

Thames Tideway Tunnel
Thames Water Utilities Limited



Application for Development Consent

Application Reference Number: WWO10001

Design and Access Statement

Doc Ref: **7.04**

Part 3

Chambers Wharf

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

Hard copy available in
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January 2013

Thames
Tideway Tunnel 
Creating a cleaner, healthier River Thames

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Section 22

Chambers Wharf

22.1 Introduction

22.1.1 A worksite is required in order to receive the main tunnel drive from Kirtling Street, and to drive the main tunnel to Abbey Mills Pumping Station. The site would also receive the Greenwich connection tunnel, which would intercept three CSOs located in the boroughs of Greenwich and Lewisham. The proposed development site is known as Chambers Wharf, which is located in the London Borough of Southwark.

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



Figure 22.1: Aerial photograph of the existing Chambers Wharf site with LLAU indicated

22.2 Existing site context

22.2.1 The site itself comprises previously developed land that has now been substantially cleared, an area of the River Thames foreshore and two small areas of roadway. Thames Water have acquired the land north of Chambers st for our proposed works.

22.2.2 The site is rectangular in shape and includes an existing concrete deck 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.

22.2.3 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 and is required for the diversion of utilities.

22.2.4 The site has been substantially cleared and is currently hoarded off while awaiting construction of an approved residential development (see figure 22.9 to 22.11). The residential development comprises six mixed commercial/residential buildings (four to the north of Chambers Street and two to the south). The buildings would provide 587 residential units and 275m² of flexible Class A/B1 floorspace at ground-floor level along Chambers Street; 203m² 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.

22.2.5 The site is designated by the London Borough of Southwark as an Archaeological Priority Zone and falls within the Thames Policy Area. The site does not fall within a conservation area.

22.2.6 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.

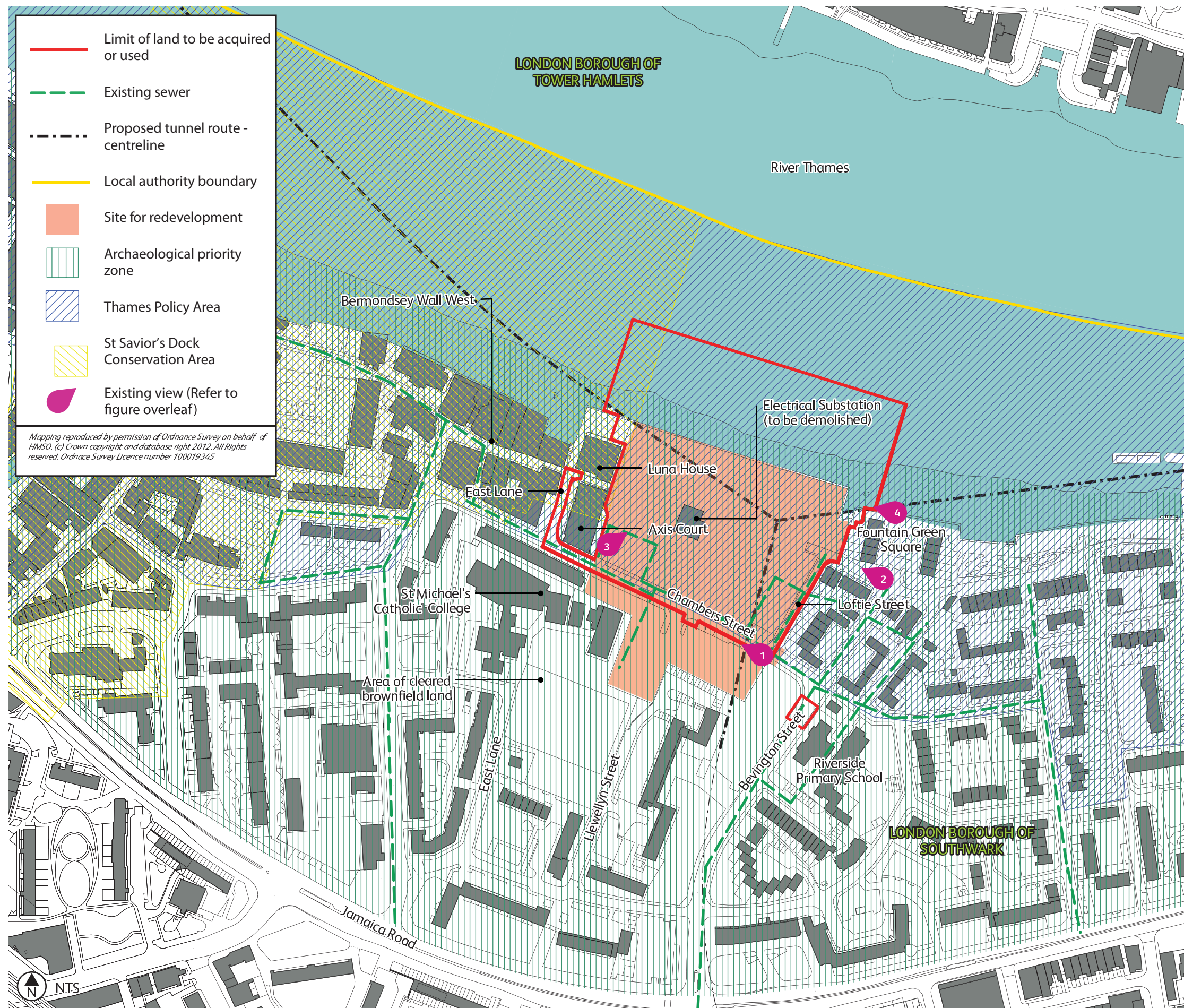


Figure 22.2: Existing site plan



Figure 22.3: View on Chambers Street



Figure 22.4: View east of Fountain Green Square



Figure 22.5: View within site



Figure 22.6: Existing river wall and jetty



Figure 22.7: Aerial view of site showing existing structures

22.2.7 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.

22.2.8 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.

22.2.9 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.

22.2.10 An area of cleared brownfield land, which is subject to the planning permission for residential development lies to the south across Chambers Street.

22.2.11 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.

22.2.12 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.

Existing site access and movement

22.2.13 The site is currently vacant and is not publicly accessible. There are existing vehicle entrances on Loftie Street to the northeast and on Chambers Street to the southwest which served the previous industrial uses on this site.

Highways

22.2.14 Jamaica Road (A200) forms part of the Strategic Road Network and is characterised by high levels of traffic. Bevington Street connects to Jamaica Road and forms part of the local highway network. Chambers Street is also part of the local highway network and at present there are hoarded vacant development sites along both sides of the street.

Car parking

20.2.15 Limited on-street parking is available along Bevington Street, Chambers Street, Loftie Street and Bermondsey Wall East.

20.2.16 Parking is not permitted along East Lane, Flockton Street or Bermondsey Wall West to the west of the site. Jamaica Road has designated bus lanes and on-street parking is not permitted.

Public transport

20.2.17 Bermondsey Underground Station is located approximately 500m to the southeast of the site. A number of bus services run along Jamaica Road and further connections are available on Bevington Street and Chambers Street.

