffiti. Recorded by the TAS in the 1990s and re-recorded as part of a foreshore survey carried out in 2008.	FSW01 A165
2J	Jamaica Road (a Wharf off this road). A Bronze Age dagger is recorded on the GLHER	MLO26884 114023
2K	Thames foreshore. Post-medieval structure noted on the GLHER.	MLO70452 092500
2L	Thames foreshore Unclassified deposit noted on the GLHER.	MLO70454 092501
2M	Post-medieval nail and timber scatter. Recorded by TAS in the 1990s.	FSW01 A310
2N	Thames foreshore: Animal bone, probably cattle, identified on the foreshore during the MOLA Thames Tideway Tunnel site visit.	---

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
20	Mid-20th century jetty extending from the riverside wall northwards over the foreshore, comprising a concrete deck on concrete piled foundations.	5343; 1797
3	<p>The (former) George Public House, George Row, Bermondsey</p> <p>2003 Gifford and Partners (GAP)/Pre-Construct Archaeology (PCA) evaluation</p> <p>A sequence of naturally laid deposits above former bars and eyots, and in former natural channels, was recorded. One of these deposits was a band of peat dating to the Neolithic and Iron Age periods. The sequence was sealed by a ground consolidation dump, dating to the 19th century</p>	GPB03
4	Riverside School. Grade II listed: Formerly known as: Farncombe Street School Board School. School Board school. Dated 1874, by MP Manning of Gale and Manning. Brick in English bond with stone dressings; roofs of slate.	1385525
5	<p>Bermondsey Wall West, 53 George Row (corner of), 1996 PCA evaluation: An apparently undisturbed sequence of alluvium and post-medieval dumped consolidation was recorded, the top of the alluvium at 102m ATD.</p> <p>The naturally-deposited alluvium included a peat deposit 0.45m thick occurring at 100.5m ATD. Alluvial deposits were truncated by a massive channel or pit, probably formed through erosion or other natural processes. In the early post-medieval period the channel was initially filled by alluvially-based deposits, and then purposely backfilled in the 17th or (more probably) 18th century, creating a ground surface at 102.7m ATD. A timber drain apparently running into the channel and a deep 19th century walled drain probably reflect the use of the channel for drainage. This feature is reflected by a 'dip' in Flockton Street immediately to the east of the site.</p>	BWT96
6	Bermondsey Wall West (land at), Chambers Street, 2001 PCA evaluation; excavation; watching brief: Natural alluvial silts with probable Bronze Age peat bands were recorded in a channel. A small assemblage of burnt and struck flint is probably associated with low scale human activity in the area. Medieval activity in the form of postholes probably part of a fish trap or weir and a possible medieval barge bed was recorded. The channel was later dammed with timber beams, tiebacks and wattling, retaining an infill of re-deposited clay and using this as part of a foundation for an embankment. The ground was later levelled and built over in the 17th and 18th centuries and associated with the development of wharfage in the area. The site was then levelled and truncated by 19th century and modern industrial and docking activity.	BCB01
7	St Michael's Catholic College, John Felton Road, 2008 MOLA evaluation: Auguring indicated the existence of one or more palaeochannels, where natural sand and gravel were overlain by alluvial silts. Higher sandy ground suggests the presence of an eyot	JFNO8

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
	(gravel island) in the area. A pit containing Roman pottery was recorded. Alluvial silts were overlain by 17th–19th century deposits. A late 17th or early 18th century, timber-reinforced ditch, and a series of 18th century cuts may relate to a fish pond shown on an 18th century map. These features were truncated by 18th and 19th century brick foundations, superseded by brick and concrete foundations of 19th and 20th century industrial buildings.	
8	Odessa Wharf, Bermondsey Wall West, 1995 MOLAS evaluation: The earliest recorded layer was alluvium, above which was a thick modern reclamation dump behind the river wall. Into the alluvium were set two parallel timber revetments, possibly part of a water channel or of shoring for the construction of an adjacent 19th or 20th century brick wall, abutted by a similar, but north-south aligned wall, extending towards the river. These walls may have formed part of an earlier building foundation or were perhaps tie-backs associated with the river wall.	ODW95
9	Cherry Garden Project, Bermondsey Wall East, 1987 Department of Greater London Archaeology excavation: Several pits and deposits on the surface of the natural containing Iron Age pottery and flint flakes. Concentrated in a small area of higher ground were a Roman ditch and other features as well as three cremation burials. A clay-filled channel was found to contain a large Saxon timber resting against a wattle structure, possibly the remains of a revetment. Post-medieval features included a number of pits of mostly 18th century date and containing large groups of domestic pottery	CG87
10	Springall's Wharf, Bermondsey Wall West, 1991 DGLA evaluation: Remains of a timber waterfront covered by c. 3.5m depth of post-medieval deposits. Evidence of an inlet from the River Thames was also found.	SPW91
11	St James's Estate, St James's Road, 1990 DGLA excavation: Natural waterlain clays and peats in part destroyed by 19th century industrial intrusion, and in places sealed by a thick layer of brick rubble and sand which was probably related to the construction of the nearby Surrey Canal.	SJR90
12	Adlarde's Wharf 1996 PCA evaluation, excavation, watching brief: The surface of natural alluvial deposits was at 100.2m ATD. A chalk dump, revetted with large secured timbers, was interpreted as part of the medieval embankment or associated defences which are thought to be represented by the line of Bermondsey Wall West.  A sequence of waterfronts and associated land reclamation. Timber revetments probably represent the early post-medieval development of the site.  Earliest phase of waterfront dating to the early 17th century. A total of 24 individual timber revetments and a brick-built wall were recorded, the timber being primarily re-used and derived from boats and ships.  Cartographic evidence identified individual properties uncovered during	BWW96

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
	<p>the excavation dating back to at least the 17th century. For much of the early period development took place on a piecemeal property-by-property basis, so that at any one time the contemporary waterfront consisted of several different phases of revetment.</p> <p>Other notable features included a timber building, a c. 15th century clinker boat, a crane-base, a slipway, three timber drains, two timber platforms and a cobbled surface. The fills between the revetments included two dumps from different phases of pottery kiln waste, including kiln furniture and structural evidence.</p>	
13	Post-medieval causeway, timber and stone, fountain stairs. Recorded by the TAS in the 1990s.	FSW01 A101
14	Gridiron (post-medieval timbers for large sea going vessels) consisting of re-used nautical timbers, including near complete rudders, rudder stock, keelson, deck beams etc. Recorded by the TAS in the 1990s.	FSW01 A103
15	Post-Medieval timbers. Large block, possibly mooring post or work bench. Recorded by the TAS in the 1990s.	FSW01 A104
16	Post-medieval gridiron. Apparently an earlier phase of A103. Consisting of re-used nautical timbers, including near complete rudders, keel. Recorded by the TAS in the 1990s.	FSW01 A105
17	Post-medieval structure. Several timbers possibly associated with, but not part of, gridiron A105. Recorded by the TAS in the 1990s.	FSW01 A106
18	Thames foreshore: The location of two prehistoric tree stumps, recorded by TAS in 2001.	FSW01 A307/A308
19	Post-medieval gridiron. Apparently later than A103. Little exposed. Covered by gravel. Recorded by the TAS in the 1990s.	FSW01 A108
20	Drain. Modern concrete outfall of ancient channel. Recorded by the TAS in the 1990s.	FSW01 A109
21	Post-medieval timber. Partly worked tree trunk, vertical, with bark. Possibly shipworking scatter/ shipyard. Recorded by the TAS in the 1990s but not visible during a foreshore survey carried out by the TDP in 2008. Possibly washed away.	FSW01 A134
22	Post-medieval timber. Possible shipworking scatter/ shipyard. Recorded by the TAS in the 1990s but not visible during a foreshore survey carried out by the TDP in 2008.	FSW01 A138
23	Tree root with bark, possibly remnants of prehistoric forest. Recorded by the TAS in the 1990s and re-recorded as a possible in situ peat deposit during a foreshore survey carried out by the TDP in 2008.	FSW01 A139
(24)	The site of 38 and 40 Bermondsey Wall West. Former Grade II listed buildings, recently delisted and demolished (not shown on historic features map).	---

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
25	48 Farncombe Street. Grade II listed: Former office. Dated 1822. For the sewer pumping station (now demolished). Stock brick with stone dressings, shallow stone frieze, cornice and blocking course. Two-storey wedge-shaped corner building with 3-bay front. An early sewerage building, predating the present system, begun in 1858. Dates from first phase of dock expansion.	1385524
26	Chambers Wharf. Grade II listed: Warehouse, c.1865–70. Stock brick with hipped slate roof behind coped parapet. 5 storeys, 3 bays. Street elevation has central ground-floor wagon entrance with hatch rank above, flanked by gauged brick, segmental-arched windows on all but ground floors.	1376584
27	East Lane Stairs. Grade II listed: River stairs appearing as such on Horwood's map of 1799 and the OS of 1872; possibly the same as "East Stairs" on Rocque's map of 1746. Stone-flagged hardstanding, now broken up.	1376586
28	St. Saviour's House, 21 Bermondsey Wall West, 60 George Row 2000 PCA watching brief: Natural strata were not observed during the monitoring of excavations for beam slots, drain runs and a foundation trench. Made ground, a brushwood surface of post-medieval to 18th century date, and the remains of foundations dating to the 19th and 20th centuries were recorded.	BYA00
29	Post-medieval barge bed. Concrete sandbag construction. Recorded by the TAS in the 1990s.	FSW01 A156
30	Post-medieval crane. Attached to waterfront building. Recorded by the TAS in the 1990s.	FSW01 A179
31	Post-medieval artefact scatter, industrial. Sugar refinery wares, pot. Recorded by the TAS in the 1990s and re-corded as part of a foreshore survey carried out by the TDP in 2008.	FSW01 A158
32	Post-medieval structure, possibly barge bed. Metal and timber revetment. Recorded by the TAS in the 1990s and recorded as part of a foreshore survey carried out by the TDP in 2008.	FSW01 A159
33	Post-medieval mooring block. Vertical round wood post with metal ring. Recorded by the TAS in the 1990s but not visible during a foreshore survey carried out by the TDP in 2008.	FSW01 A160
34	Post-medieval mooring block and timber dolphin. Recorded by the TAS in the 1990s and observed (not recorded) as part of a foreshore survey carried out by the TDP in 2008.	FSW01 A161
35	33, Bermondsey Wall West. Grade II listed: Granary, later London Grist Mills, 1866. Stock brick with hipped slate roof with skylights, partly surmounted by timber clerestory, possibly for housing a pneumatic grain intake, seen from river behind plain parapet with coping.	1376585
36	Odessa Wharf. Post-medieval wall and revetment.	MLO66684

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
		092223
37	Bermondsey Wall West. Post-medieval wharf, waterfront and undated watercourse.	MLO58644
38	Chambers Street: Roman (Samian) pottery and coins dated to the reigns of the emperors Claudius (AD 41–54) and Vespasian (AD 69–79) were discovered by chance in 1845 during sewer construction. The description states that these were found in the vicinity of the former New Church Street, which ran a considerable distance to the south of Chambers Street. It is likely that the finds actually came from an area of higher gravel, further to the south.	MLO8405 090660
39	67, George Row. Grade II listed: A workshop now restored as offices dating to c.1830-40. Stock brick; recent slate mansard with dormers behind rebuilt brick parapet with spaced brick strings and stone coping. 2 storeys and attic, 6 bays with rounded corners.	1385546
40	Thames channel: The approximate location of a post-medieval coin, recorded by the PAS.	LON- 6B4A04
41	Thames channel: The approximate location of a medieval candlestick, recorded by the PAS.	LON- 623C24
42	Thames channel: The approximate location of a post-medieval token, a post-medieval toy, and a post-medieval button, recorded by the PAS.	LON- 823905; LON- 6E60D6; LON- 6A8723
43	Thames channel: The approximate location of a post-medieval token and a Roman coin recorded by the PAS.	LON- F789C0; LON- 7F7DC7; LON- 023EC4
44	Thames channel: The approximate location of a post-medieval coin, two post-medieval tokens, and a medieval token, recorded by the PAS.	SUR- 8C9A66; LON- F28823; LON- E05090; LON- 231AF5
45	Thames channel: The approximate location of a two post-medieval tokens and a post-medieval key, recorded by the PAS.	LON- C14850; LON- F0D841; LON-

