Thames Tideway Tunnel
Thames Water Utilities Limited

Application for Development Consent

Application Reference Number: WWO10001

Heritage Statement

Doc Ref: **5.3**

Appendix E

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

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Appendix E: Cremorne Wharf Depot

E.1 Site location and context

E.1.1 The site comprises an existing council depot that is currently used for storage and street cleaning, Lots Road Pumping Station, and an area of the River Thames foreshore.

E.1.2 The council depot includes a warehouse building with office and welfare facilities, two weighbridges, associated hardstanding and a jetty in the river. The Lots Road Pumping Station is Grade II listed and owned and operated by Thames Water.

E.1.3 The site is bounded to the northeast by the Station House associated with the pumping station and the mixed use Chelsea Wharf, to the southeast by the River Thames, to the southwest by the Lots Road Power Station development site, and to the northwest by Lots Road.

E.1.4 The local area is characterised by Edwardian residential properties laid out approximately in grid formation. The housing stock primarily comprises terraced two- and three-storey properties with basement levels and pitched roofs, some of which have been extended with mansard roofs. The 1970s red brick residential towers of the Worlds End Estate lie to the north of the grid of terraced housing.

E.1.5 The Green Flag Award winning Cremorne Gardens lie to the northeast of Chelsea Wharf and contain the original gates to the Victorian pleasure garden that existed from 1845 to 1877 between the river and King's Road. The gates were previously located on King's Road and were incorporated into the gardens when they were re-landscaped in 1981/2.

E.1.6 Cremorne Riverside Activity Centre and jetty is located next to Cremorne Gardens in an award-winning building that opened in 2008, although the centre was already in place in the gardens. Beyond the Cremorne Riverside Activity Centre are several residential house boats moored on the River Thames.

E.1.7 Chelsea Wharf on the northeastern boundary of the site was redeveloped in 2007; the original 19th century warehouse building was converted and extended for mixed commercial and residential use. As part of the planning permission, the developer entered into a legal agreement to link a riverside walkway along the front of Chelsea Wharf in the event that Cremorne Wharf is either developed or altered to comply with the Royal Borough of Kensington and Chelsea's Core Strategy Policy CT1.

E.1.8 The site is located beside the River Thames, which is designated as the River Thames (including Chelsea Creek) Site of Nature Conservation Importance (Metropolitan Importance) and within the Thames Conservation Area.

E.1.9 The area is dominated by the decommissioned Lots Road Power Station on a site directly adjacent to Cremorne Wharf Depot to the southwest of Chelsea Creek, which once supplied electricity to the London

Underground. The power station, now partially demolished, is not listed and comprises a large (50m high) generating building with a pitched roof and two chimneys.

E.1.10 The power station site is due to be developed by Hutchison Whampoa under the extant planning permission for a mixed-use scheme comprising residential, retail, business and community units, restaurants and a doctor's surgery. The scheme would retain the power station's generating hall as a mixed-use development alongside the new buildings on-site, including residential towers up to 30 storeys high, a three to eight-storey commercial and residential building, and a seven-storey residential building along the boundary. The proposals include 420 new dwelling units and two new bridges over Chelsea Creek to enable a riverside walkway along the river frontage. There is a mixed use planning permission for Hutchison Whampoa within the London Borough of Hammersmith and Fulham on the opposite side of Chelsea Creek, which proposes 392 residential units.

E.1.11 The area to the west of the site is characterised by a similar Edwardian residential development pattern as to the north of the site. There are other uses within the grid such as Chelsea Academy on Lots Road between Upcerne Road and Tetcott Road, which was opened in 2009. The grid is broken by Westfield Park to the north of Tetcott, Upcerne and Uverdale roads. The park provides play equipment and green space.

E.1.12 The Thames Conservation Area runs along the eastern site boundary. No part of the site is within the conservation area; however, the foreshore is part of the conservation area as well as some of the more historic buildings of the Chelsea riverside upstream from the site. The conservation area was designated to ensure that any development respects the setting of the river.

E.1.13 Some distance to the southeast of the site on the opposite side of the River Thames is the Battersea Square Conservation Area, which protects the character of old Battersea. In particular, it protects the setting of the Grade I listed St Mary's Church on the riverside, a fine Georgian building that forms a key feature in river views.

Historical context

E.1.14 The site was riverside marsh and meadowland in the medieval period and remained so into the early 18th century. Greenwood's map of 1827 shows that the site still comprised fields at that time. Cremorne House farm buildings lay to the north and Ashburnham House to the northwest. The farm became a sports club in 1831 and was later converted to pleasure grounds (Cremorne Gardens). By the mid-18th century, map evidence shows a field boundary that indicates the line of the future Lots Road.

E.1.15 In the mid-19th century the river wall remained set back from the present alignment and Cremorne Pier, which is downstream from the site, had been built. There was a terrace of housing on the southern side of Lots Road on the northern edge of the site and a saw mill sat on the site itself.