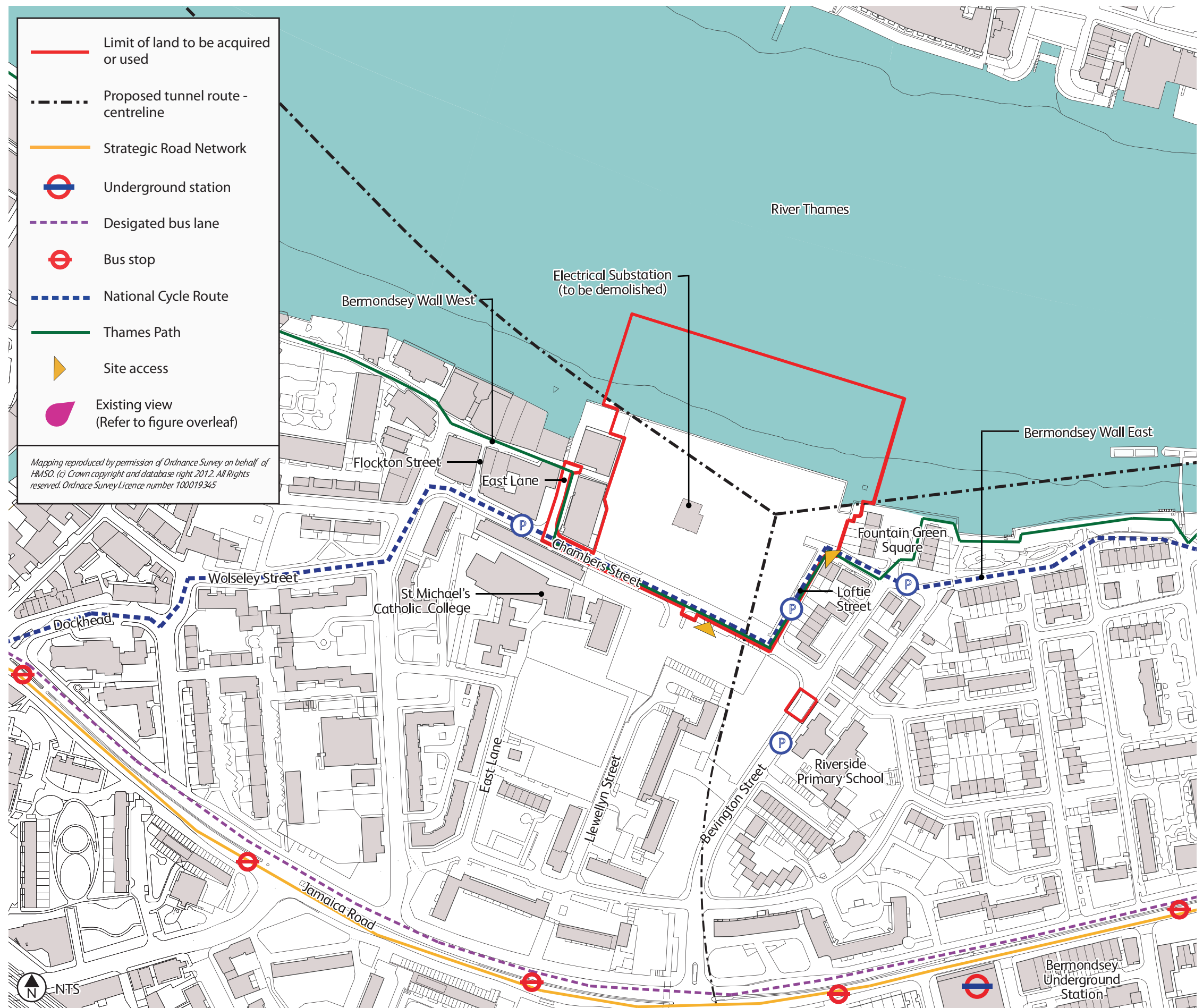


Figure 22.8: Existing site analysis



Figure 22.9: Image of proposed approved residential development alongside riverwalk area at Chambers Wharf ©St James Group Limited



Figure 22.10: Image of proposed approved residential development opposite Chambers Wharf ©St James Group Limited



Figure 22.11: Image of proposed approved residential development ©St James Group Limited

Cycle routes

20.2.18 National Cycle Route 4 links Greenwich to Tower Bridge and runs along Chambers Street. The route continues along Loftie Street and Bermondsey Wall East to the east and along Wolseley Street and Dockhead to the west.

22.2.19 Cyclists are also permitted to use the bus lanes along Jamaica Road. Advanced cycle stop lines are provided on all arms of the Jamaica Road/Bevington Street/St James's Road junction.

Pedestrian routes

22.2.20 To the east of the site, the Thames Path generally follows the line of the river wall beyond Fountain Green Square. At present, the path runs around Chambers Wharf along Chambers Street and Loftie Street and connects to Bermondsey Wall West. The approved residential scheme for the site includes permission to construct a new Thames Path along the riverfront of the site. We have designed and located our proposed works to integrate with this proposed area of public realm and to facilitate the implementation of the new path along the river front.

22.2.21 All other pedestrian movements around the site are via footways provided as part of the local highway network.

Historical context

22.2.22 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.

22.2.23 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.

22.2.24 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.

22.2.25 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.

22.2.26 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 latter half of the 20th century and its jetty 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.

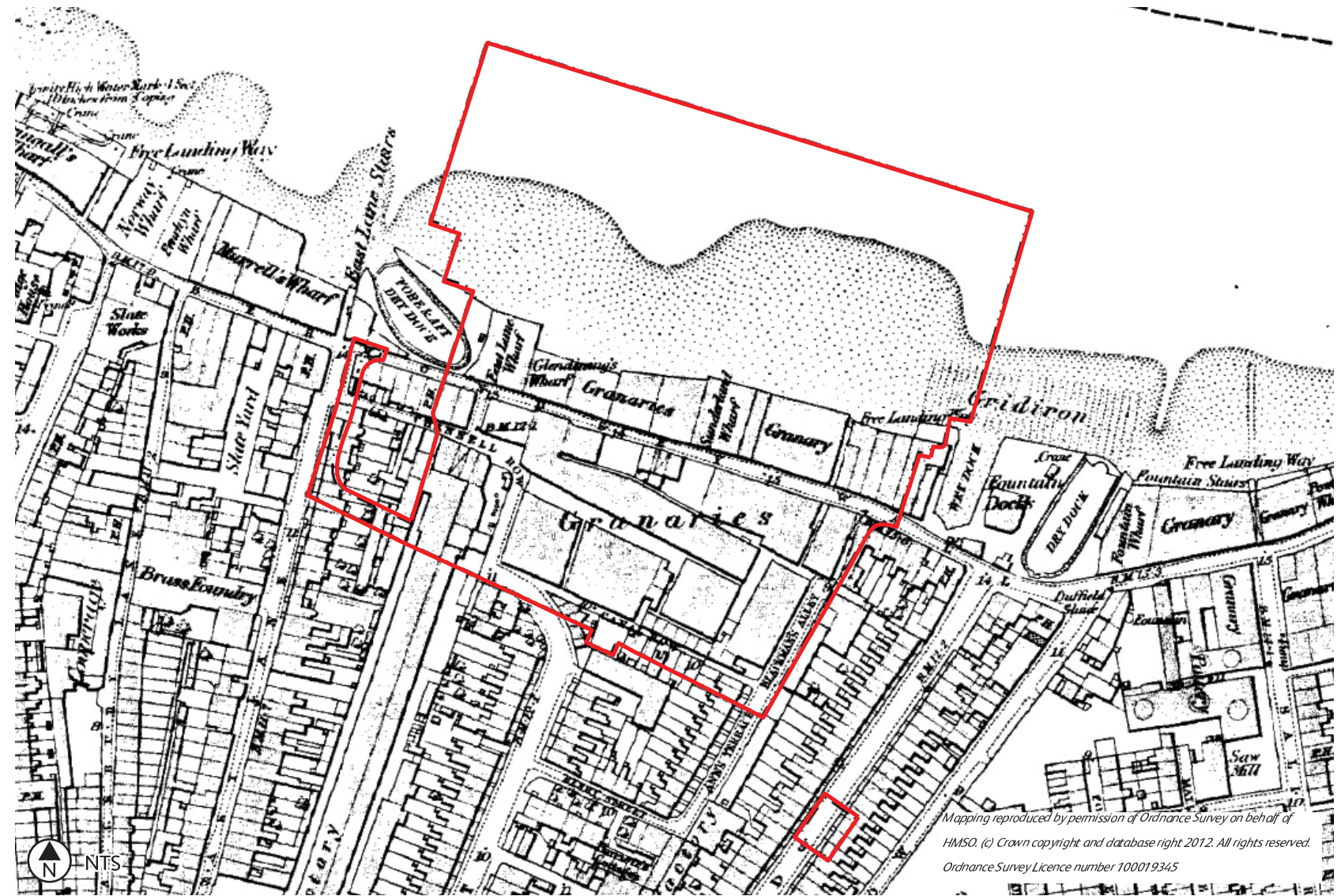


Figure 22.12: Historic Map 1862-1895

Site analysis: Opportunities and constraints

The site-specific design opportunities included:

- a. Design and locate the works to enhance the future new area of public realm along the river front, which would be implemented as part of the approved residential development.
- b. Remove the existing concrete jetty structure and construct a new river wall to improve the appearance of the site and its interface with the River Thames.
- c. Design appropriate, high-quality above-ground structures that could enhance the public realm in this prominent location.