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number/ NGR ref
		FOFEA4
46	Thames channel: The approximate location of a post-medieval weight and token; and a medieval dice, recorded by the PAS.	LON-9F2D14; LON-8FA666; LON-47FE93
47	Thames channel: The approximate location of a post-medieval pin, knife and coin, recorded by the PAS.	SUR-8C2B04; SUR-EE98C6; SUR-EB3CC4
48	Post-medieval mooring block. Stone with metal ring. Recorded by the TAS in the 1990s and recorded again as part of a foreshore survey carried out by the TDP in 2008.	FSW01 A164
49	Unclassified timber structure in aggradation. Recorded by the TDP post-2009.	FSW01 A305
50	Undated anchor chain. Recorded by the TDP post-2009.	FSW01 A303
51	An undated anchor chain. Recorded by the TDP post-2009.	FSW01 A302
52	Post-medieval Delftware kiln scatter. Recorded by the TAS in the 1990s.	FSW01 A143
53	An undated barge fragment. Recorded by the TAS in the 1990s.	FSW01 A142
54	Thames foreshore: The location of an unclassified structure, comprising horizontal and vertical timbers. Recorded by the TDP post-2009.	FSW01 A309
55	An undated anchor point which include re-used timbers. Recorded by the TAS in the 1990s.	FSW01 A146
56	Thames foreshore: The approximate findspot of a body shard of later Neolithic Grooved Ware pottery, discovered on the foreshore in 2004. A small fragment of human cranium (skull) bone was also discovered in this approximate location in 2003. (The date of the skull bone is not known.)	534180; 179870

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**Table L.4 List of drawings in order**

<b>Drawing title</b>
Historic environment features map
Conservation areas map
Location plan
As existing site features plan
Demolition and site clearance plan
Site works parameter plan
Permanent works layout
Finished site levels
Proposed site features: Overall
Proposed site features: Shaft area
Post residential development section AA
As existing and post residential development north elevation
Kiosk design intent
Construction phase 1: Site set-up
Construction phase 2: Shaft construction
Construction phase 3: Tunnelling
Construction phase 4: Secondary lining
Construction phase 5: Site demobilisation

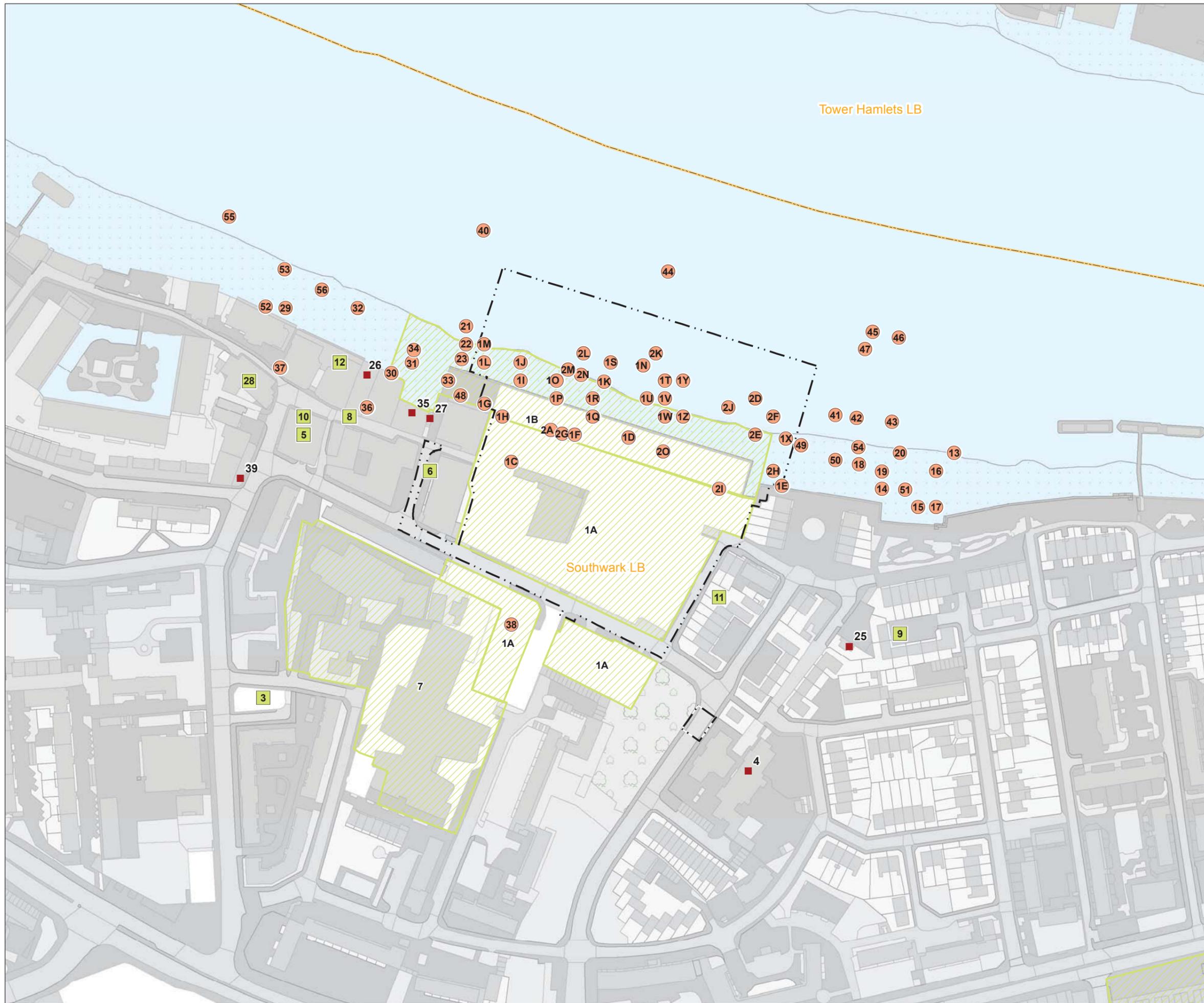
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Key

- Limits of Land to be Acquired or Used
- Local Authority Boundary
- Heritage Feature/Findspot
- Statutorily Listed Building
- Past Investigation
- Past Investigation Area



The reference number for historic environment features correspond to the descriptions in the 'Gazetteer of known heritage assets' in Environmental Statement Vol. 20 Appendix E.1



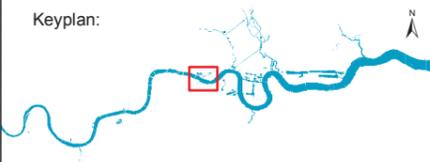
## FOR INFORMATION

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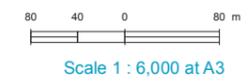
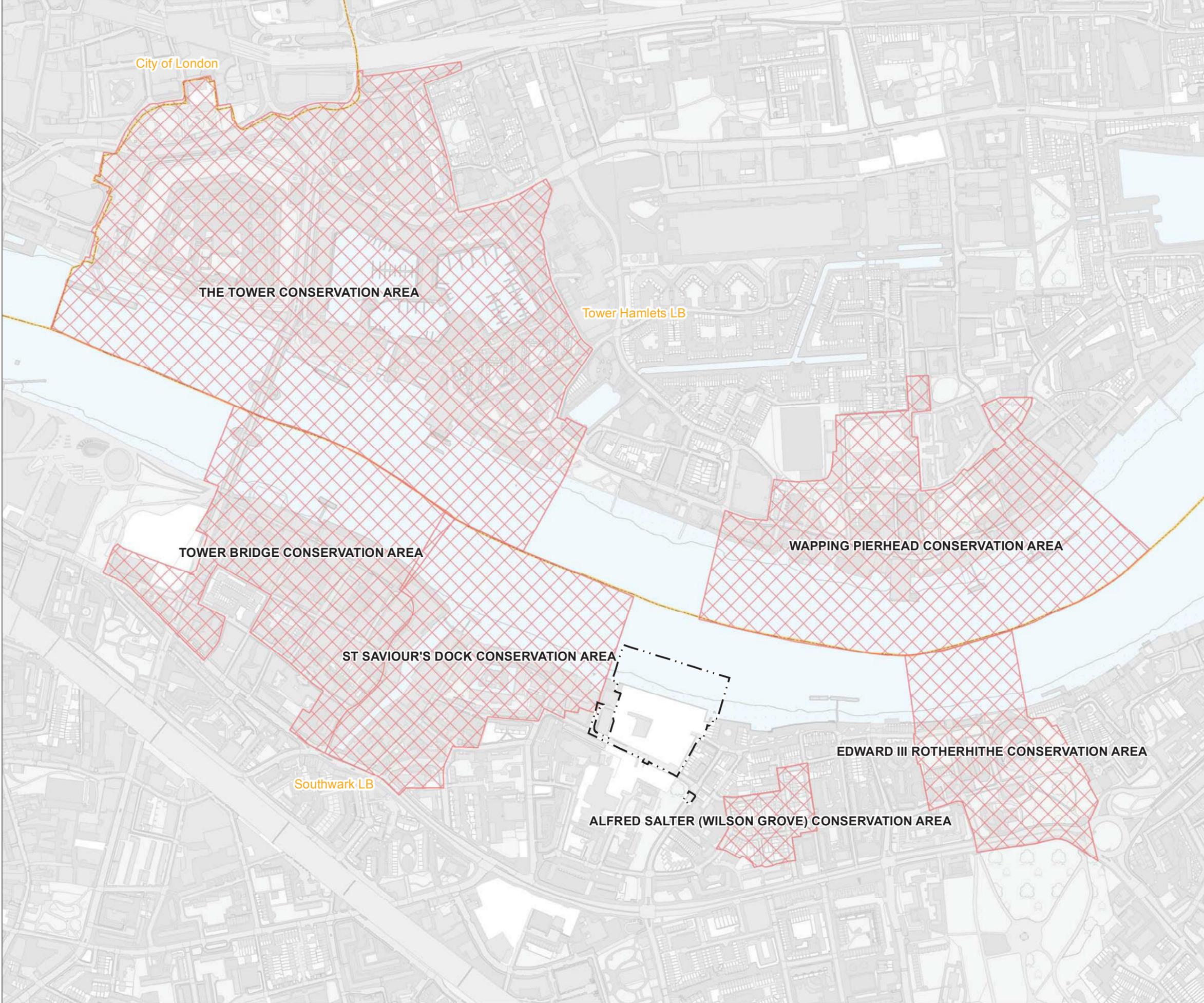
**Document Information**  
Heritage Statement  
Historic environment features map

1PL03-HE-65232  
January 2013





- Key
- Limits of Land to be Acquired or Used
  - Local Authority Boundary
  - Conservation Area



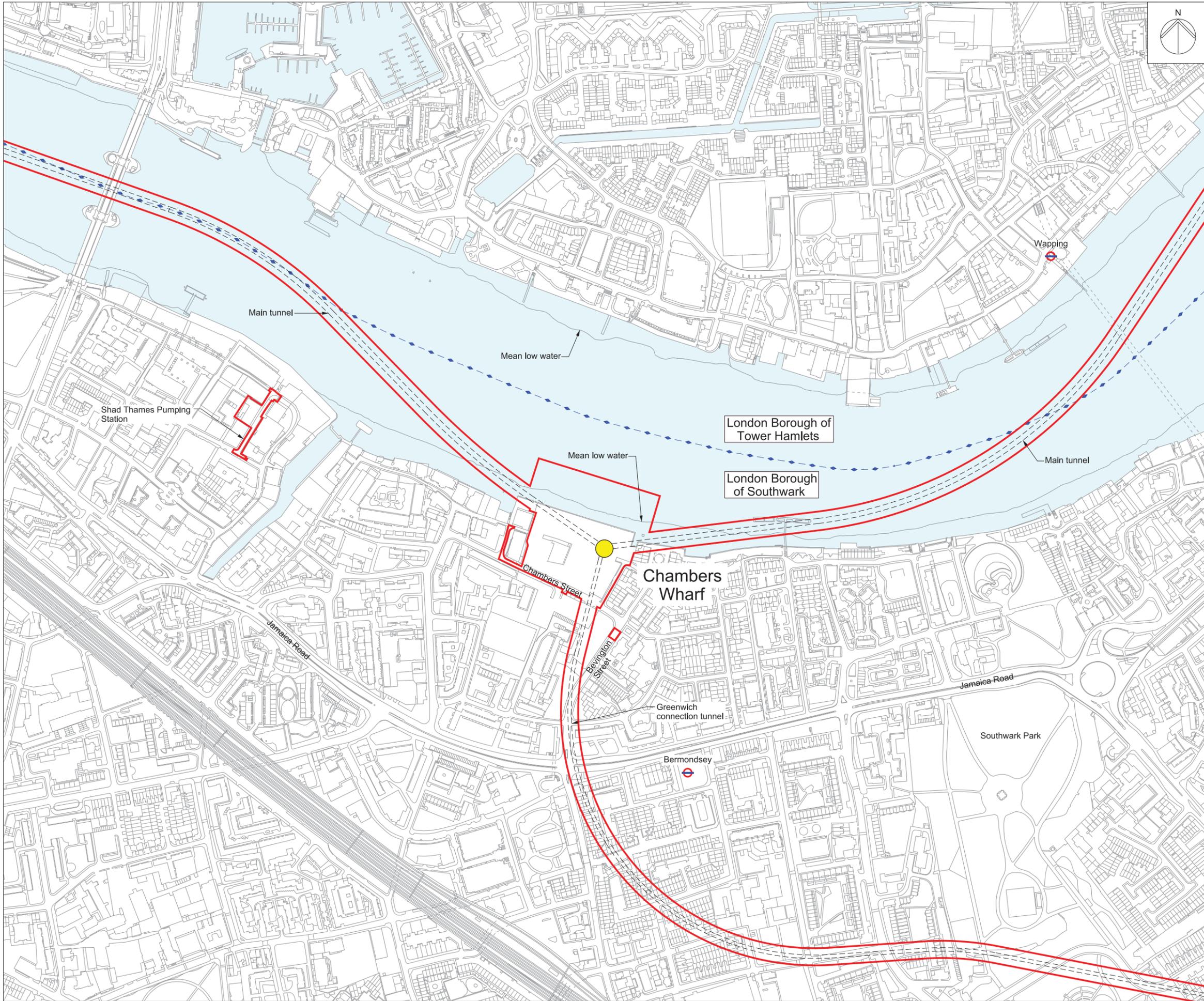
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London Borough of Southwark