E.1.16 Between 1862 and the end of the 19th century, industrial development intensified between the terraced housing and the river. The 1894/6

Ordnance Survey map shows that the river wall had been brought forward to the present alignment. Cremorne Wharf, the now radically altered pier and the wharfs to the northeast had also been built and a dock lay to the southwest of the site. The surrounding streets had also been developed.

E.1.17 The late 19th and early 20th century saw considerable changes on the site. The warehousing on Chelsea Wharf, which now frames the eastern edge of the site, was built in 1894. The terrace of housing on the southern side of Lots Road was replaced by Lots Road Pumping Station in 1904. There was a substantial brick tunnel associated with the pumping station that discharged beneath Cremorne Wharf Pier. The pumping station was altered in the 1930s and again in the late 1950s to 1960s.

E.1.18 Lots Road Power Station, then the largest power station ever built, was constructed at the same time as the pumping station to power what is now the District Line. It soon powered much of the underground railway and tram systems, and still dominates the western end of the site.

E.1.19 Minor reconfigurations were undertaken at Cremorne Wharf in the 20th century and, more recently, a large steel shed was built on the space to the south of the pumping station.

E.2 Relevant local heritage policy and guidance

E.2.1 As the 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.

E.2.2 The Royal Borough of Kensington and Chelsea's *Local Development Framework* comprises the *Core Strategy* (December 2010) and the saved polices of the *Unitary Development Plan* (*UDP*), as well as the guidance in the *Thames Conservation Area Proposals Statement*.

E.2.3 *Core Strategy* Policy CL3 *(*Heritage Assets – Conservation Areas and Historic Spaces) states that: *"The Council will require development to enhance the character of appearance of conservation areas, historic places, spaces, townscapes, and their settings".*

E.2.4 *Core Strategy* Policy CL4 (Heritage Assets – Listed Buildings, Scheduled Ancient Monuments and Archaeology) states that: *"The Council will require development to preserve or enhance the special architectural or historic interest of listed buildings and scheduled ancient monuments and their settings, and the conservation and protection of sites of archaeological interest.*

"To deliver this the Council will:

a. "resist the demolition of listed buildings in whole or in part, or the removal or modification of features of architectural importance (both internal and external);

b. *"require the preservation of the special architectural and historic interest of listed buildings, scheduled monuments or other buildings or places of interest. In particular the integrity, plan form and structure of the building including the ground and first floor principal rooms, original staircases and such other areas of the building as may be identified as being of special interest should be preserved;*

c. *"require the preservation of the original architectural features, and later features of interest, both internal and external;*

d. *"require internal or external architectural features of listed buildings or scheduled ancient monuments, commensurate with the scale of the development, to be:*

   i "reinstated where the missing features are considered important to their special interest;

   ii "removed where the additions to or modifications are considered inappropriate or detract from their special character;

e. *"resist the change of use of a listed building which would materially harm its character;*

f. *"strongly encourage any works to a listed building to be carried out in a correct, scholarly manner by appropriate specialists;*

g. *"require development to protect the setting of listed buildings, scheduled ancient monuments or sites of archaeological interest;*

h. *"resist development which would threaten the conservation, protection or setting of archaeological remains;*

i. *"require desk based assessments and where necessary archaeological field evaluation before development proposals are determined, where development is proposed on sites of archaeological significance or potential".*

E.2.5 Para. 4.3.3 of the *UDP* notes in respect of the Thames Policy Area that: *"By virtue of its character and appearance the Thames and foreshore constitutes one of the greatest of all London's areas of metropolitan importance".*

E.2.6 Saved *UDP* Policy CD1 (Conservation and Development) seeks: *"To protect and enhance views and vistas along the riverside including: river views of Chelsea Embankment and the setting of Chelsea Old Church and views from the Thames bridges".*

E.2.7 Saved *UDP* Policy CD63 (Development in Conservation Areas) seeks: *"To consider the effect of proposals on views identified in the Council's Conservation Area Proposals Statements, and generally within, into, and out of conservation areas, and the effect of development on sites adjacent to such areas".*

E.2.8 The *Thames Conservation Area Proposals Statement* notes that the Lots Road Power Station is a key landmark in views of the conservation area from the river (p. 18 to 19).

E.3 Description of heritage assets and significance summary

E.3.1 The site contains one Grade II listed building, Lots Road Pumping Station, and the foreshore falls within the Thames Conservation Area. The site contains a number of undesignated heritage assets and there are a number of other heritage assets (as defined in the NPS, para. 4.10.2) nearby. These heritage assets are illustrated in the Heritage features map and the Conservation areas map. The numbering on the Heritage features map refers to the gazetteer in which the heritage assets are described in the *Environmental Statement*, which accompanies the application (Vol 12, Appendix E.1). The gazetteer is provided at the end of this appendix.

E.3.2 The heritage assets include:

a. the Grade II listed Lots Road Pumping Station
b. the riverfront flood defences
c. Cremorne Pier
d. Counter's Creek Sewer
e. Thames Conservation Area
f. archaeology
g. Lots Road Power Station.