The site-specific design constraints included:

- a. There are sensitive receptors in close proximity including two schools, residential properties and offices.
- b. Our proposals must be compatible with the parameters of the approved residential development.
- c. The shaft must be located in accordance with the alignment of the main tunnel.
- d. The shaft must be of sufficient size to receive two tunnel boring machines and launch another.

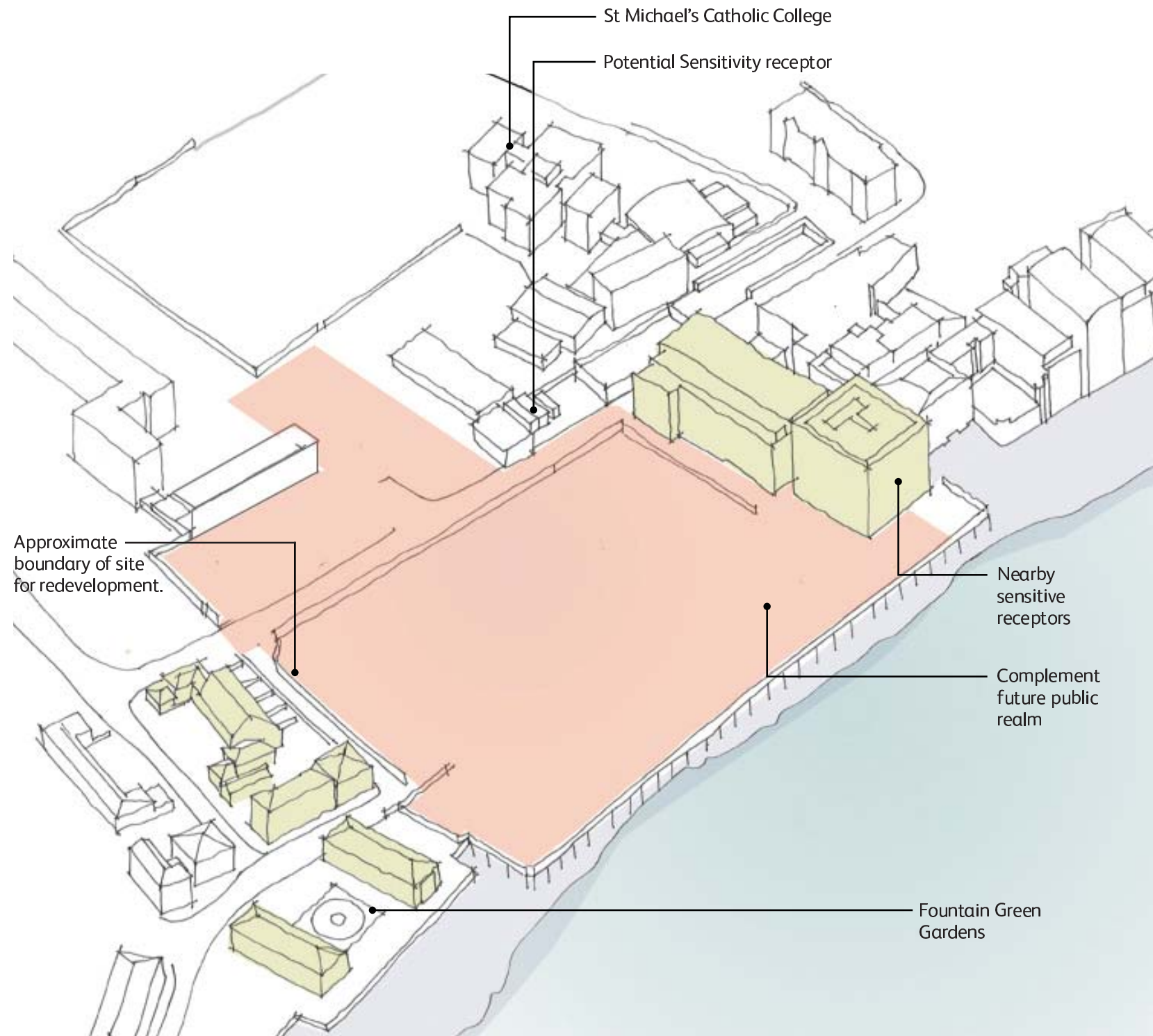


Figure 22.13: Existing site opportunities and constraints sketch

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22.3 Design evolution and alternatives

22.3.1 As the majority of the infrastructure for the project would be below ground, the key design objective for the permanent above-ground works was to integrate the functional components into the surroundings. The site-specific design objective at Chambers Wharf was to design the structures with sufficient flexibility to integrate them with the future area of public realm of the approved residential development, which has not yet been designed in detail.

22.3.2 The design of our proposals for Chambers Wharf was also significantly influenced by an extensive process of stakeholder engagement and design review. In order to ensure design quality, we undertook a review hosted by the Design Council CABI. We also held various pre-application meetings with the London Borough of Southwark and other strategic stakeholders such as English Heritage. More information on our public consultation process is provided in the *Consultation Report*, which accompanies the application.