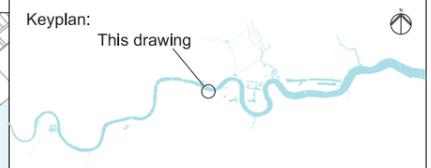
**Document Information**  
Heritage Statement  
Conservation areas map

PL03-HE-65246  
January 2013





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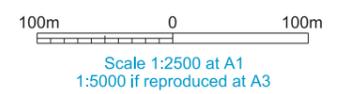


Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

- Key:**
- Local authority boundary
  - Order limits
  - Tunnel
  - Shaft

**Notes:**

1. The alignment of the tunnels are illustrative within limits of deviation.



## FOR INFORMATION

**Location**  
Chambers Wharf  
London Borough of Southwark

**Document Information**  
Application for Development Consent  
Location plan

Book of plans - section 21  
DCO-PP-19X-CHAWF-210001  
January 2013





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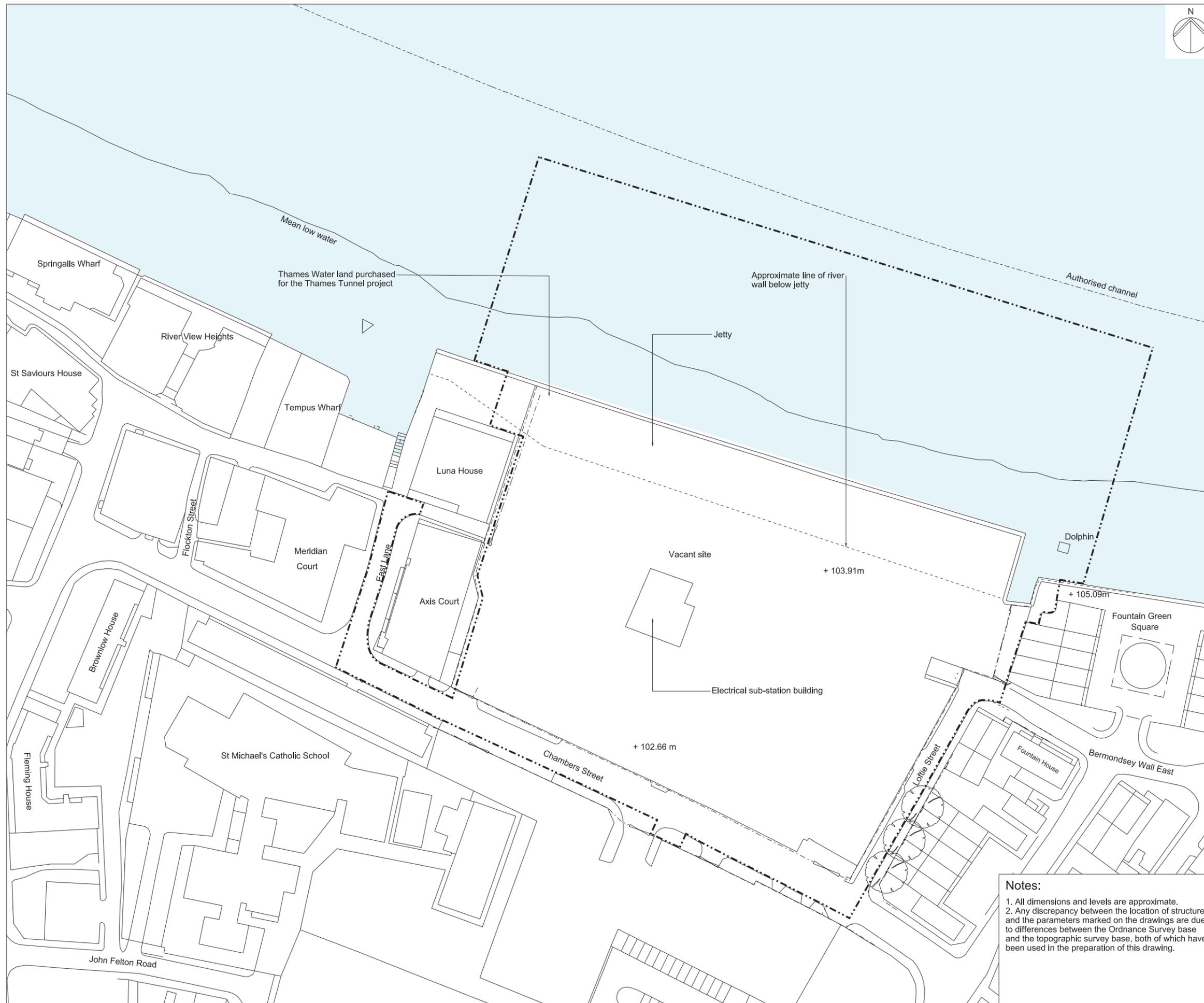
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Key:

-  Limits of land to be acquired or used (LLAU)
-  Authorised channel
- + 105.40m Existing levels (shown in metres above tunnel datum)
-  Existing trees within surveyed area (trunk sizes vary)



## FOR INFORMATION

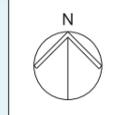
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**Chambers Wharf**  
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**Document Information**  
**Application for Development Consent**

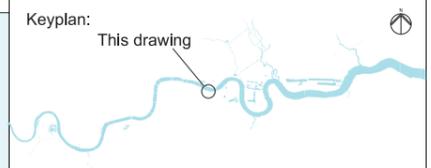
As existing  
 Site features plan  
 Book of plans - section 21  
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**Notes:**  
 1. All dimensions and levels are approximate.  
 2. Any discrepancy between the location of structures and the parameters marked on the drawings are due to differences between the Ordnance Survey base and the topographic survey base, both of which have been used in the preparation of this drawing.



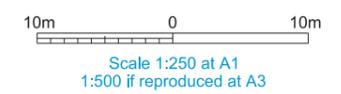
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- Key:**
- Limits of land to be acquired or used (LLAU)
  - Above ground structures to be removed
  - Below ground structures to be removed or infilled

- Notes:**
1. Minor items to be removed (e.g. barriers, bollards etc.) are not shown.
  2. General activities of site clearance such as removal of hardstanding and foundations, stripping of topsoil and clearance of minor vegetation not shown.



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**Location**  
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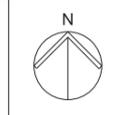
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**Application for Development Consent**  
 Demolition and site clearance

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 DCO-PP-19X-CHAWF-210004  
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Creating a cleaner, healthier River Thames

Table 1

Above ground permanent structure	Maximum height above finished ground level (Minimum heights are in brackets where applicable)
Ventilation column(s) serving the shaft	8.0m (4.0m)
Electrical and control kiosk(s)	2.5m



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- Key:**
- Limits of land to be acquired or used (LLAU)
  - Zone within which all permanent site structures would be located
  - Zone within which the shaft would be located
  - Zone within which permanent above ground structures would be located (those listed in Table 1)
  - Maximum extent of top of river/parapet wall
  - Maximum extent of temporary works platform.

- Notes:**
- All dimensions and levels are approximate.
  - The Site Works Parameter Key Plan identifies each zone independently.
  - The zone within which the shaft would be located would include all permanent works including shaft walls (including appropriate allowances for construction tolerances) and if applicable under-reaming. Shaft construction temporary works may be located within or outside this zone provided they are located within the Limits of land to be acquired or used.

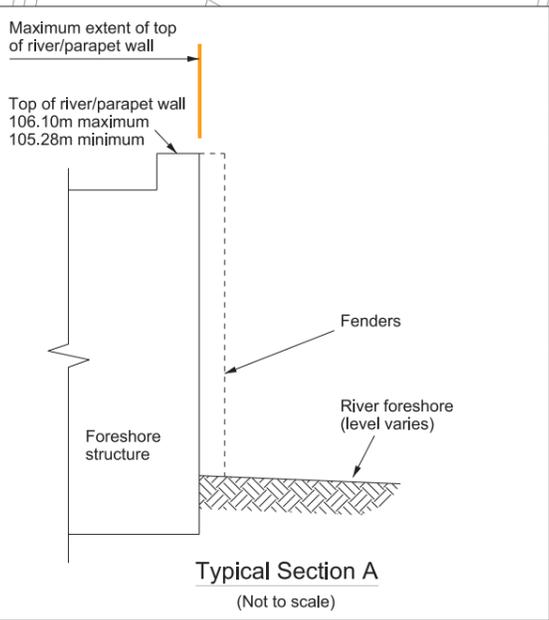
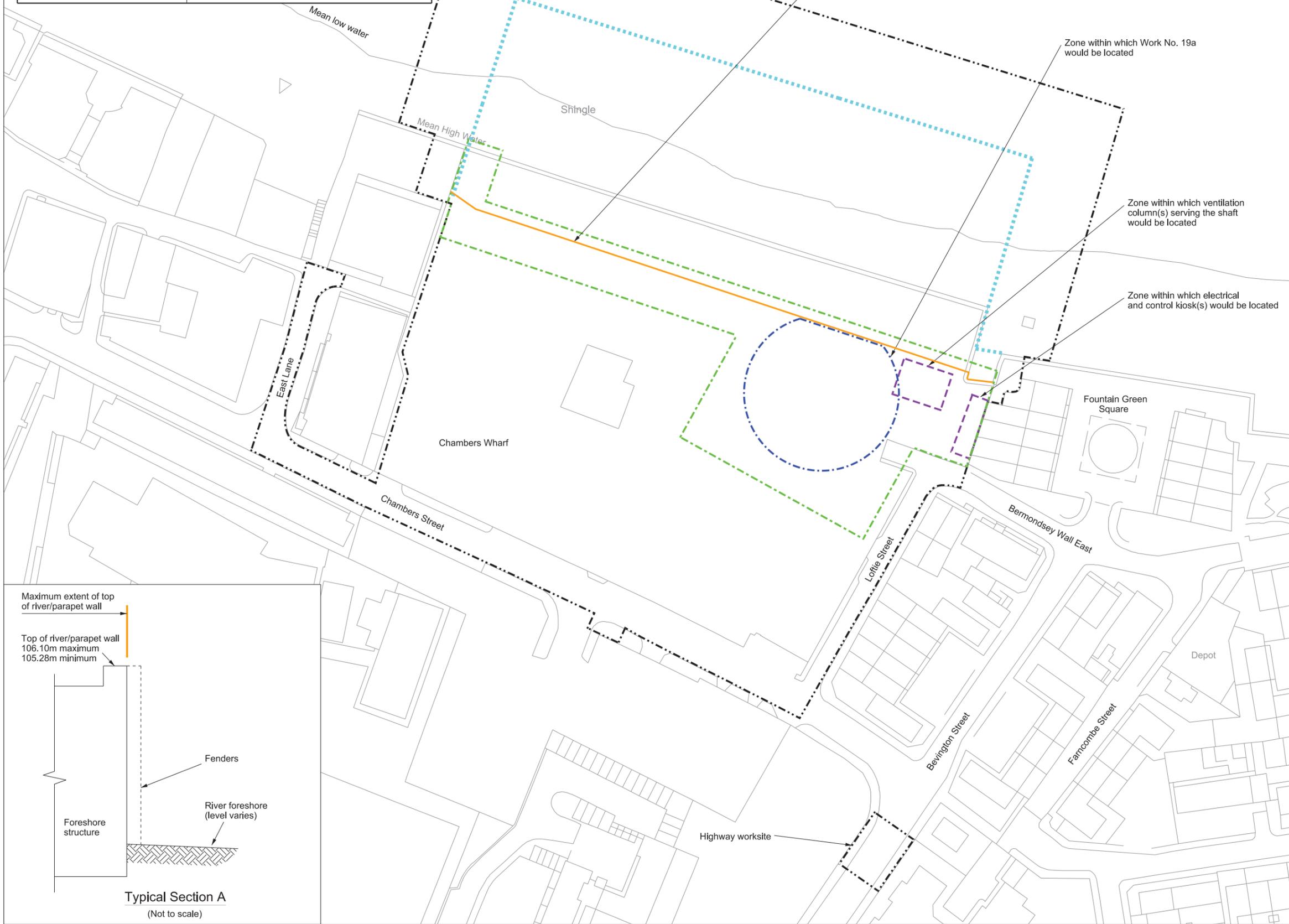