Lots Road Pumping Station

E.3.3 The Lots Road Pumping Station (refer to the Historic Environment features map) was completed in 1904 as the London County Council's first storm water pumping station. It has been little altered architecturally since then, except for the installation of additional fixtures, fittings, plant, gauges and offices in the 1930s, further plant in the 1950s, and projecting vent pipes from 1998.

E.3.4 The principal nine bay elevation that fronts onto Lots Road features round arches, with a central door and paired round-arch headed windows in each of the bays either side. The upper part of the façade is constructed of red brick, with a white terracotta string at the level of the springing point of the arches, below which the face comprises brown glazed bricks. The two side elevations feature a similar treatment, with the gables expressed as triangular pediments with central oculi. The rear wall is constructed of plain stock brick, and is almost entirely blank.

E.3.5 Internally, the building is effectively a shed with a boarded iron truss roof that is three bays wide. The fourth rear bay forms a separate 'aisle'. There are fuel and water tanks on the ground floor and basement levels, five 1930s diesel combustion engines (that replaced original gas engines) and various gear boxes, gauges, signage and a clock. There is also localised dado height, decorative glazed tiling. Offices were inserted into the central southeastern part of the building in the 1930s, and three large electric motors were installed in the mid-20th century. The five pumps and storm

water outlet pipes are located in the basement, which occupies only part of the building's footprint.

E.3.6 The building (refer to Figure A.1) was Grade II listed in 2007 in view of its high-quality, Edwardian, classical civic utility architecture, which appears in similar buildings of the period; its age; and the additions of various items of plant and office accommodation in the 1930s.

E.3.7 Aesthetically, the heritage value of the pumping station primarily derives from its road frontage, the side elevations and parts of the interior. The rear elevation, by contrast, is very plain and of little heritage interest. The aesthetic value is significant in the context of the industrial character of the surrounding area.

E.3.8 The pumping station also displays evidential and historic value as an element in the development of London's infrastructure, which was geographically extensive and technologically advanced for the time.

E.3.9 Figure A.1 illustrates the principal, northwestern façade of Lots Road Pumping Station. The western façade is visible to the right.

Figure E.1 View of the northwestern façade of Lots Road Pumping Station (standard lens)

Riverfront flood defences

E.3.10 The Thames Archaeological Survey has recorded the remains of riverfront flood defences dating to the post-medieval period, which extend from Chelsea Creek to Chelsea Wharf (refer to the Historic Environment features map). A section of these defences fall within the site.

Cremorne Pier

E.3.11 Cremorne Pier is an undesignated and much-repaired and altered late 19th century industrial pier that projects into the River Thames within the proposed site (refer to the Historic Environment features map).

Counter's Creek Sewer

E.3.12 The Counter's Creek Sewer is an undesignated, large, red-brick arched sewer outlet that discharges onto the River Thames directly beneath Cremorne Pier (refer to the Historic Environment features map). The sewer features a brick channel and base; the sides are topped with horizontal timber, presumably to prevent damage to/from vessels loading and unloading at the pier. It may be contemporary with or pre-date Lots Road Pumping Station. It may also pre-date the implementation of Sir Joseph Bazalgette's sewerage scheme in the late 19th century.

Thames Conservation Area

E.3.13 The Thames Conservation Area (refer to the Conservation areas map) was designated to protect the character of the foreshore and historic areas of the riverfront in the Royal Borough of Kensington and Chelsea. It extends east to the borough boundary at Chelsea Bridge and covers the foreshore and Cremorne Pier.

E.3.14 The character of the area immediately adjacent to the site consists of the sweeping curve of the River Thames; the circa 1900 buildings of Lots Road Power Station and Chelsea Wharf, which are not designated but are of medium heritage interest; the open spaces of Cremorne Gardens and the cleared open land to the west of the site, which are not of heritage interest when viewed from the river; and the modern buildings at Chelsea Wharf and Cremorne Wharf Depot, which are not of heritage interest. In the rest of the area, no other buildings abut the river wall; the World's End Estate and all the buildings to the east are set back from the embankment.

E.3.15 Figure A.2 illustrates the view of the Thames Conservation Area from across the River Thames in Battersea. The sheds of Cremorne Wharf Depot offer obscured views of the rear of Lots Road Pumping Station. The area is dominated by Lots Road Power Station.

Figure E.2 View of the site and the Thames Conservation Area

Archaeology

E.3.16 There have been several archaeological finds near the site including two re-deposited Palaeolithic implements approximately on the foreshore 45m to the east (refer to the Historic environment features map).

E.3.17 The site appears to have been a wetland area from prehistoric through to medieval times. Few remains of interest have been noted from these periods.

E.3.18 From the 18th century, the site may have been used for agricultural purposes but was not fully reclaimed from the marshy foreshore until an embankment was built in the 1860s. This would have required material to be imported in order to raise the ground level, which would have buried any archaeological remains in the foreshore.