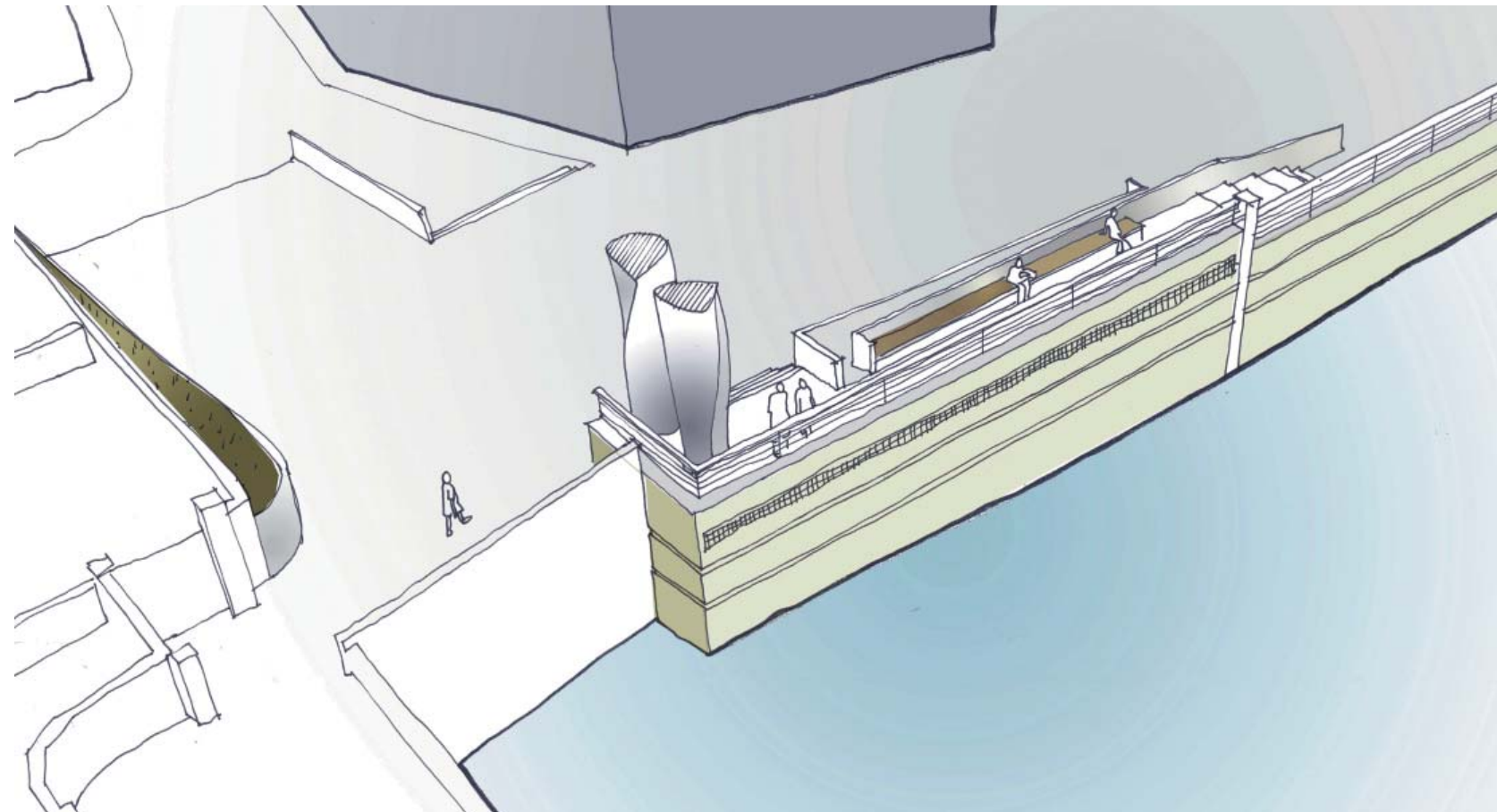


Figure 22.14: Design development sketch

October 2010

Phase one consultation

22.3.3 The Chambers Wharf site was not presented at phase one consultation. At this stage, our preferred site to construct the main tunnel and to connect flows from the CSOs in Greenwich and Lewisham was King's Stairs Gardens, which is a highly valued public open space located approximately 500m to the east of Chambers Wharf, also in the London Borough of Southwark.

22.3.4 We held drop-in sessions at the Beormund Community Centre in Bermondsey on 11 and 12 October 2010 to inform the local community of the potential use of King's Stairs Gardens. We also gathered views on local issues that we should take account of in developing our proposals.

22.3.5 There was a change in circumstances at the Chambers Wharf site towards the end of the phase one consultation period and the site was put up for sale. Thames Water purchased the property as a potential alternative site to King's Stairs Gardens.



Figure 22.15: Proposed view from phase one consultation King's Stairs Gardens

Design development

22.3.6 Following phase one consultation, we considered on-going consultation with stakeholders, new information that had become available, and also undertook further technical work. We then carried out a site selection back-check (see the *Final Report on Site Selection Process*, which accompanies the application, Volume 18, for details) and reviewed the tunnelling strategy.

20.3.7 Design work at this time focused on positioning the shaft so that it would not compromise the viability of the approved residential development. We developed a number of options for the location of the shaft on land and within the foreshore. We selected an inland location for construction of the shaft that would not preclude construction of the approved residential development and would not encroach into River Thames, in accordance with Environment Agency guidance.

22.3.8 In April 2011, we undertook interim engagement on the Chambers Wharf site. We held drop-in sessions with the surrounding community in order to understand any local issues concerning the potential use of the site. We reviewed and considered all of the comments received. As a result of our site selection back-check we selected Chambers Wharf as our preferred site.

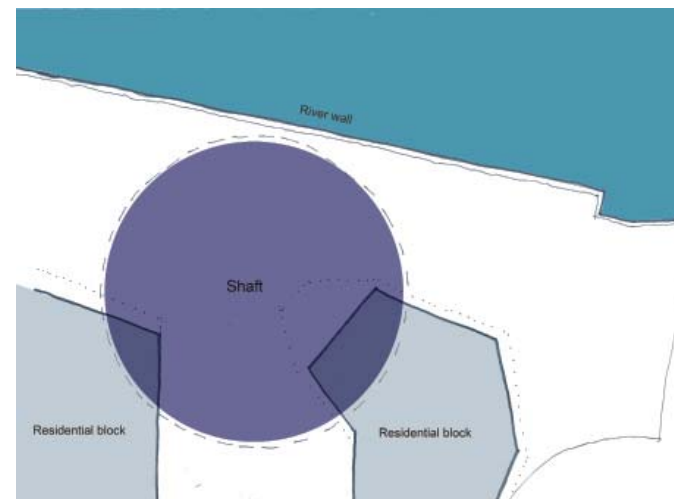


Figure 22.16: Design development shaft location option one sketch

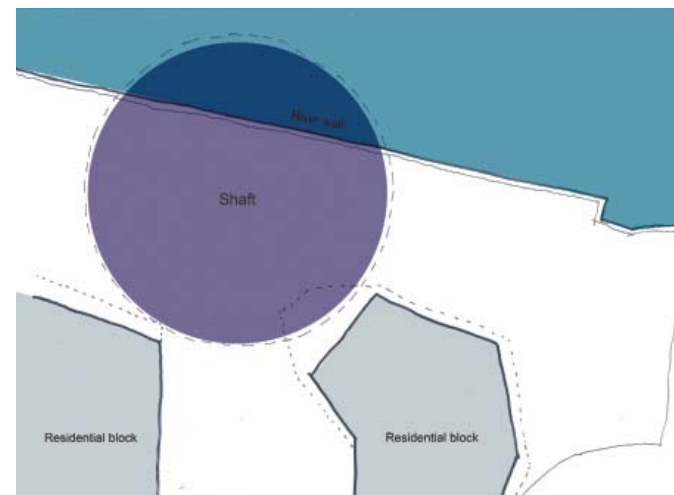


Figure 22.17: Design development shaft location option two sketch

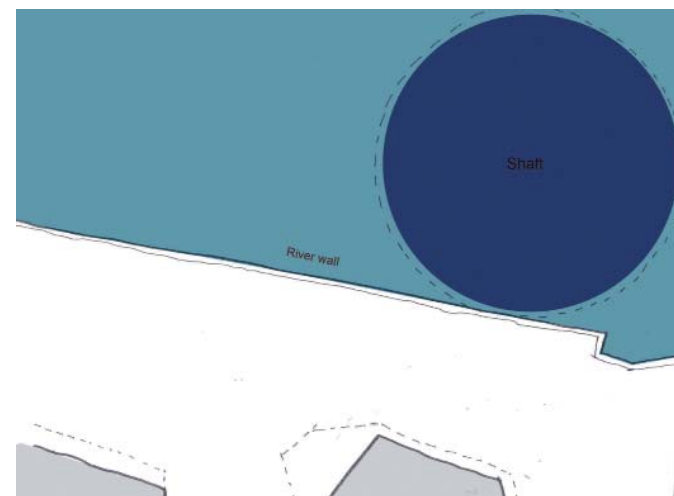


Figure 22.18: Design development shaft location option three sketch

May 2011

CABE sketch review

22.3.9 We held a sketch review based on an initial assessment and sketched ideas for the site with the Design Council CABE in May 2011.

22.3.10 The Design Council CABE panel recognised the need to accommodate the proposed works within the site at Chambers Wharf, and saw it as an opportunity that could benefit both Thames Water and future implementation of the approved residential development. The panel recommended making the project works a focal point in the proposed area of public realm. It also suggested investigating how to better utilise the generous riverside space.

22.3.11 However, the residential developer advised that the operational structures were already appropriately positioned to integrate with the future redevelopment plans and proposed areas of public realm. Therefore the structures were not moved or made more prominent.