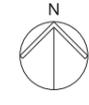
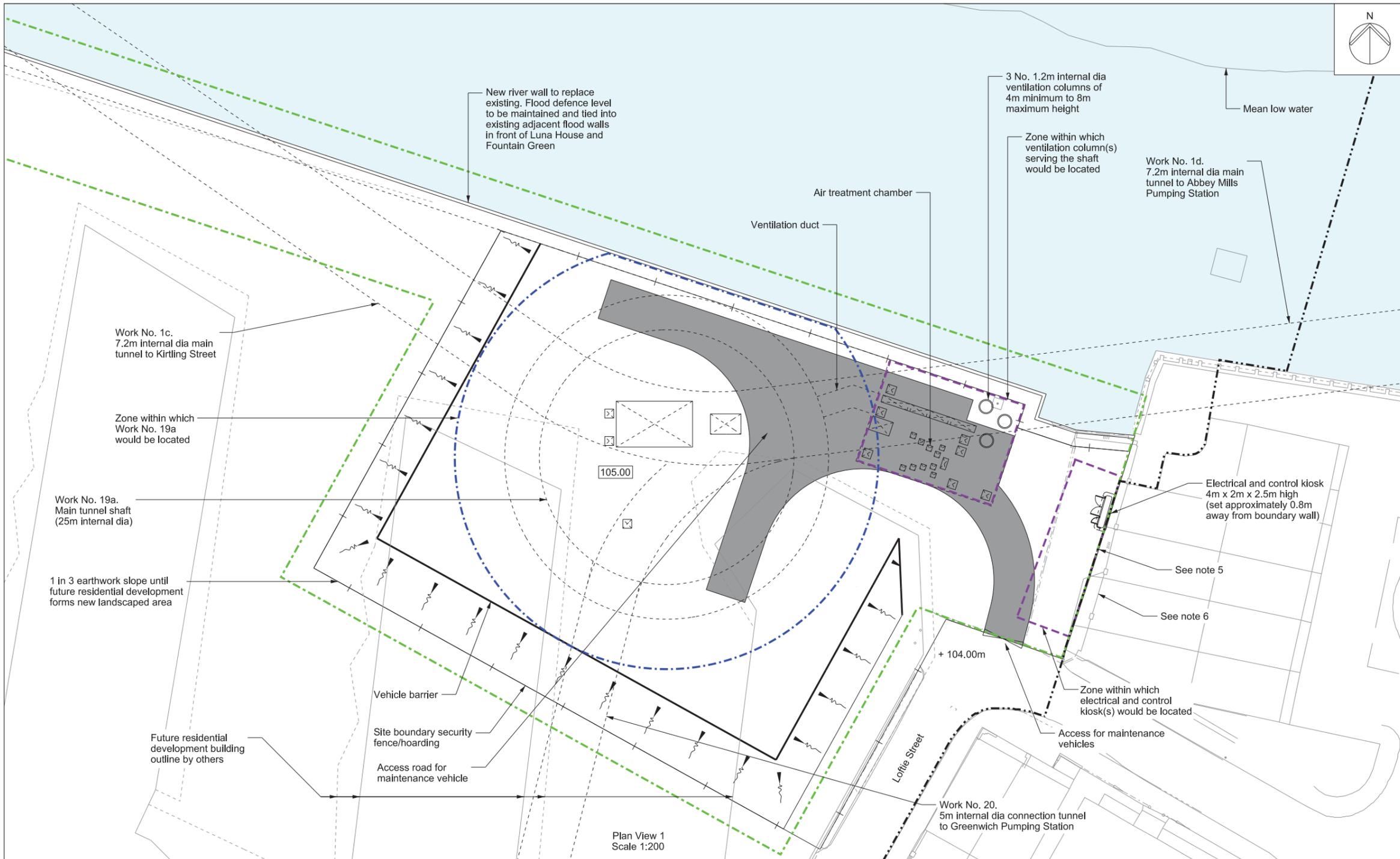
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Site works parameter plan

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DCO-PP-19X-CHAWF-210005  
January 2013



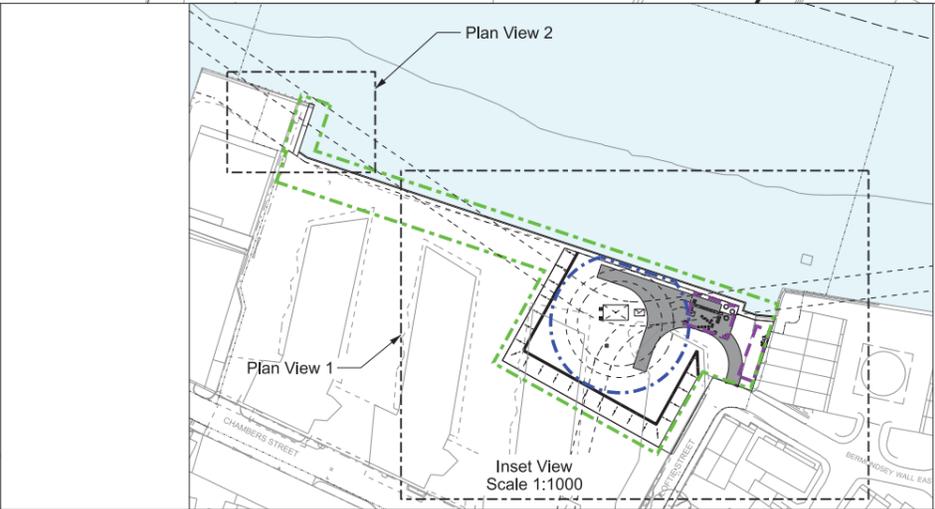
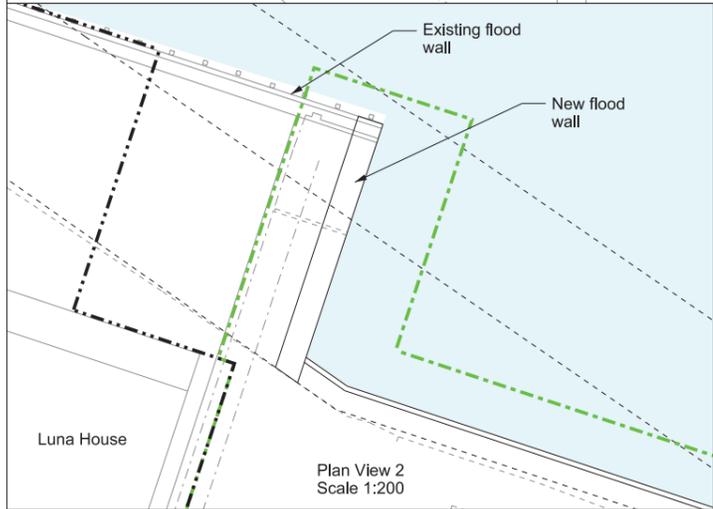
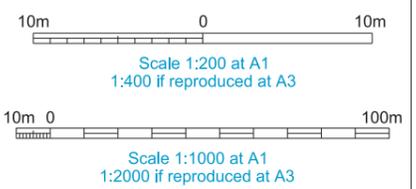


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- Key:
- Limits of land to be acquired or used (LLAU)
  - ☒ Proposed access cover
  - + 104.10m Existing Level (shown in metres above tunnel datum)
  - 104.50 Proposed level (shown in metres above tunnel datum)
  - Zone within which all permanent site structures would be located
  - Zone within which the shaft would be located
  - Zone within which permanent above ground structures would be located



- Notes:
1. All dimensions and levels are approximate.
  2. Any discrepancy between the location of structures and the parameters marked on the drawings are due to differences between the Ordnance Survey base and topographical survey base, both of which have been used in the preparation of this drawing.
  3. This drawing shows permanent site structures only. Landscaping hard works and soft works are shown on the Proposed landscape plan and/or Proposed site features plan.
  4. Future residential development (by others) layout shown taken from third party drawing No. 7153AL\_SITE(00)011.
  5. The LLAU and zone parameters here runs along the boundary wall between the site and Fountain Green Square properties as shown on the Ordnance Survey base.
  6. The line here runs along the boundary wall between the site and Fountain Green Square properties as shown on the topographical survey base.
  7. The lines described in notes 5 and 6 represent the same boundary wall. The discrepancy between how they are shown is due to the differences between Ordnance Survey base and topographical survey base (see note 2).

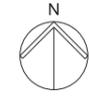
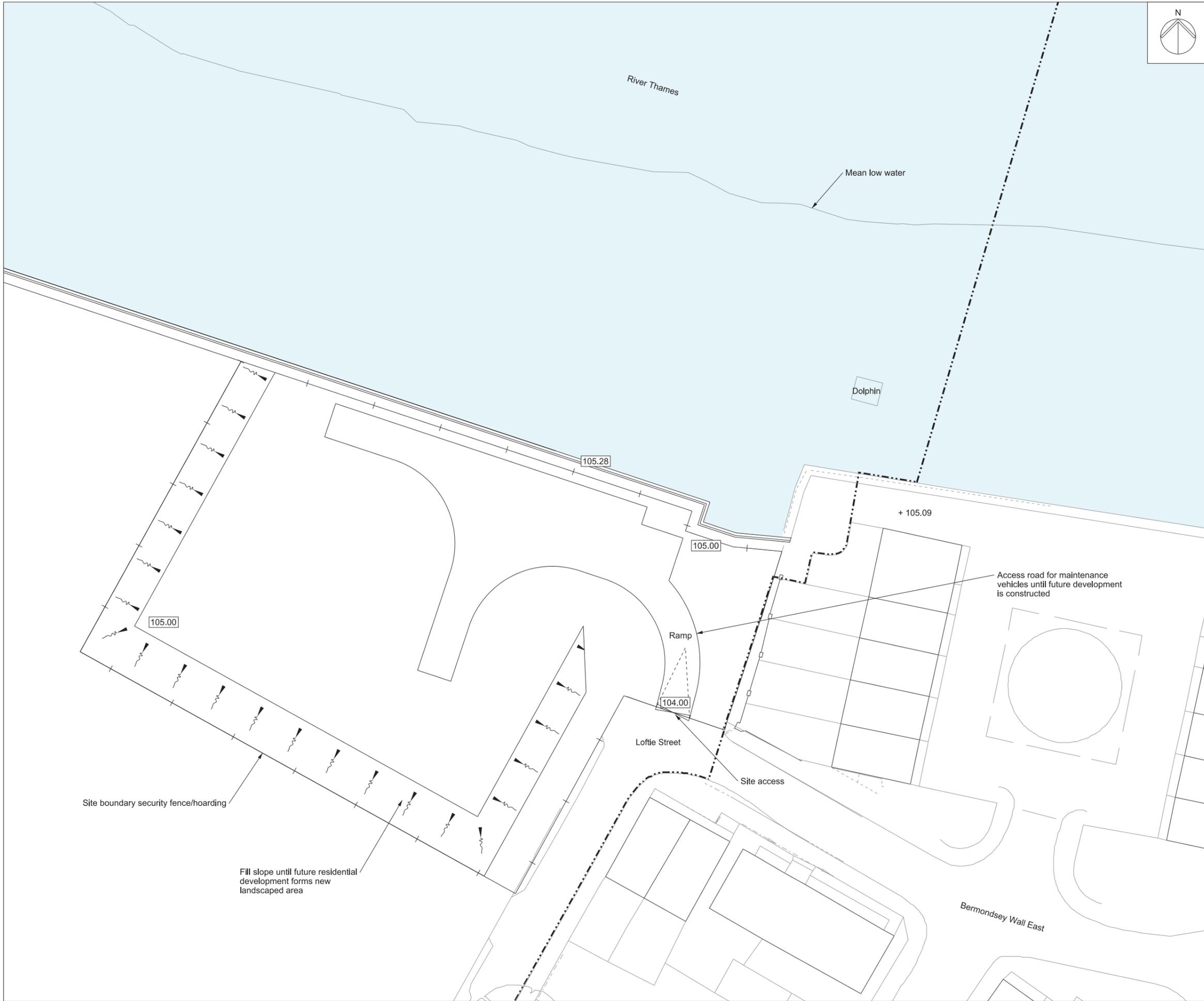
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London Borough of Southwark

**Document Information**  
Application for Development Consent  
Permanent works layout

Book of plans - section 21  
DCO-PP-19X-CHAWF-210007  
January 2013





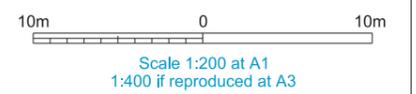
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Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

- Key:**
- Limits of land to be acquired or used (LLAU)
  - + 105.40m Existing levels (shown in metres above tunnel datum)
  - 105.40 Proposed levels (shown in metres above tunnel datum)

- Notes:**
1. All dimensions and levels are approximate.
  2. Any discrepancy between the location of structures and the parameters marked on the drawings are due to differences between the Ordnance Survey base and topographical survey base, both of which have been used in the preparation of this drawing.
  3. This drawing shows the finished site levels at completion of project works.