E.3.19 The construction of now lost warehouses, the pumping station with its deep footings and basement, and the Counter's Creek Sewer outfall would probably have destroyed the archaeology in those areas.

E.3.20 However, other parts of the site may have a high potential to retain features from the Palaeolithic and post-medieval (ie, industrial) periods; the potential for remains from other periods is moderate to low.

Lots Road Power Station

E.3.21 The undesignated Lots Road Power Station was originally planned by the Brompton and Piccadilly Circus Railway (now part of the Piccadilly line) in 1897; construction started in 1902 and was completed in December 1904 (refer to the Historic Environment features map). At the time, it was claimed to be the largest power station ever built, and it eventually powered most of the railways and tramways in the London Underground.

E.3.22 The power station is characterised by two distinctive chimneys and its prominent roof lanterns. In view of its historic use, scale and prominence along the river frontage, it is considered a heritage asset of medium significance. It also has a visual relationship with Lots Road Pumping Station and their arcaded façades complement each other in views along Lots Road.

E.3.23 The former wharf and ancillary buildings between the existing power station and the site have been cleared and fenced with hoardings for the Hutchison Whampoa redevelopment.

E.3.24 Figure E.3 illustrates the northern façade of Lots Road Pumping Station with Lots Road Power Station in the background.

Figure E.3 View of Lots Road Pumping Station and Lots Road Power Station

Battersea Square Conservation Area and St Mary's Church

E.3.25 The Battersea Square Conservation Area (refer to the Conservation areas map) includes a number of inland streets on the southern side of the River Thames, as well as the section of foreshore and river between St Mary's Church and the narrow riverside gardens in front of the St John's Estate.

E.3.26 The heterogeneous character of the riverside in the conservation area mainly derives from modern brick or rendered buildings of up to seven storeys.

E.3.27 The Grade I listed brick St Mary's Church dates from the 1770s and features a prominent white portico and leaded spire. The church lies at a 30 degree angle across the river from the site. The modern depot building forms a part of its wider setting, although it makes no contribution to its significance.

Station House

E.3.28 The Station House lies adjacent to Lots Road Pumping Station to the northeast of the entrance to the site (refer to the Historic environment features map). It was constructed in the same materials and in a similar style to the pumping station; however, its architecture was less successful. It is not designated and does not fall within the Thames Conservation Area.

Cremorne Gardens

E.3.29 The undesignated Cremorne Gardens lie to the northeast and not visible from the site. The site is not within the setting of the gardens. The gardens were laid out in their current form in the 1980s and do not possess any special heritage interest (refer to the Historic environment features map).

E.3.30 The gardens' iron gates formed the entrance to the original mid-19th century Cremorne Gardens nearby. They were relocated to their current location as part of the modern landscaping works and do not fit their context. They are an undesignated heritage asset of moderate significance.

Significance Summary

E.3.31 An assessment of the significance of the heritage assets and the potential effects of the proposed works is set out in the *Environmental Statement* Volume 12. The assessment includes a full statement of significance for built heritage and buried archaeological assets at the site. The significance is summarised overleaf in Table E.1.

Table E.1 Significance of heritage assets at Cremorne Wharf Depot

Heritage asset	Heritage significance	Reason for significance
Lots Road Pumping Station	High	A high quality example of Edwardian public utility architecture; the earliest and best-surviving example of a storm water pumping station by the Metropolitan Board of Works and

Heritage asset	Heritage significance	Reason for significance
		London County Council as well as the most architecturally accomplished and decorative.
Riverfront flood defences	Medium	Likely to date from the 19th-century; significance derives from their evidential and historical value, and association with the industrial wharf on the landward side of the river wall.
Cremorne Pier	Medium	The pier represents survival of the industrial riverscape and has group value with the Chelsea Wharf building and the river wall, which derives from their historical and evidential value.
Counter's Creek Sewer	Medium	The sewer may pre-date the construction of Lots Road Pumping Station in 1904, and possibly the Bazalgette scheme.
Thames Conservation Area	High	Its significance derives from the historic streetscape along the river, the 19th century embankment and the River Thames itself. Its character in the vicinity of the site is defined by the sweep of the river frontage, which offers far-reaching views along and across the river.
Archaeological potential	Medium	Moderate potential for Prehistoric and Post-medieval remains; the built and buried industrial remains in the area form a coherent group.
Lots Road Power Station	Medium	The structure is undesignated, but because of its historic use, scale and prominence along the river frontage it is considered a heritage asset of medium significance.
Battersea Square Conservation Area and St Mary's Church	High	St Mary's Church has architectural and historic interest as a prominent 18th century riverside feature, which has formed a landmark on the River Thames for some time, especially in views from the south. The conservation area preserves a remnant of an historic village and evidence of its later development into an industrial area with a significant Victorian residential character from the late 18th century.
Station House	Low	Historic and group value with the Lots Road Pumping Station, Lots Road Power Station and wharf buildings.
Cremorne Gardens	Low	Significant for its previous history as a gardens, although its current form is of little significance.