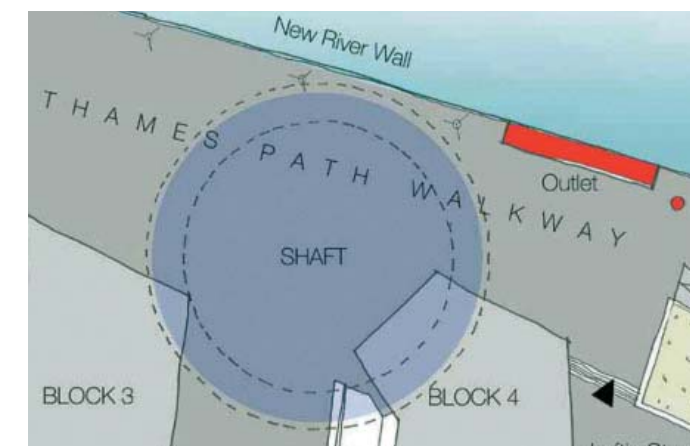


Figure 22.19: Diagram from Design Council CABE sketch review

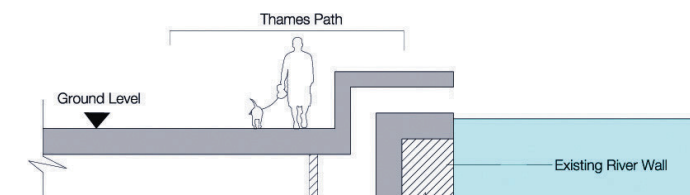


Figure 22.20: Section through river wall from Design Council CABE sketch review

November 2011

Phase two consultation

20.3.12 Chambers Wharf was presented as our preferred site at phase two consultation.

20.3.13 We held drop-in sessions at the Beormund Community Centre in Bermondsey on 24, 25 and 26 November 2011 in order to inform the local community of the proposed use of the site.

20.3.14 At phase two consultation, we proposed a raised viewing platform structure positioned against the river wall with stairs and a ramp from which to enjoy views of the river. The structure would house the ventilation equipment and include a horizontal vent facing the River Thames. We also proposed to include two signature ventilation columns and a free-standing kiosk on the eastern boundary of the site.

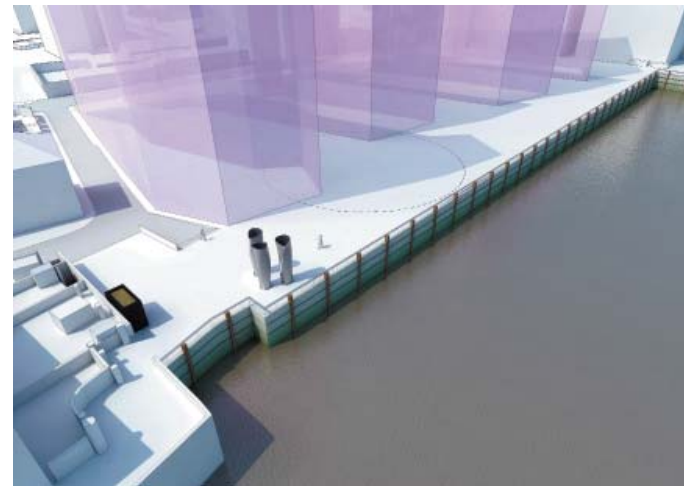


Figure 22.21: Proposed view from phase two consultation

July 2012

Section 48 publicity

20.3.15 Following phase two consultation, we considered all the comments received and undertook further design development. On 17 April 2012, we held a meeting with design officers from the London Borough of Southwark. Discussions focussed on design principles for the permanent above-ground works, including omitting the viewing platform structure, and other phase two consultation comments from the borough.

20.3.16 Following this meeting, we further simplified the design proposals. The raised viewing platform was considered an unnecessary obstruction and was therefore removed. This improved accessibility and the panoramic views of the River Thames from the future area of public realm. The above-ground structures were now limited to three signature ventilation columns and the electrical and control kiosk, which was reduced in size.

20.3.17 These changes were publicised at Section 48 publicity. There were no significant design developments at this site after this stage.



Figure 22.22: Proposed view from Section 48 publicity

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22.4 Proposed design

22.4.1 This section describes the amount, layout and scale of the proposed development and how the functional components would be integrated into the existing site.

22.4.2 The planning permission for the approved residential development requires the submission of detailed designs to the local authority for approval, including the landscape designs for the area of public realm surrounding the above-ground structures and the finish of the river wall. For this reason, we do not propose to implement any permanent landscaping.

Fixed principles

22.4.3 The Site works parameter plan defines the zones in which the proposed works would take place. The plan indicates the general location of the main tunnel shaft, ventilation columns, and the electrical and control kiosk.

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

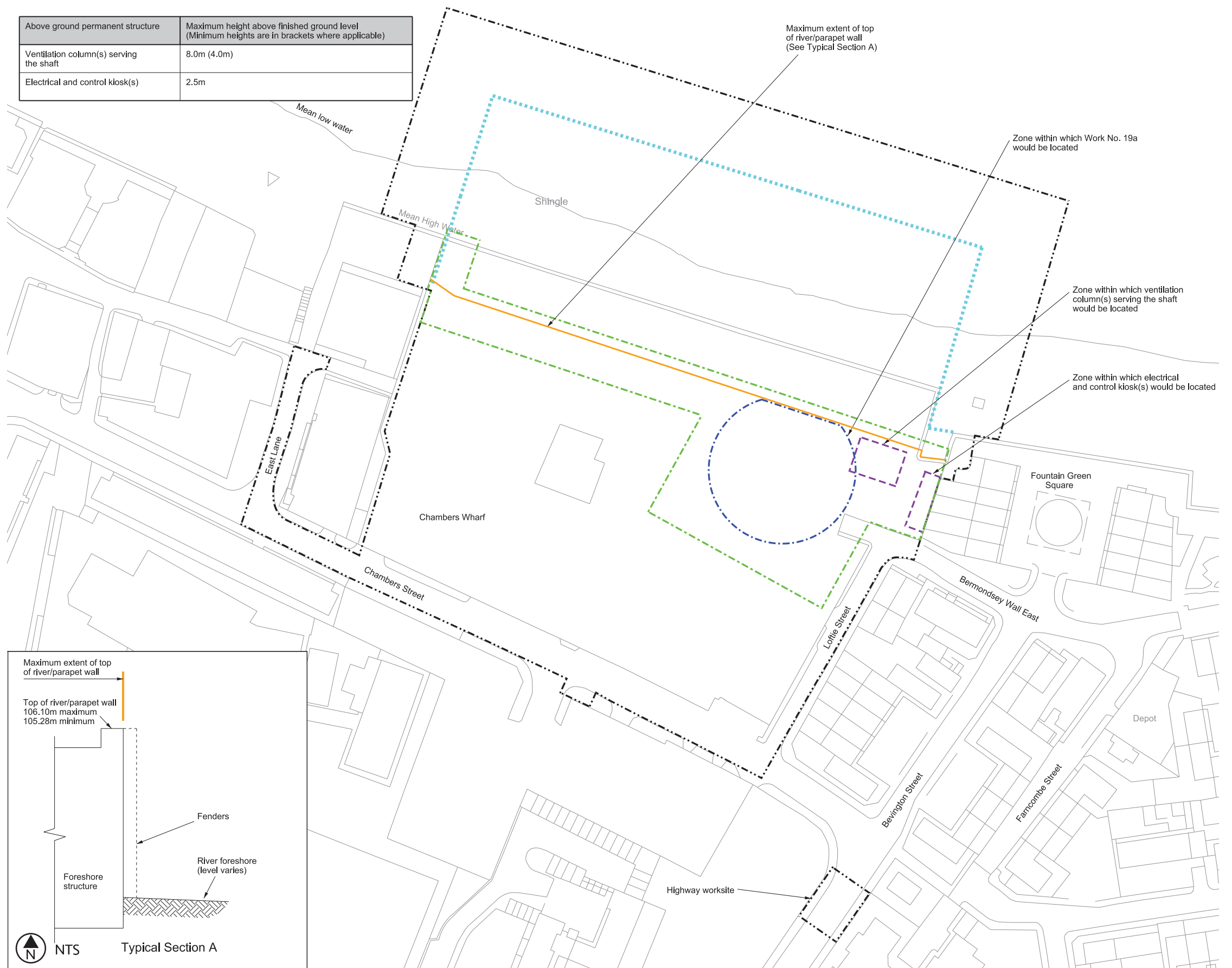


Figure 22.23: Site works parameter plan and section - refer to Site works parameter plan in the *Book of Plans*

Design objectives

22.4.5 There would be very few above-ground structures at Chambers Wharf. Once the project construction works are complete, the site would be available for redevelopment, in accordance with the planning permission and the London Borough of Southwark's Unitary Development Plan (2007). The structures must be integrated with the approved residential development while meeting the functional and access requirements.