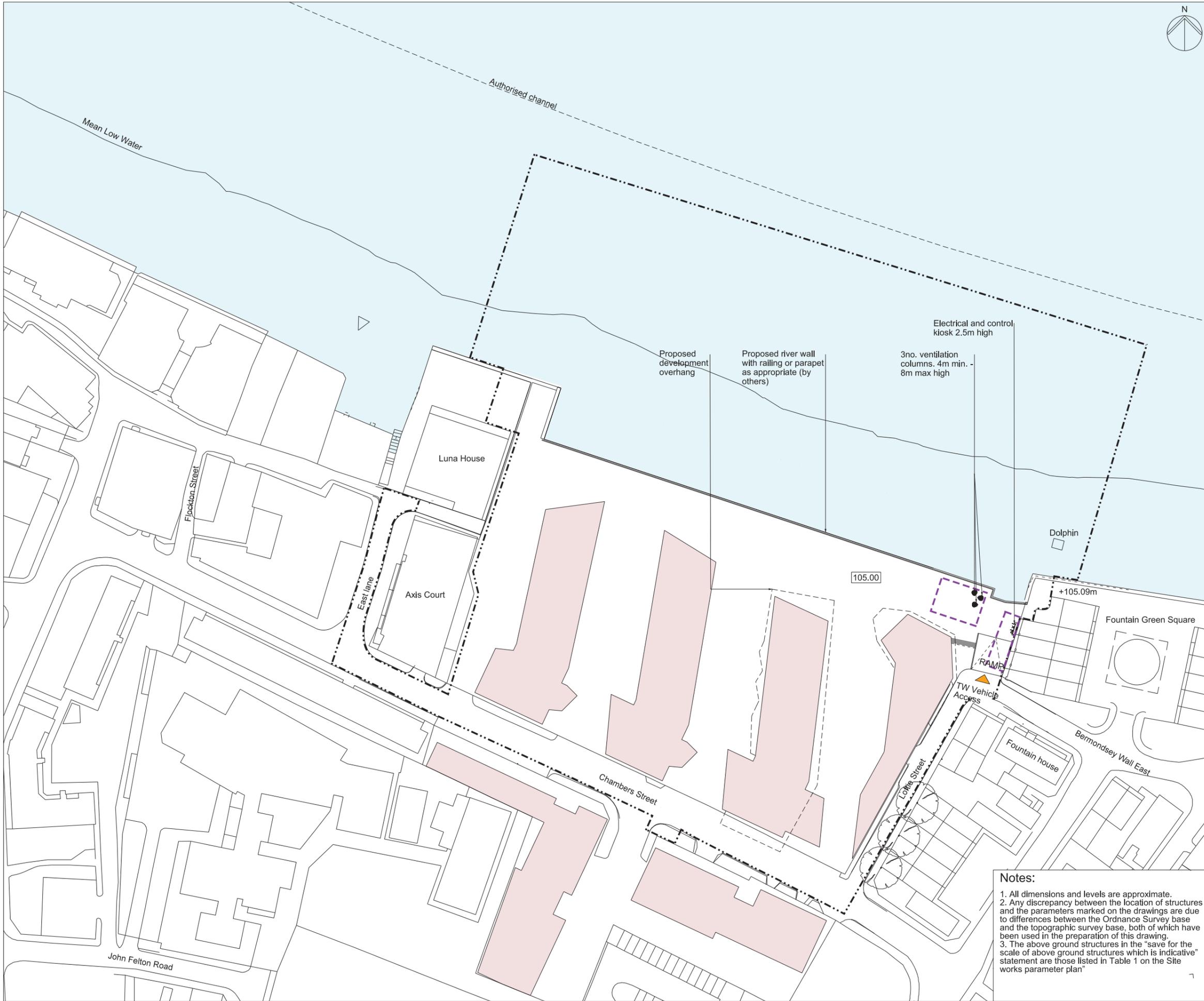
**FOR APPROVAL**

**Location**  
**Chambers Wharf**  
 London Borough of Southwark

**Document Information**  
**Application for Development Consent**  
 Finished site levels

Book of plans - section 21  
 DCO-PP-19X-CHAWF-210008  
 January 2013





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Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

- Key:**
- Limits of land to be acquired or used (LLAU)
  - - - Zone within which permanent above ground structures would be located
  - - - Authorised channel
  - + 105.40m Existing levels (shown in metres above tunnel datum)
  - 105.40 Proposed levels (shown in metres above tunnel datum)
  - Consented development footprint (by others)
  - Existing trees within surveyed area (trunk sizes vary)
  - Thames Water access



**ILLUSTRATIVE**  
Save for the scale of above ground structures which is indicative

**Location**  
Chambers Wharf  
London Borough of Southwark

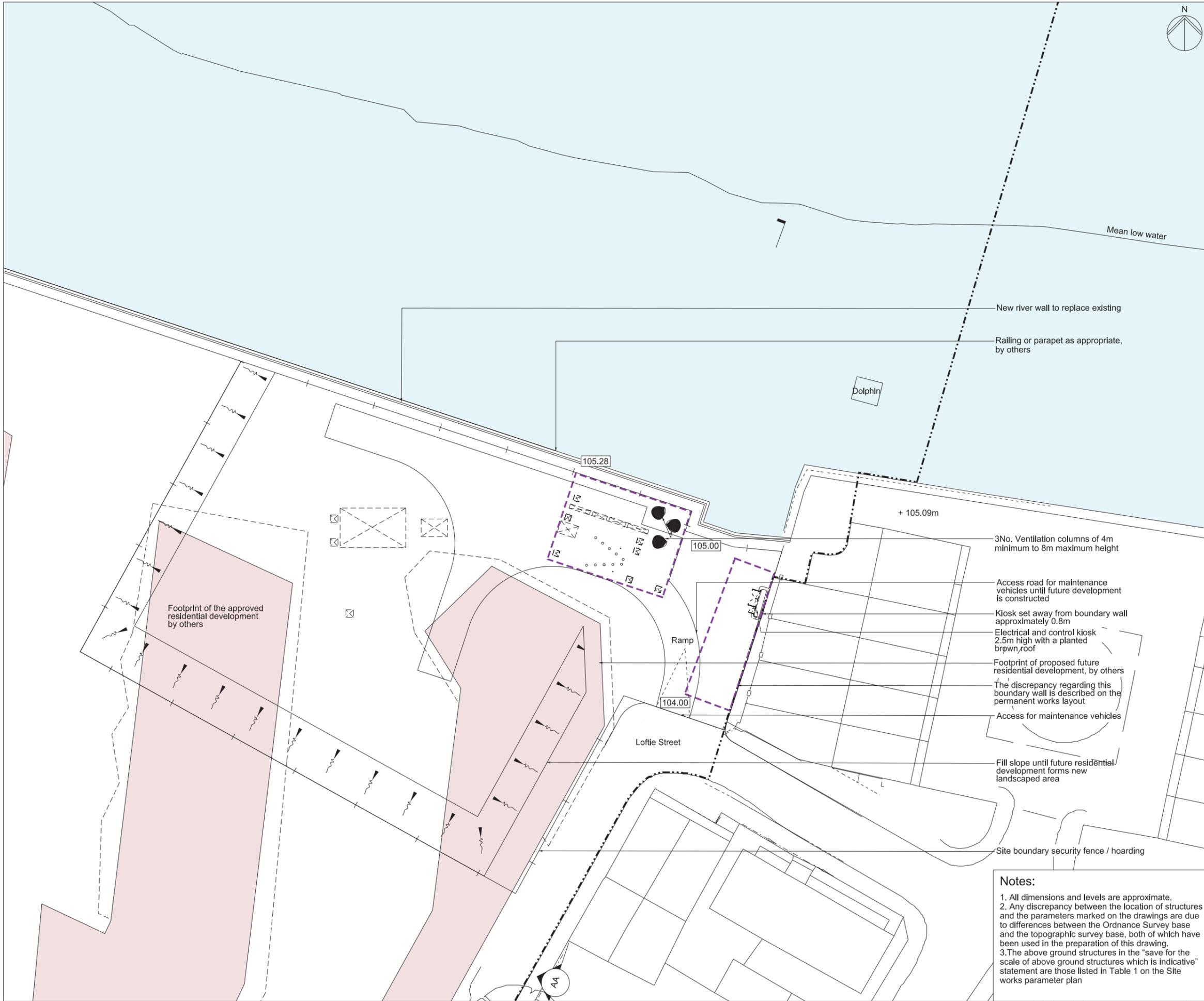
**Document Information**  
Application for Development Consent

Proposed  
Site features - overall  
Book of plans - section 21  
DCO-PP-19X-CHAWF-210009  
January 2013



**Notes:**

- All dimensions and levels are approximate.
- Any discrepancy between the location of structures and the parameters marked on the drawings are due to differences between the Ordnance Survey base and the topographic survey base, both of which have been used in the preparation of this drawing.
- The above ground structures in the "save for the scale of above ground structures which is indicative" statement are those listed in Table 1 on the Site works parameter plan"

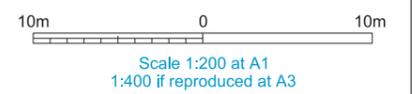


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Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

- Key:**
- Limits of land to be acquired or used (LLAU)
  - Zone within which permanent above ground structures would be located
  - + 105.40m Existing levels (shown in metres above tunnel datum)
  - Proposed levels (shown in metres above tunnel datum)
  - Consented development footprint (by others)
  - Existing trees within surveyed area (trunk sizes vary)
  - Hoarding



**ILLUSTRATIVE**  
Save for the scale of above ground structures which is indicative

**Location**  
Chambers Wharf  
London Borough of Southwark

**Document Information**  
Application for Development Consent

Proposed  
Site features plan - shaft area  
Book of plans - section 21  
DCO-PP-19X-CHAWF-210010  
January 2013



**Notes:**

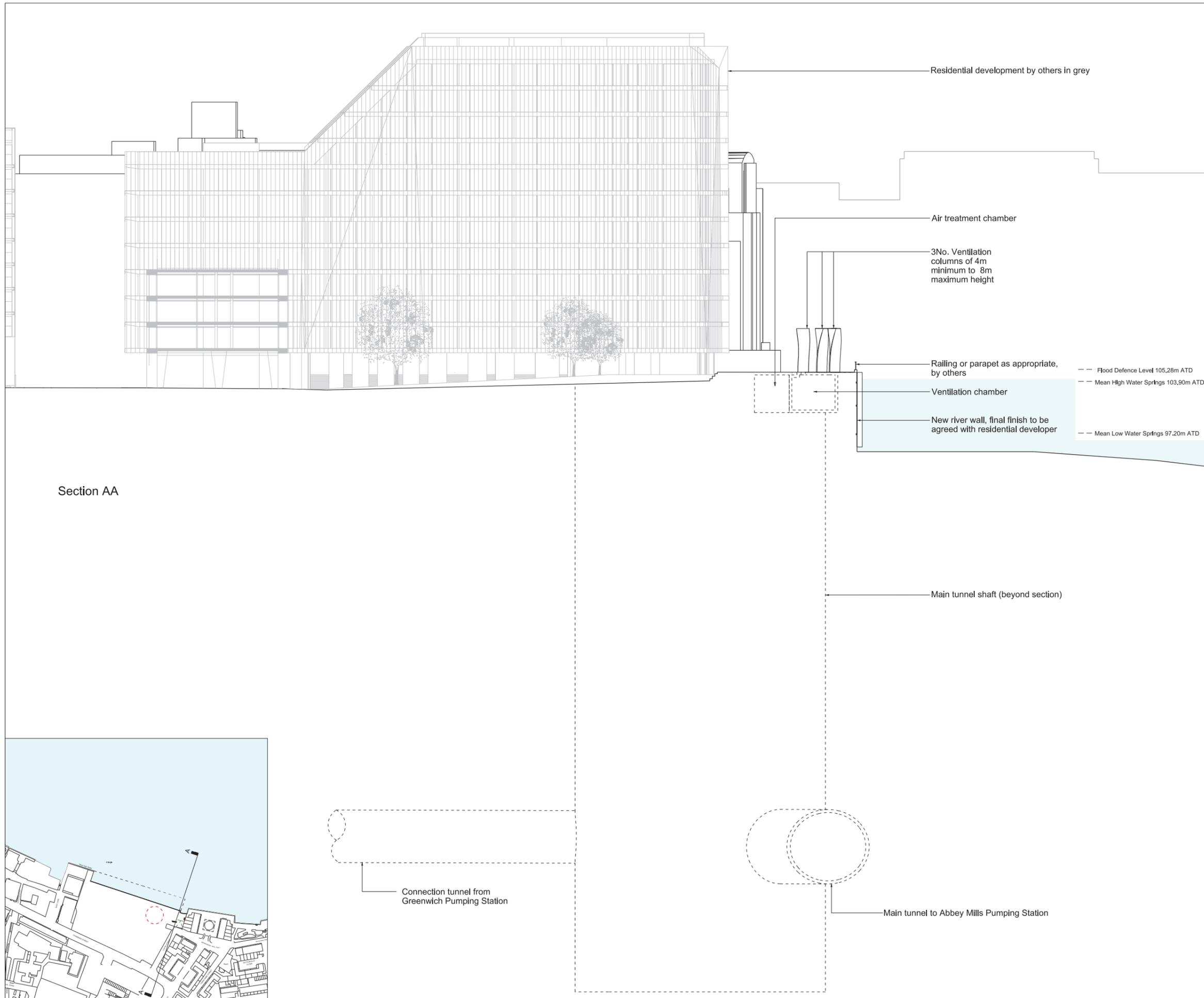
1. All dimensions and levels are approximate.
2. Any discrepancy between the location of structures and the parameters marked on the drawings are due to differences between the Ordnance Survey base and the topographic survey base, both of which have been used in the preparation of this drawing.
3. The above ground structures in the "save for the scale of above ground structures which is indicative" statement are those listed in Table 1 on the Site works parameter plan

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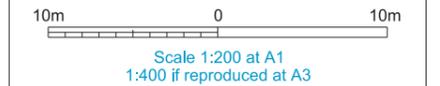


Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Notes:  
1. All dimensions and levels are approximate.  
2. The purpose of this section is to show the scale of the below ground infrastructure to be provided.