E.4 Description of proposals and required heritage consents

E.4.1 A summary of the proposed temporary and permanent works at Cremorne Wharf Depot is set out below.

Temporary construction works

E.4.2 The temporary construction works to create the CSO drop shaft at the site would involve erecting hoardings, a site compound, and potentially a campshed for barges. The works would require the use of cranes. These elements would be removed on completion of the works.

Permanent works

E.4.3 The permanent works include the construction of a CSO drop shaft to the south of Lots Road Pumping Station and a below-ground connection culvert. The electrical and control equipment would be installed within the pumping station building and connected to the infrastructure via below-ground ducts and cabling, which would enter the building through an existing underground opening. The current depot building would be replaced with a new building.

E.4.4 Two ventilation columns (approximately 4m high) could be positioned near the river wall in the southern corner of the site (refer to the Permanent works layout drawing). A smaller diameter column would be located in an existing vent on the southeastern corner of the pumping station.

E.4.5 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 set out 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 the relevant national, regional and local policies.

E.4.6 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.

E.4.7 Refer to the Historic environment features map, the Conservation areas map and the drawings listed in Table E.2 below. This table sets out the drawings of the proposed works that may affect heritage assets, 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 E.2 Drawings relating to heritage assets at Cremorne Wharf Depot

Drawing title	Drawing status
Location plan	For information
As existing site features plan	For information

Drawing title	Drawing status
Demolition and site clearance	For approval
Site works parameter plan	For approval
Permanent works layout	Illustrative
Proposed site features plan	Illustrative save for the scale of above ground structures which is indicative
Section AA	Illustrative
As existing and proposed east (river) elevation	Illustrative
As existing and proposed west elevation	Illustrative
Listed structure interface: Lots Road Pumping Station	For Approval
Construction phase 1: Site set-up, shaft construction and tunnelling	Illustrative
Construction phase 2: Construction of other structures	Illustrative

The drawings are located in Section 13 of the *Book of Plans*

Lots Road Pumping Station

E.4.8 Lots Road Pumping Station is the main focus of the proposals. At present, the building is used as an operational Thames Water pumping station and this use would not change. The temporary construction works behind the pumping station would temporarily affect its setting. The cranes and other construction activities would visually intrude on views to/from the site to the south (refer to the Construction phase 1: Site set-up, shaft construction and tunnelling drawing).

E.4.9 A small diameter duct trench would be excavated from the CSO interception chamber to an existing ventilation duct on the southeastern corner of the pumping station building. The appearance of this duct would be improved and the new design would be more suited to the listed building (refer to the Permanent works layout).

E.4.10 The required electrical and control equipment would be incorporated into the pumping station building. Cables would run into the basement of the building, emerge through the floor, and run into proposed new plant cabinets approximately 1.5m high (refer to Figure E.4, Figure E.5 and the Listed structure interface: Lots Road Pumping Station drawing).

Figure E.4 View of the cast iron gas pipe and plain brick silencer box

Figure E.5 Proposed location of the plant cabinets inside Lots Road Pumping Station

Figure E.6 An existing plant cabinet within Lots Road Pumping Station

E.4.11 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 4.9 of the *Design Principles* document. The site-specific heritage principles relating to the significance of the listed pumping station include the following:

Reference	Site-specific design principles
CREWD.02	The footprint, scale and design of the reinstated depot facilities shall respect the historic setting of the listed pumping station.
CREWD.05	Electrical and control equipment located in the Lots Road pumping station shall be freestanding away from the existing tiled walls. The tile wall finish to the pumping station shall not be removed unless approved by the local planning authority.
CREWD.08	Connections between the project works and the electrical and control equipment in the Lots Road Pumping Station shall be made underground.
CREWD.09	The design of the ventilation column to the valve and interception chambers shall make use of the existing concrete ventilation stack on the southeast corner of the Lots Road Pumping Station building. The connection into the stack shall be made underground and the ventilation stack shall be sympathetically modified or replaced to preserve and enhance the listed pumping station.

Works normally requiring Listed Building Consent

E.4.12 The following works within and beneath Lots Road Pumping Station would normally require Listed Building Consent (refer to the Listed structure interface: Lots Road Pumping Station drawing):

a. On the exterior of the pumping station, an existing 20th century ventilation duct would be altered to harmonise better with the listed building and re-used as a ventilation column.

b. New, floor-mounted electrical and control equipment would be installed within the pumping station building.

c. The new electrical and control kiosk would require cable ducts to enter the building below ground through an existing opening in the basement wall. This would involve removing a length of redundant cast iron pipe, which is currently attached to the opening. It would also involve altering mid to late 20th century basement brickwork to accommodate the duct. The proposed equipment would be connected via new holes cut into the concrete slab floor. The holes would be cut by removing a redundant section of an original cast iron gas pipe in the basement and an adjoining plain brick silencer box (refer to Figure E.4).