22.4.6 Our main objectives included:

- a. Minimise the number of above-ground structures to enable future public realm designs to be open and uncluttered.
- b. Ensure that the main shaft, electrical and control kiosk and ventilation structures are accessible for maintenance purposes with minimum disruption to the approved residential development.
- c. Ensure that the above-ground structures incorporate a suitably high quality finish and could appropriately integrate with the desired surfacing and materials of the approved residential development.

22.4.7 The site falls within the Thames Policy area, which seeks to ensure that new developments respect the amenity of the Thames riverside and achieve high standards of architectural and urban design. We believe that the siting and high quality of our proposed designs is consistent with Saved Policy 3.29 of the Unitary Development Plan. The project's proposed use of the site would also comply with Policy 5.14 of the *London Plan 2011*.

22.4.8 The use and programme for the site would be determined by the residential developer.



Figure 22.24: Proposed aerial view of site

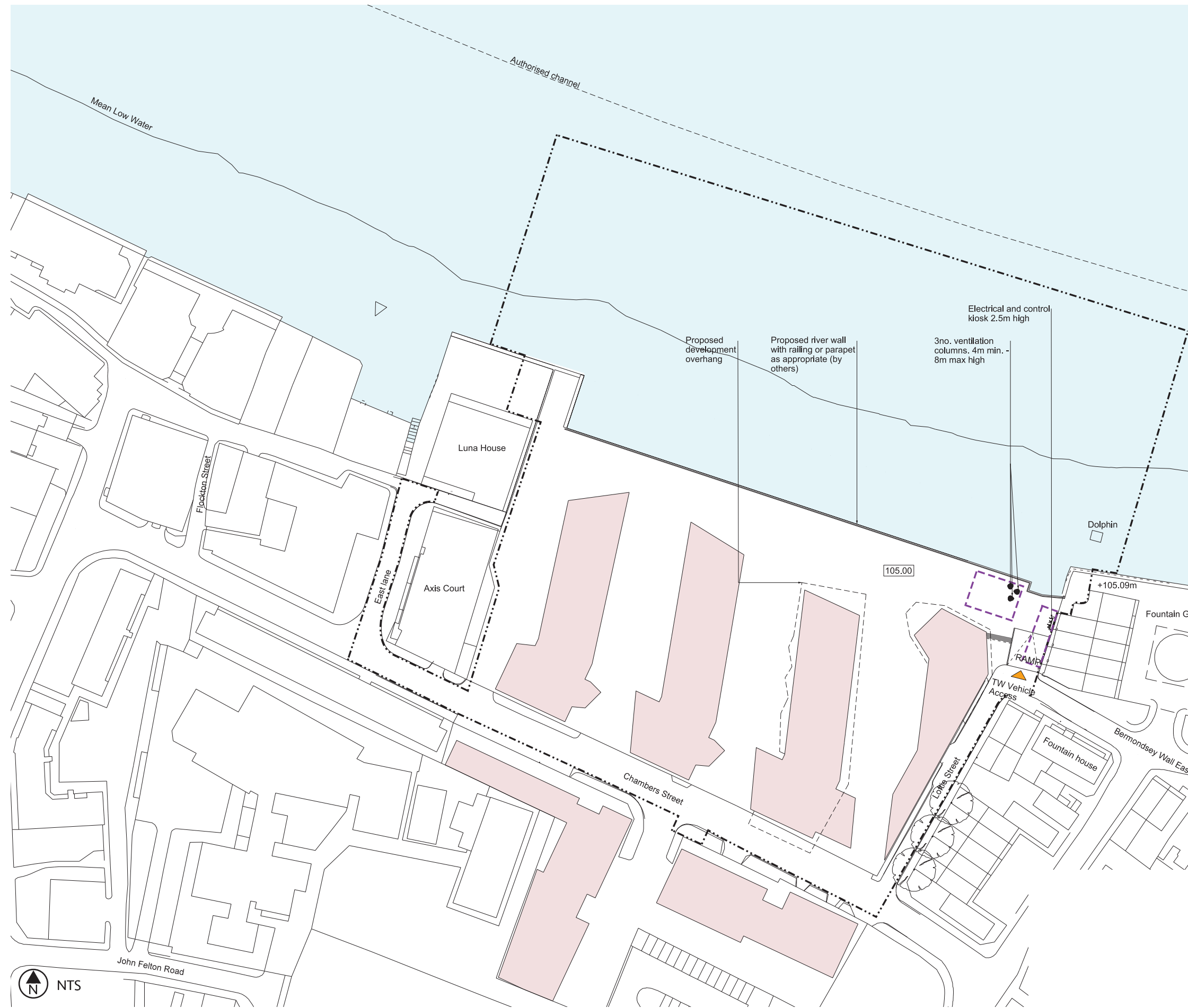


Figure 22.25: Proposed site features plan - refer to Proposed site features plan - overall in the Book of Plans

Integration of the functional components

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

- a main tunnel shaft
- an air treatment chamber
- associated ducts.

22.4.10 Post construction, the following structures would be visible on the site:

- three signature ventilation columns
- one electrical and control kiosk
- a new river wall with built-in flood defences.

Main tunnel shaft

22.4.11 The main tunnel shaft would be approximately 25m in internal diameter. It would be ventilated by means of an air treatment chamber and an associated connection culvert.

20.4.12 The shaft would be positioned in the northeastern corner of the site in order to optimise the alignment of the main tunnel. It would also ensure that the majority of the site remains free from infrastructure and available for the approved residential redevelopment. The proposed location would also limit the extent of any required modifications to the configuration of the basement of the residential development.

Ventilation columns

22.4.13 The number and size of the ventilation columns are determined by the air management requirements for the site. At Chambers Wharf, we propose to include three ventilation columns up to 8m high.

22.4.14 The columns would feature the project's 'signature' design and would be similar in size and appearance to pieces of public art. The columns must be located near the main tunnel shaft and would sit within the