Section AA



ILLUSTRATIVE

Location  
**Chambers Wharf**  
London Borough of Southwark

Document Information  
**Application for Development Consent**  
Post residential development  
Section AA  
Book of plans - section 21  
DCO-PP-19X-CHAWF-210011  
January 2013



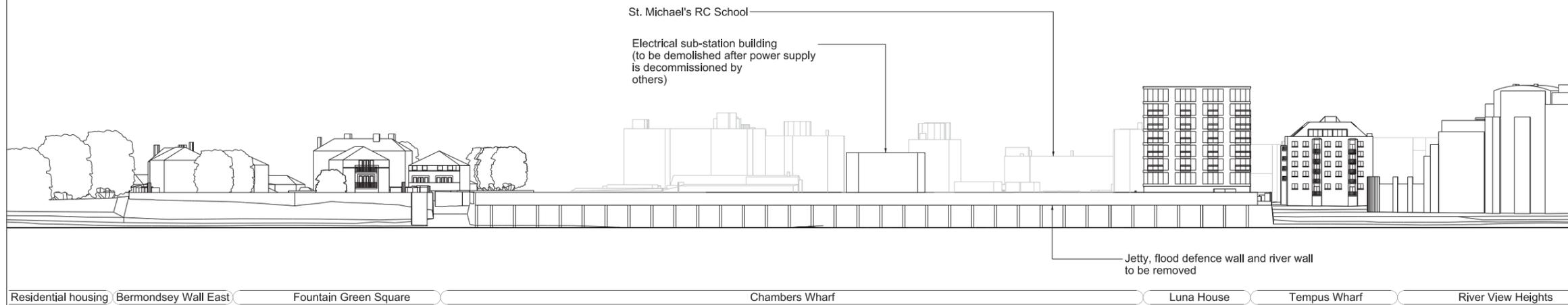
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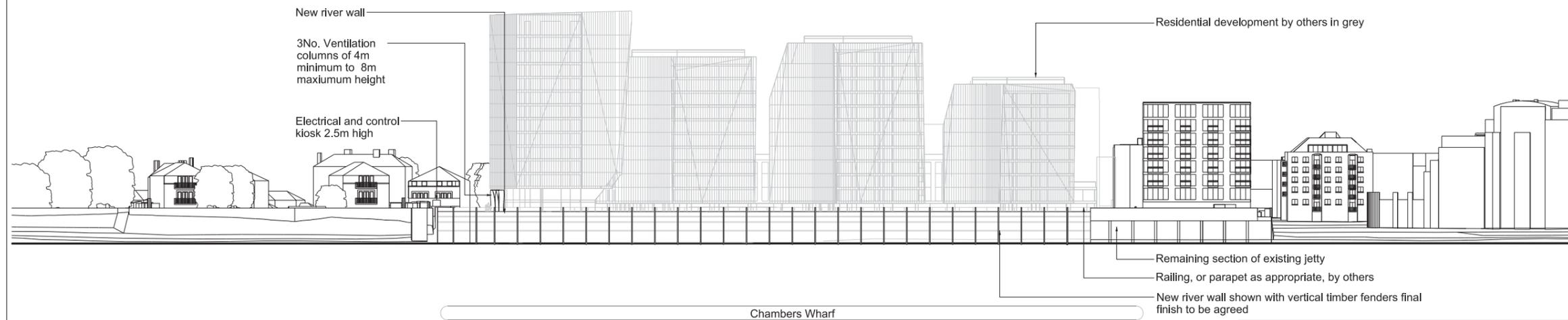
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**Notes:**

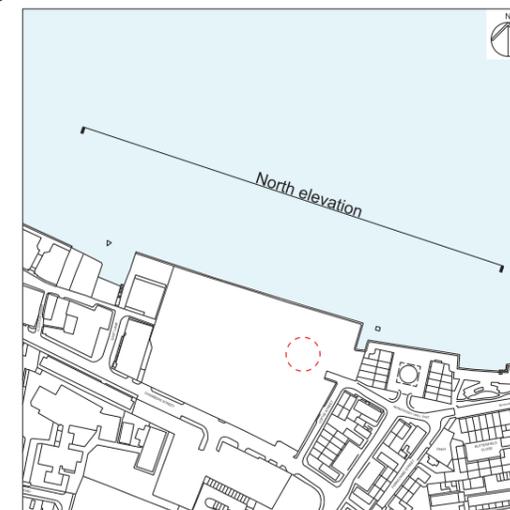
1. All dimensions and levels are approximate.



**As existing North elevation**



**Post residential development North elevation**



**ILLUSTRATIVE**

**Location**  
Chambers Wharf  
London Borough of Southwark

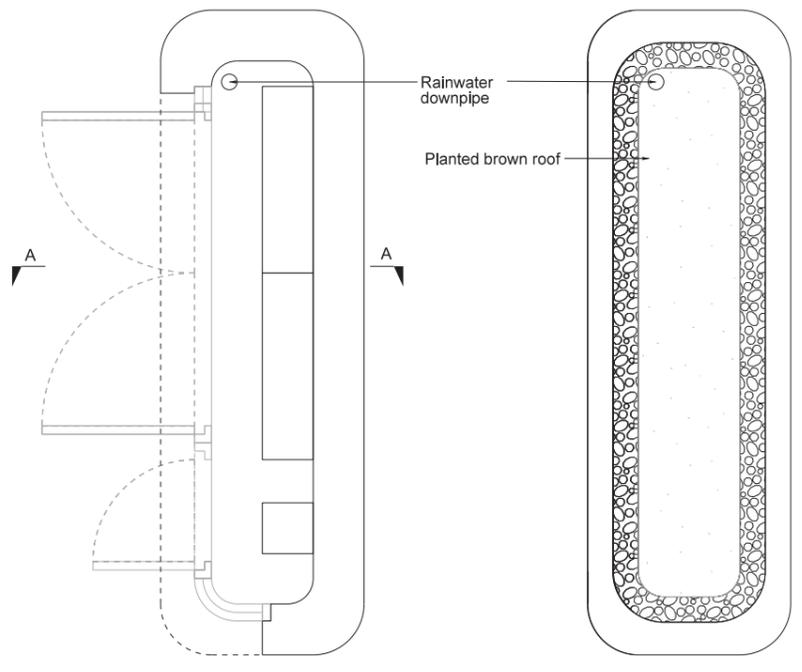
**Document Information**  
**Application for Development Consent**  
As existing and post residential development  
North elevation  
Book of plans - section 21  
DCO-PP-19X-CHAWF-210012  
January 2013



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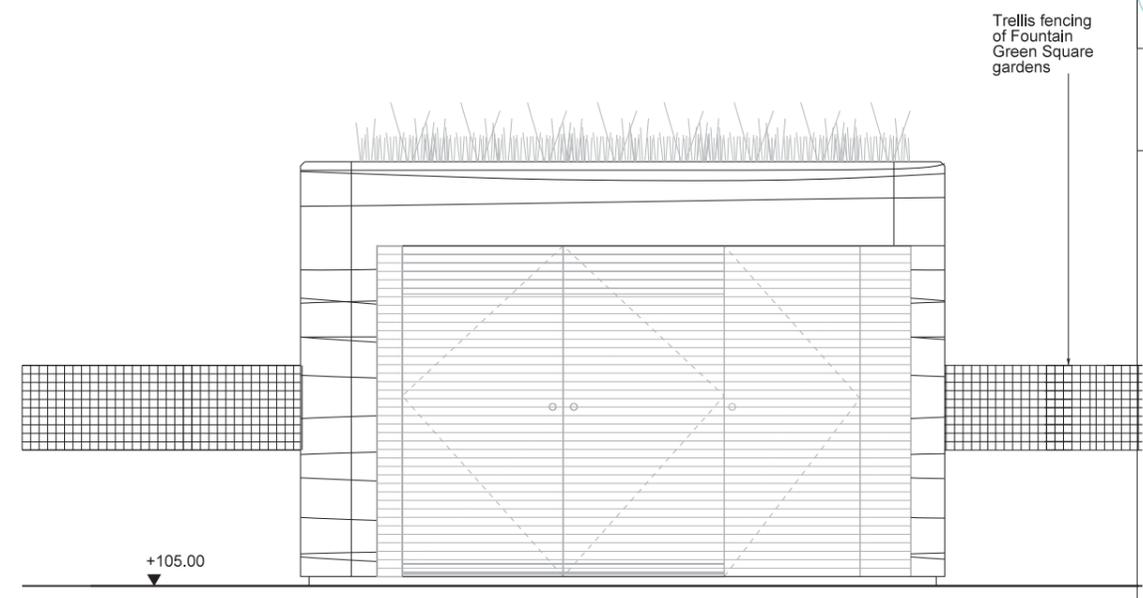


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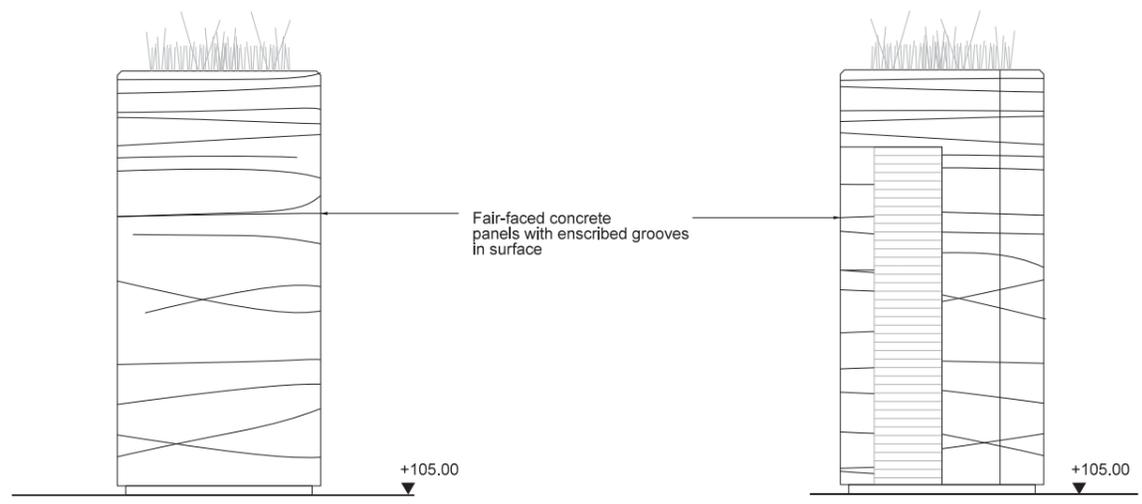