Cremorne Wharf Depot and other works

E.4.13 Although the site would be screened from Lots Road, the works would likely be visible from outside the site (refer to the Construction phase 1: Site set-up, shaft construction and tunnelling drawing).

E.4.14 The proposed works include removing the existing Cremorne Wharf Depot building and the associated small welfare office building behind Lots Road Pumping Station in order to accommodate the temporary construction site and to enable the construction of the CSO drop shaft. The drop shaft would be excavated in the southern section of the site and would be connected to the CSO interception chamber by a culvert that would be built across the Counter's Creek Sewer (refer to the Demolition and site clearance drawing).

E.4.15 The site-specific design principles that relate to Cremorne Wharf Depot include the following:

Reference	Site-specific design principles
CREWD.01	On completion of the project, the depot facilities shall be reinstated unless agreed otherwise with the landowner.
CREWD.04	The signature design ventilation columns shall be located as close to the river as practicable. The vent columns shall not be flood lit.
CREWD.07	Lighting for the reinstated depot building shall be provided as existing and shall only be for operational and safety reasons.

E.4.16 No heritage consent would normally be required.

Riverfront flood defences

E.4.17 The archaeological remains of the river flood defences may be removed by the construction works. No heritage consent would normally be required.

Cremorne Pier

E.4.18 Cremorne Pier would be protected from accidental damage from the increased river traffic during the works. No heritage consent would normally be required.

Counter's Creek Sewer

E.4.19 A small section of the Counter's Creek Sewer would be demolished. No heritage consent would normally be required.

Thames Conservation Area

E.4.20 The construction works would be visible from the river frontage of the Thames Conservation Area to the northeast and would temporarily alter part of its setting. The permanent above-ground structures would not affect its setting.

Archaeology

E.4.21 Any archaeology is likely to be removed by the works. A number of mitigation measures would be implemented in accordance with the *Overarching Archaeological Written Scheme of Investigation*, which accompanies the application.

Lots Road Power Station

E.4.22 The construction works would alter the setting of Lots Road Power Station. However, the Hutchison Whampoa development between the power station and the site would partially screen the works. No heritage consent would normally be required.

Battersea Square Conservation Area and St Mary's Church

E.4.23 The construction works would be visible from the river frontage of the Battersea Square Conservation Area and would temporarily alter part of its setting. The permanent above-ground structures would only alter its setting to a small degree, as the replacement depot building would be similar to the existing. No heritage consent would normally be required.

Station House

E.4.24 The setting of the Station House would not be significantly altered by the proposals. No heritage consent would normally be required.

Cremorne Gardens

E.4.25 The setting of Cremorne Gardens would not be significantly affected by the proposals due to the intervening buildings between the gardens and the site. No heritage consent would normally be required.

E.5 Heritage design considerations

E.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 context of the historic environment. The site-specific design objective at Cremorne Wharf Depot was to successfully accommodate the works into the structure and setting of Lots Road Pumping Station, and to preserve and (where appropriate) enhance its special interest and character.

E.5.2 Other considerations included existing below-ground Thames Water infrastructure and possible future uses of the site, such as a depot or safeguarded wharf.

E.5.3 The design of the proposals at the Cremorne Wharf Depot site was also significantly influenced by an extensive process of stakeholder engagement and design review. Refer to Section 14.3 of the *Design and Access Statement* and the *Consultation Report,* which accompany the application.

E.5.4 In response to Thames Water's pre-application consultation activities, the design team made the following changes to address the heritage considerations at the site:

a. The ventilation columns were moved closer to the River Thames.

b. The design was re-scaled and re-positioned in order to significantly reduce the amount of infrastructure required, which would be located on-shore and below ground as far as possible.

c. The replacement double-apex depot building would have a smaller mass than the existing building.

d. The line of the replacement depot building was set back approximately 2m from Lots Road Pumping Station to enable the elevation of the pumping station to be appreciated.

e. The electrical and control equipment was housed within the pumping station building in order to reduce visual clutter in the building's setting and to continue its original use as a pumping station. The connecting ducting would be below ground and re-use an existing underground opening. The equipment would be connected through the floor to avoid significant internal structural alterations above ground level.

f. A 'green roof' was incorporated on the replacement depot building to soften its appearance and add visual interest.

E.5.5 In response to consultation feedback from the Royal Borough of Kensington and Chelsea, the vertical concrete vent duct on the southeastern corner of the pumping station (which detracts from its significance) would be improved and re-used as a ventilation duct to the CSO interception structure.

E.6 Mitigation measures

E.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 to 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*, the *Core Strategy* and saved *UDP*.