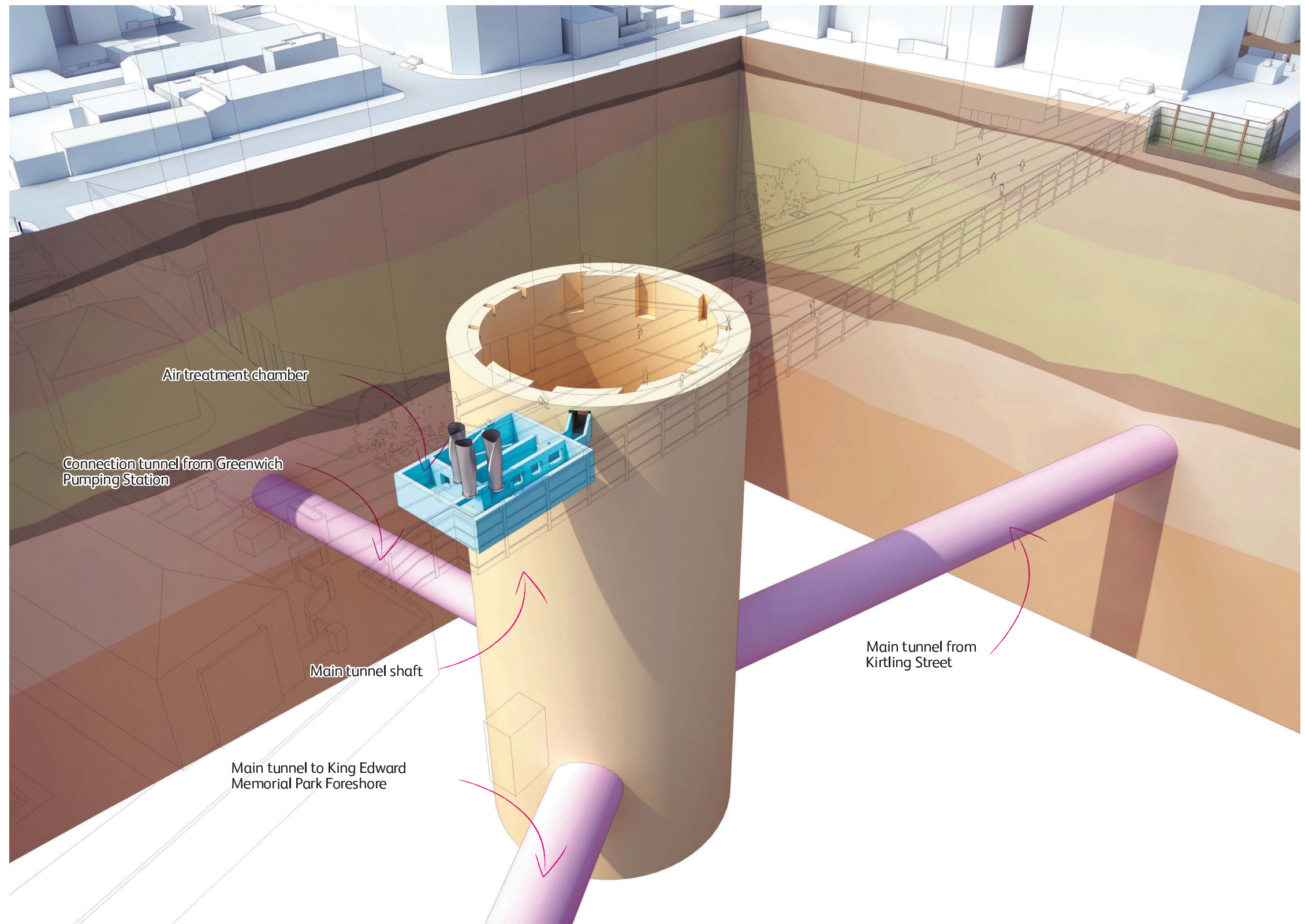


Figure 22.26: Proposed functional components diagram: below ground view



Figure 22.27: Proposed functional components diagram: above ground view

future area of public realm that would include the new Thames Path. In this position they could serve as an interesting feature at the river's edge and celebrate the legacy of the project and the improvements to the quality of the tidal river Thames.

Electrical and control kiosk

22.4.15 The electrical and control kiosk would be a rectangular structure approximately 2.5m high. It would be located on the eastern boundary of the site near the main tunnel shaft, adjacent to the rear garden wall of the residential properties on Fountain Square. It would be unobtrusive in this position and would not clutter the future area of public realm or interfere with the alignment reserved for the Thames Path along the river.

22.4.16 The kiosk and all the other above-ground structures would be of basic construction and clad in high quality materials to blend in with the future area of public realm and buildings of the approved residential development.

Access covers

22.4.17 Areas of hardstanding would be included to facilitate maintenance vehicle access and incorporate access covers to the below-ground infrastructure.

22.4.18 The planning permission for the approved residential development includes raising the ground level along the riverside to by approximately 1m to 105m Above Datum. For this reason, the project's cover slabs and access covers would be finished above existing ground level.

22.4.19 The access covers would sit within the riverside walkway and future area of public realm of the approved residential development. The residential developer would be required to submit a comprehensive landscape scheme to the local authority for the proposed design, materials and finishes for the approved development.

22.4.20 Where practicable, we would provide access covers that could be in-filled with the surrounding paving treatment in order to integrate them into the surfacing and create a unified finish throughout the development.

River wall

22.4.21 The removal of the disused wharf deck initially formed part of the approved residential planning permission. However, we now propose to remove the wharf deck in order to carry out the construction works. We conducted a structural appraisal of the river wall, which established that a replacement wall needs to be constructed.

22.4.22 The new river wall would be constructed up to flood defence level along the line of the existing wall. The residential developer would assume ownership of the new wall and responsibility for its maintenance.

22.4.23 The specifications of the new wall would comply with the site specific design principles. The final design and finish of the new wall would be in keeping with the robust and wharf-like character of the river walls along this stretch of the River Thames. Illustrative finishes for the river wall are shown in our visuals and drawings; however all of the finishes would be subject to discussions with the residential developer and the approval of the local authority at a later stage.



Figure 22.28: Existing Chamber's Wharf site foreshore



Figure 22.39: Existing Chamber's Wharf site foreshore

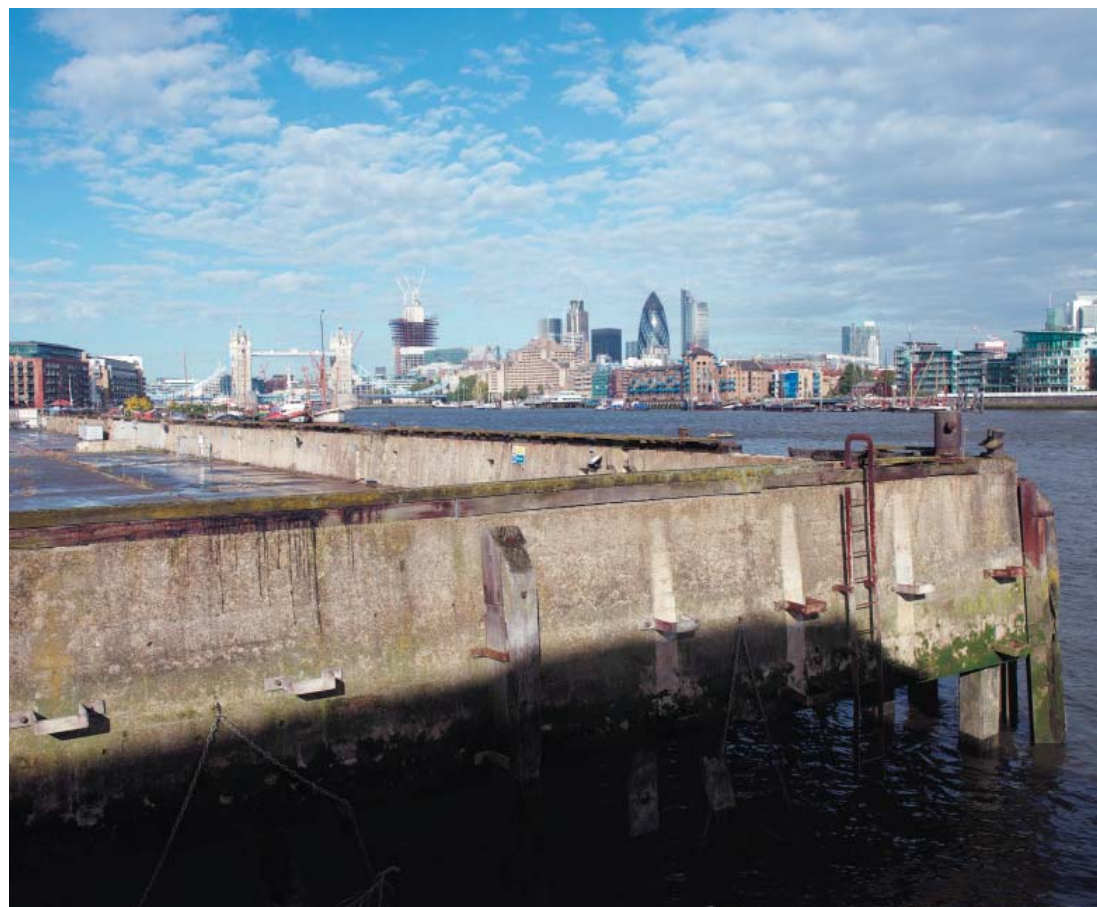


Figure 22.30: Existing Chamber's Wharf river wall/jetty



Figure 22.31: Existing Chamber's Wharf river wall/jetty



Figure 22.33: Proposed view after completion of residential development

Natural stone surface

High quality metal finish



Figure 22.34 Example of a natural stone surface



Figure 22.35: Example of a planted brown roof

Landscaping and appearance

Hard landscape palette

22.4.24 The indicative hard landscaping finishes would be confirmed by the residential developer in the final landscaping design. The finishes must be durable and able to bear the weight of cranes required for inspection and maintenance purposes.