Plan at ground level

Roof plan

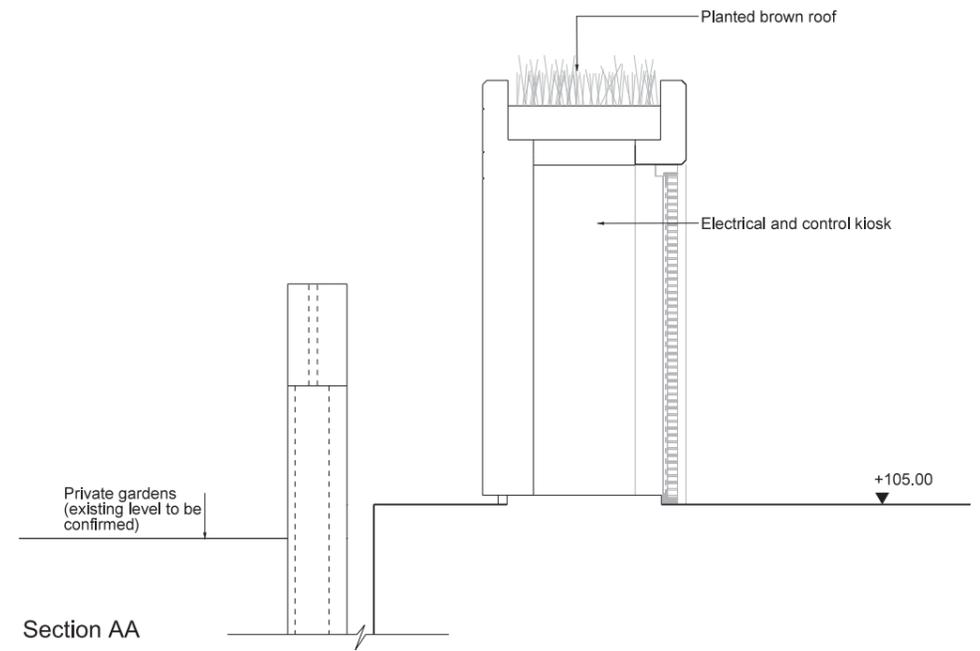


West elevation

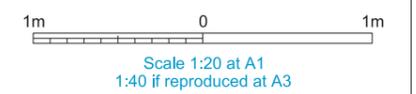


North elevation

South elevation



Section AA



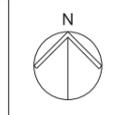
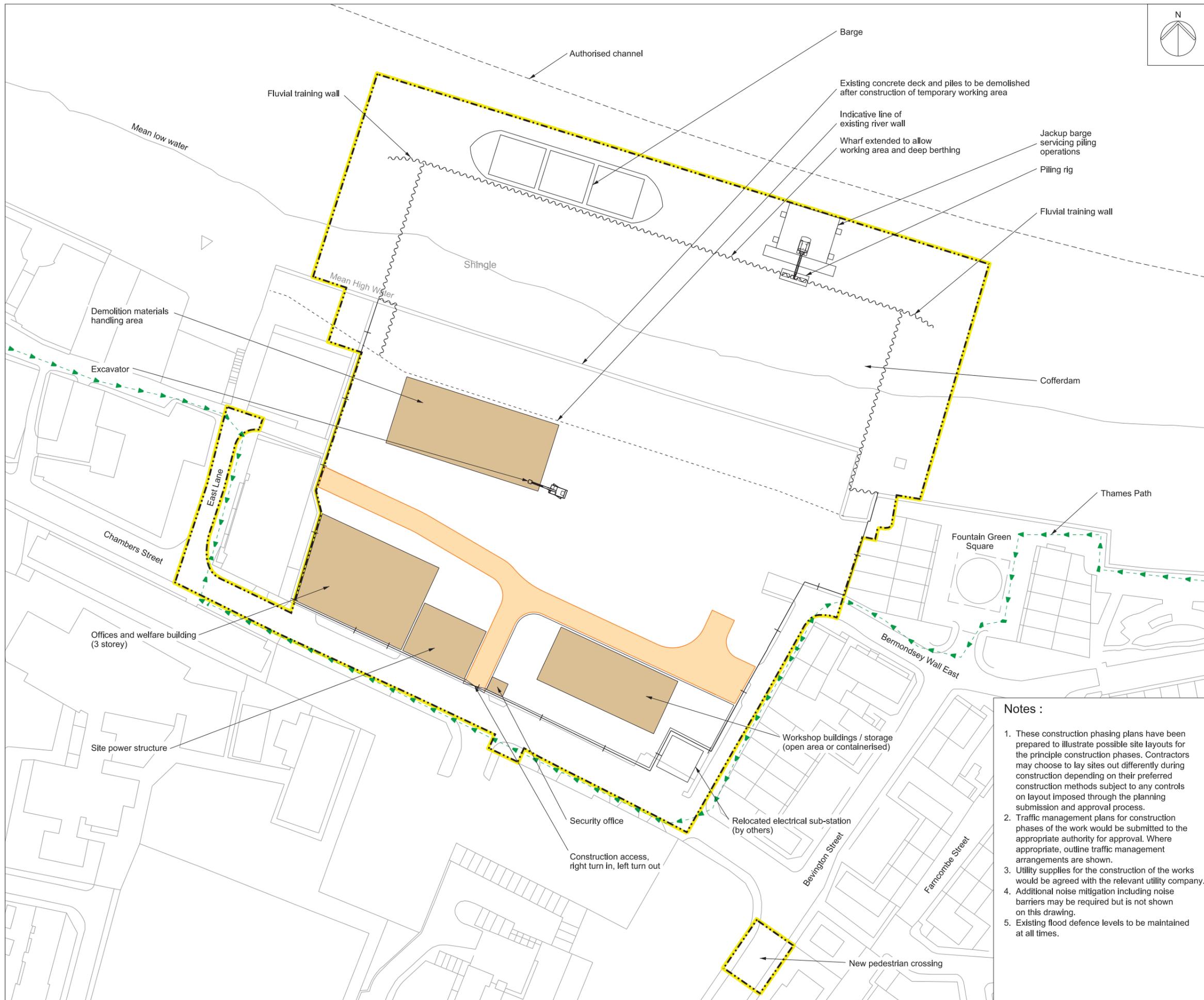
**ILLUSTRATIVE**  
Save for the scale of the kiosk which is indicative

**Location**  
Chambers Wharf  
London Borough of Southwark

**Document Information**  
Application for Development Consent  
Kiosk design intent

Book of plans - section 21  
DCO-PP-19X-CHAWF-210013  
January 2013





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**Key:**

	Limits of land to be acquired or used (LLAU)
	Hoarding
	Maximum extent of working area
	Existing public right of way
	Site access
	Access / haul route
	Sheet piles



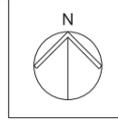
- Notes :**
1. These construction phasing plans have been prepared to illustrate possible site layouts for the principle construction phases. Contractors may choose to lay sites out differently during construction depending on their preferred construction methods subject to any controls on layout imposed through the planning submission and approval process.
  2. Traffic management plans for construction phases of the work would be submitted to the appropriate authority for approval. Where appropriate, outline traffic management arrangements are shown.
  3. Utility supplies for the construction of the works would be agreed with the relevant utility company.
  4. Additional noise mitigation including noise barriers may be required but is not shown on this drawing.
  5. Existing flood defence levels to be maintained at all times.

**ILLUSTRATIVE**

**Location**  
Chambers Wharf  
London Borough of Southwark

**Document Information**  
Application for Development Consent  
Construction phases - phase 1  
Site setup  
Book of plans - section 21  
DCO-PP-19X-CHAWF-210014  
January 2013



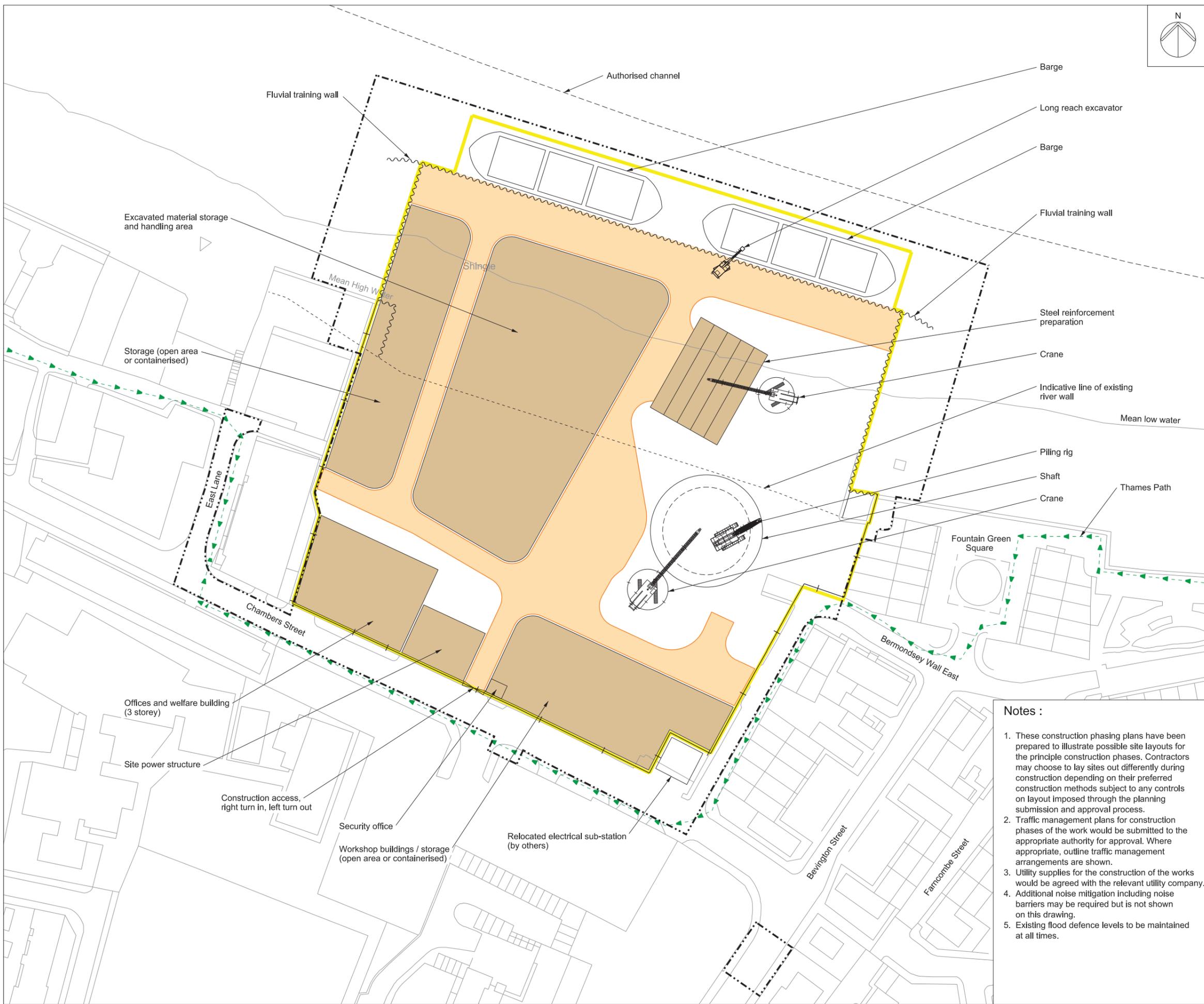


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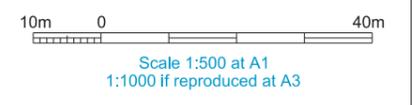


Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

- Key:**
- Limits of land to be acquired or used (LLAU)
  - Hoarding
  - Maximum extent of working area
  - Existing public right of way
  - Site access
  - Access / haul route
  - Sheet piles



- Notes :**
1. These construction phasing plans have been prepared to illustrate possible site layouts for the principle construction phases. Contractors may choose to lay sites out differently during construction depending on their preferred construction methods subject to any controls on layout imposed through the planning submission and approval process.
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  3. Utility supplies for the construction of the works would be agreed with the relevant utility company.
  4. Additional noise mitigation including noise barriers may be required but is not shown on this drawing.
  5. Existing flood defence levels to be maintained at all times.

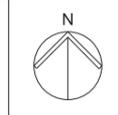


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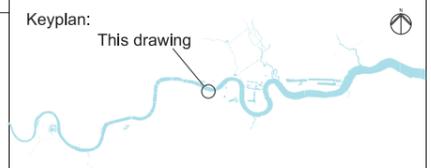
**Location**  
Chambers Wharf  
London Borough of Southwark

**Document Information**  
**Application for Development Consent**  
Construction phases - phase 2  
Shaft construction  
Book of plans - section 21  
DCO-PP-19X-CHAWF-210015  
January 2013