E.6.2 The intrusive works to Lots Road Pumping Station, although limited in scope and impact, would normally require Listed Building Consent. The effects of the works would be largely benign and would maintain the building's appearance and original use as a major piece of sewerage infrastructure. Proposed excavations during construction might result in minor ground settlement, which could potentially impact on the building and its interior decorative finishes. A monitoring programme would be designed and implemented to mitigate this impact. Any damage to significant features and finishes would be made good prior.

E.6.3 Potential impacts on the pumping station would be mitigated by carefully designing the alterations to minimise the removal of existing fabric. Carrying out the alterations to the wall of the pumping station below ground would avoid any visual impact on significant façades. The additional electrical and control equipment installed inside the building would be relatively small and sympathetically sited to minimise its impact on the character of the interior. Fixings to significant interior decorative finishes would be avoided.

E.6.4 The ventilation duct would be routed through the existing attached column on the eastern corner of the pumping station building. The column would also be improved to harmonise better with the building in order to mitigate any additional impact on its fabric or setting.

E.6.5 Any visual impact from the construction of the replacement depot building on the surrounding heritage assets would be mitigated by the proposed design. The new building would be an industrial shed, similar to the existing; however, it would be of higher architectural quality and more sustainable, including features such as a biodiverse roof.

E.6.6 The ventilation columns on the western part of the riverside would be detailed to a high standard of design in order to enhance views.

E.6.7 For the duration of the construction works, all heritage assets would be safeguarded by the provisions of a site-specific heritage management plan, which would be to be prepared by the contractor before commencing construction, in accordance with Section 12 of the *Code of Construction Practice* Part A. Section 12 of the *Code of Construction Practice* Part B also states:

a. Works to install equipment in Lots Road Power Station shall be carried out in accordance with the requirements set out in the application.

E.6.8 An archaeological watching brief would be implemented during site preparation and construction. In view of the generally low archaeological potential of the site and the highly localised nature of the potential impacts from the proposed works, this would sufficiently mitigate impacts on any finds that might arise due to ground disturbance.

E.6.9 The archaeological mitigation measures would be implemented in accordance with the *Overarching Archaeological Written Scheme of Investigation* and a *Site-specific Archaeological Written Scheme of Investigation*, in order to satisfy the requirement to record any unavoidable losses set out in para. 4.10.18 of the NPS.

E.7 Assessment of effects

E.7.1 The *Environmental Statement* assesses the 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 E.3, the impacts identified in Section E.4 and the mitigation measures described in Section E.6.

Lots Road Pumping Station

E.7.2 The construction works would be visible behind the Lots Road Pumping Station building when viewed from Ashburnham Road and through the entrance gates to the site. They would also be visible from the Hutchison Whampoa development. This would have a temporary negative impact on its setting; however, the impact would be minor and would not constitute substantial harm due to the character of the building and the wide area.

E.7.3 The building would likely experience some ground settlement as a result of construction works, which would have a moderate negative effect. However, any damage to significant features and finishes would be repaired using standard conservation methods to achieve like-for like-repair (see Section 3.7 of the main report).

E.7.4 The building is a robust industrial structure. The alterations to the building were sensitively designed; they would be predominantly below ground and would have a minor negative effect on its significance. They would also have beneficial effects including improving the building's ventilation duct and setting. The alterations would therefore constitute less than substantial harm during construction and have minor positive permanent effects. The alterations would be consistent with the current and future use of the building as an operational pumping station.

E.7.5 The replacement depot building to the rear of the pumping station would be set back from the listed building by 2m and would replace the existing building of lesser architectural quality. The works would therefore have a beneficial effect on the pumping station's setting.

Cremorne Wharf Depot

E.7.6 The construction of the replacement depot building would have a beneficial impact on the settings of Lots Road Pumping Station and the other heritage assets in the vicinity, including the Thames and Battersea Square Conservation Areas and the undesignated Lots Road Power Station.

E.7.7 The building would be set further back from the river wall than the existing building, which would improve public access and enable appreciation of the heritage assets.

E.7.8 The ventilation columns on the riverside would be a high quality design and would not have any negative impact on the setting of nearby heritage assets or views along and across the River Thames. The columns would make a positive contribution to the local character and distinctiveness.

Thames Conservation Area and Battersea Square Conservation Area

E.7.9 The construction works would have a minor negative effect on the settings of the Thames Conservation Area and the Battersea Square Conservation Areas as a whole. However, these temporary impacts would not constitute substantial harm due to the existing industrial use of the site and the distances and angles between the works and the river frontages in the conservation areas. The replacement depot building would have no effect on the setting of the conservation areas.

Lots Road Power Station

E.7.10 The construction works for the Hutchison Whampoa development at the power station site would act as a barrier between Lots Road Power Station and the project works. The power station is an industrial building and cranes and other construction features would not be out of place in its present-day or historical setting. It is also large and would remain visible across the site. Therefore, there would be minor negative effects on its setting during construction.

E.7.11 The improved appearance of the project site and the Lots Road Pumping Station building would slightly improve the power station's setting.