22.4.25 The illustrative visuals indicate a high quality natural stone finish for the main area of hardstanding within the approved residential development.

22.4.26 The cladding material of the electrical and control kiosk and the ventilation columns would be agreed at a later stage. In our illustrative visuals, the exterior of the kiosk is clad with high quality precast concrete panels and the ventilation columns with a high quality metal finish.

Soft landscape palette

22.4.27 No landscaping is proposed at this site as part of the project. The residential developer would be required to submit details of any tree planting and soft landscaping finishes to the local authority for approval.

22.4.28 The illustrative visuals indicate that the electrical and control kiosk would feature a low maintenance planted brown roof to increase biodiversity and contribute to mitigating surface water run-off.

22.5 Access and movement

22.5.1 The layout of the permanent works, areas of hardstanding and the access route on-site would be arranged to ensure that the majority of the site would not be required for maintenance purposes.

22.5.2 Once the works associated with both the project and the approved residential development are complete, the Thames Path from Bermondsey Wall East could be routed through the future area of public realm along the riverfront to connect to Bermondsey Wall West. Completion of the residential development, the Thames Path, and the area of public realm along the river front would open the shaft site up for public use.

22.5.3 The site is broadly flat and there are few constraints on designing a space that is accessible to all. Greater transparency and additional connections for pedestrians would be created through and around the residential development, including connections between Chambers Street and the riverfront. In line with project-wide aspirations and good practice, landscaping treatments and materials would ensure that pedestrian routes meet the best standards of accessibility.

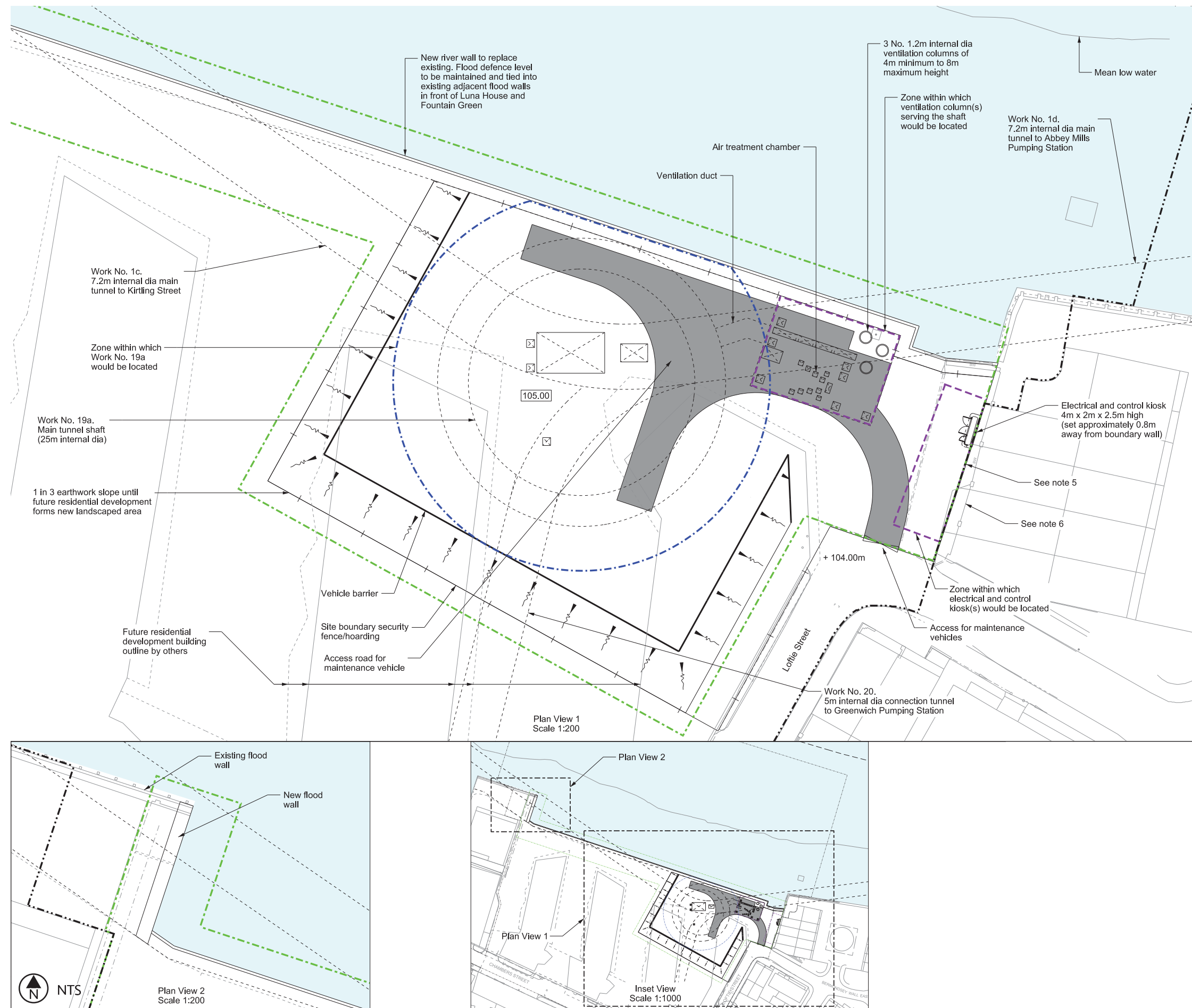
Thames Water access requirements

22.5.4 Thames Water's operational access to the limited permanent above-ground structures would be integrated into public realm designs of the approved residential development. Access to the works would be via a new entrance at the junction of Loftie Street and Bermondsey Wall East.

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



Figure 22.32: Access plan - refer to the Access plan in the *Book of Plans*



22.5.6 It is anticipated that a major internal inspection of the tunnel system and underground structures would be required once every ten years. This process would likely involve a small team of inspection staff and support crew and two mobile cranes to lower the team into the main tunnel shaft. The inspection would be carried out during normal working hours and would likely take several weeks. Public access to the area around the structures would be restricted during the inspection (once the area of public realm is implemented as part of the residential development). In the interim, prior to the completion of the residential development, the site would remain inaccessible to the public.

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

Interim site arrangement

22.5.8 The site would not be publically accessible until the approved residential development is complete. There would be a transitional phase following the completion of the project works and before construction of the residential development commences. During this phase, the perimeter of the site would be secured with a high quality hoarding.

22.5.9 A temporary guard rail would also be provided on or adjacent to the river wall. This would ensure safety along the river front until a permanent landscaping scheme, including railings along the riverfront, is implemented as part of the approved residential development.

22.5.10 A temporary access would be required for Thames Water maintenance visits. This access would be located on Loftie Street in the same location as the proposed permanent access. A ramp would be provided to facilitate the connection to Loftie Street.

Figure 22.36: Permanent works layout - refer to Permanent works layout in the *Book of Plans*

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