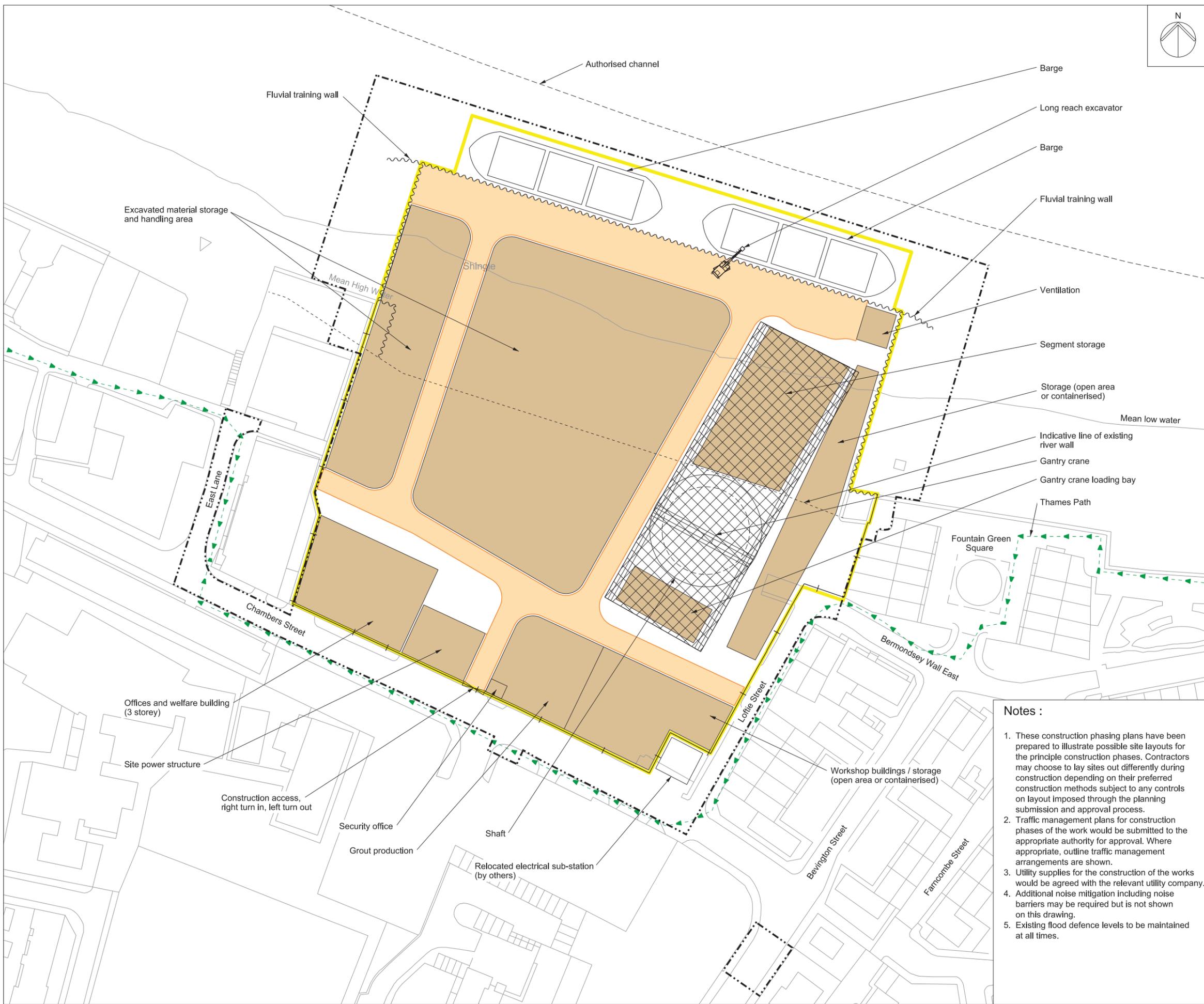
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**Key:**

	Limits of land to be acquired or used (LLAU)
	Hoarding
	Maximum extent of working area
	Existing public right of way
	Site access
	Access / haul route
	Sheet piles
	Noise enclosure over shaft and gantry crane



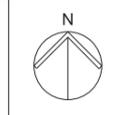
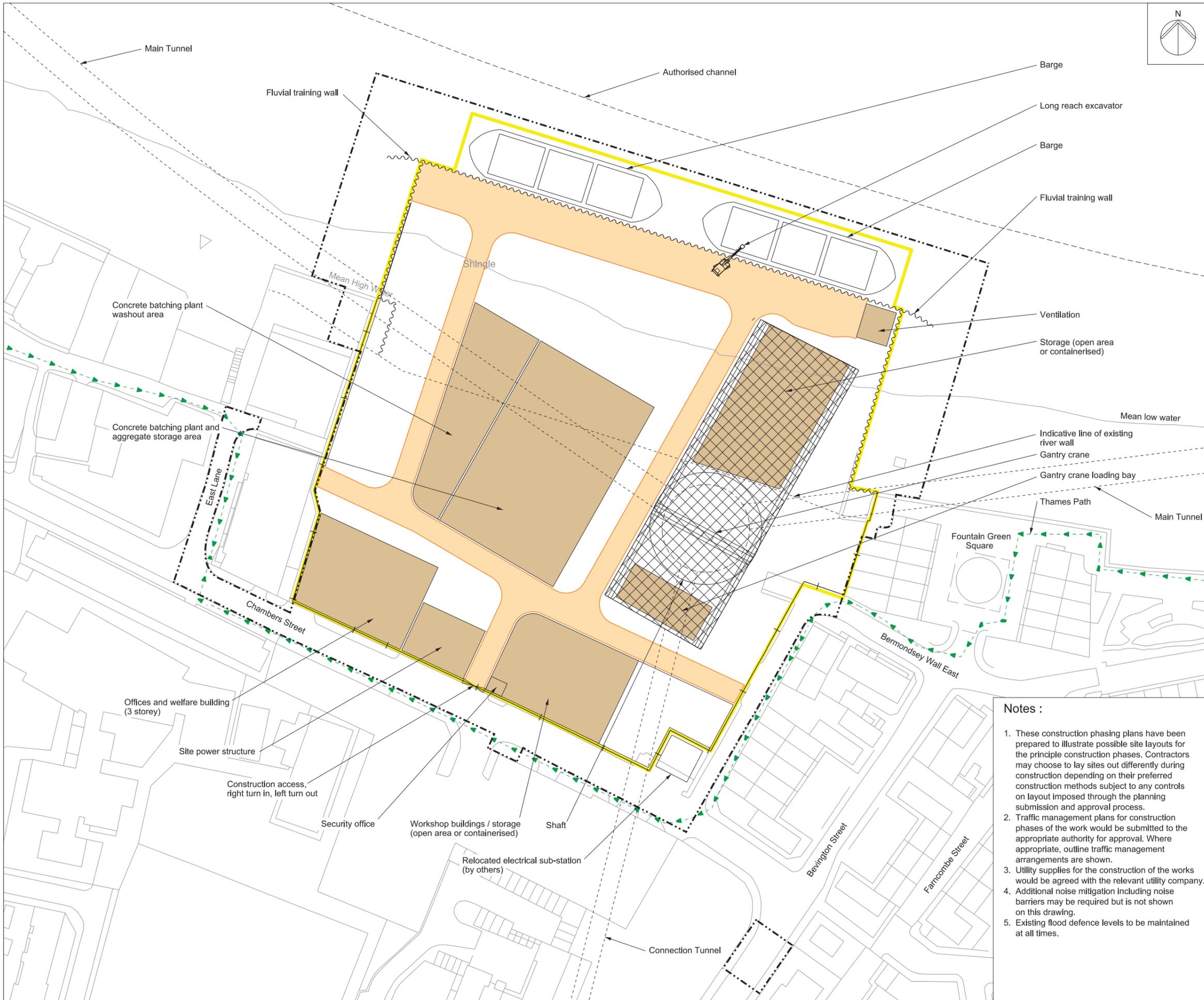
- Notes :**
1. These construction phasing plans have been prepared to illustrate possible site layouts for the principle construction phases. Contractors may choose to lay sites out differently during construction depending on their preferred construction methods subject to any controls on layout imposed through the planning submission and approval process.
  2. Traffic management plans for construction phases of the work would be submitted to the appropriate authority for approval. Where appropriate, outline traffic management arrangements are shown.
  3. Utility supplies for the construction of the works would be agreed with the relevant utility company.
  4. Additional noise mitigation including noise barriers may be required but is not shown on this drawing.
  5. Existing flood defence levels to be maintained at all times.

**ILLUSTRATIVE**

**Location**  
**Chambers Wharf**  
 London Borough of Southwark

**Document Information**  
**Application for Development Consent**  
 Construction phases - phase 3  
 Tunnelling  
 Book of plans - section 21  
 DCO-PP-19X-CHAWF-210016  
 January 2013





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**Key:**

	Limits of land to be acquired or used (LLAU)
	Hoarding
	Maximum extent of working area
	Existing public right of way
	Site access
	Access / haul route
	Sheet piles
	Noise enclosure over shaft and gantry crane



Scale 1:500 at A1  
1:1000 if reproduced at A3

**Notes :**

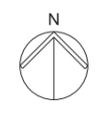
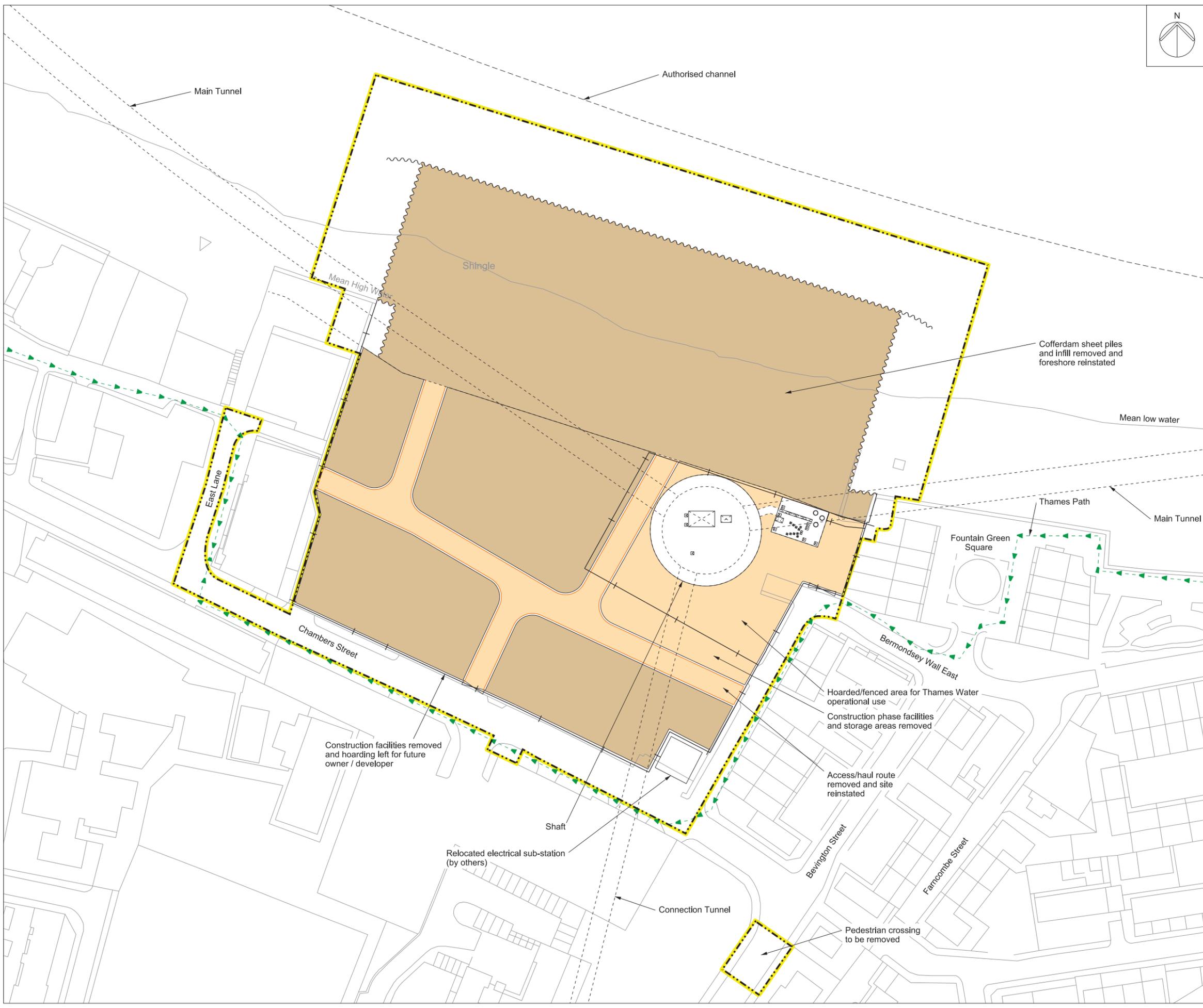
1. These construction phasing plans have been prepared to illustrate possible site layouts for the principle construction phases. Contractors may choose to lay sites out differently during construction depending on their preferred construction methods subject to any controls on layout imposed through the planning submission and approval process.
2. Traffic management plans for construction phases of the work would be submitted to the appropriate authority for approval. Where appropriate, outline traffic management arrangements are shown.
3. Utility supplies for the construction of the works would be agreed with the relevant utility company.
4. Additional noise mitigation including noise barriers may be required but is not shown on this drawing.
5. Existing flood defence levels to be maintained at all times.

**ILLUSTRATIVE**

**Location**  
Chambers Wharf  
London Borough of Southwark

**Document Information**  
**Application for Development Consent**  
Construction phases - phase 4  
Secondary lining  
Book of plans - section 21  
DCO-PP-19X-CHAWF-210017  
January 2013





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- Key:**
- Limits of land to be acquired or used (LLAU)
  - Hoarding
  - Maximum extent of working area
  - Existing public right of way
  - Site access
  - Access / haul route
  - Sheet piles



## ILLUSTRATIVE

**Location**  
Chambers Wharf  
London Borough of Southwark

**Document Information**  
**Application for Development Consent**  
Construction phases - phase 5  
Site demobilisation  
Book of plans - section 18  
DCO-PP-19X-CHAWF-210018  
January 2013



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### **Thames Water Utilities Limited**

Clearwater Court, Vastern Road, Reading RG1 8DB

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DCO-DT-000-ZZZZ-050300