Cremorne Pier

E.7.12 Cremorne Pier would be protected and retain its significance during the works (refer to the *Code of Construction Practice* and the Construction phase 1: Site set-up, shaft construction and tunnelling drawing). The works would have a temporary negative effect on its setting. However, in view of its function as a pier for mooring vessels, it would have often been obscured from view both historically and in the present-day. Overall, the harm would be less than substantial and the permanent above-ground structures would have negligible effect on its significance.

Counter's Creek Sewer

E.7.13 The removal of only a small part of this structure would have a minor negative effect on its significance and it would be archaeologically recorded prior to commencing works. Therefore it would suffer less than substantial harm.

Archaeology potential

E.7.14 The archaeology within the site is unlikely to be of high significance and would have been disturbed by the long history of industrial uses. The construction works would entail excavation of made ground and the alluvial soils beneath it, which would have a negative impact on any archaeological remains within the footprints of the excavations.

E.7.15 Nevertheless, a careful compensatory programme of archaeological investigation and recording would be undertaken to ensure that any finds of interest are explored. This would enable their significance to be understood and the information would be disseminated via the usual

channels. In view of this archaeological mitigation work, there would be less than substantial harm to archaeology.

Assessment in relation to policy

E.7.16 As a whole, the significance and setting of the Lots Road Pumping Station would be preserved or enhanced by the proposed works and the impact on its fabric would be minimised. The design was informed by an understanding of the building's significance and it successfully balances the need to undertake the works and to preserve this significance, which satisfies para. 4.10.11 of the NPS. The pumping station would suffer less than substantial harm and would benefit from improvements to its appearance, which would satisfy paras. 4.10.13 and 4.10.14 of the NPS. The improvements to its setting would also meet the requirements of para. 4.10.17 of the NPS. These considerations are also reflected in *London Plan* Policy 7.8 and *Core Strategy* Policy CL4.

E.7.17 None of the proposed works would take place within the Thames Conservation Area. Nevertheless, the design team focussed on the scale, height, alignment and materials for the replacement depot building and permanent ventilation structures. The team sought to enhance the setting of the conservation area and the surrounding heritage assets and reveal the local distinctiveness of the historic environment. This satisfies paras. 4.10.12 and 4.10.17 of the NPS, and reflects *London Plan* Policy 7.8, *Core Strategy* Policy CP2, and saved *UDP* policies CD1 and CD63.

E.7.18 The project would also have a range of heritage benefits, which would keep any harm below the threshold, above which para, 4.10.14 of the NPS states that the decision maker should refuse consent unless it can be demonstrated that harm is necessary to deliver substantial public benefits. These benefits include an approach of minimal intervention, utilising existing redundant ducts and openings where possible; continuing the original use of Lots Road Pumping Station; and improving its setting with the replacement depot building.

E.7.19 In respect of archaeology, the works would remove the upper stratum of the CSO outfall apron. 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 paras. 4.10.18 to 4.10.20 of the NPS, and reflects *London Plan* Policy 7.8.

E.7.20 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 via the usual channels to increase public appreciation of the heritage of the site.

E.7.21 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 (refer to the *Environmental Statement,* Vol 2, Appendix E.1).

E.7.22 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, as well as *London Plan* Policy 7.8 and *Core Strategy* Policy CL4.

E.8 Conclusion

E.8.1 The main permanent heritage impact at this site concerns the proposed works to the Grade II listed Lots Road Pumping Station. The works would have some impact on the fabric of the building; however, this impact would not constitute substantial harm. The improved quality of the replacement depot building would enhance its setting to a small degree. In view of the careful design and the range of mitigation measures, the proposals would conserve its significance of the Grade II listed Pumping Station.

E.8.2 The character of site when viewed from the river would be maintained and enhanced by the replacement depot building, which would benefit the settings of the Thames Conservation Area and the Battersea Square Conservation Area. None of the impacts of the temporary construction works would amount to substantial harm to any of the heritage assets on or near the site and would preserve and enhance their settings.

E.8.3 The potential loss of some archaeology of low to medium significance on the site would be mitigated by careful investigation during the works, comprising recording or other responses as appropriate. This would enable a full understanding of the site.

E.8.4 The proposed works and permanent above-ground structures would therefore be in line with the criteria and policies of the NPS, and reflect the aspirations of similar policies in the *London Plan*, the *Core Strategy*, the saved *UDP*, and the *Thames Conservation Area Proposals Statement.*

Gazetteer of known heritage assets

Details of known heritage assets within the assessment area are provided in Table E.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 12, Appendix E.1.

Table E.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
1A	Riverfront flood defences of post-medieval date from Chelsea Creek to Chelsea Wharf, recorded by the Thames Archaeological Survey in the 1990s.	FKN01 A110 MLO 70207 083832
1B	Lots Road Pumping Station. Grade II listed. Storm water pumping station in a Classical style. 1904 by London County Council Works Department under Chief Engineers Sir Alexander Binnie then Sir Maurice Fitzmaurice. Red and glazed brick with terracotta dressings and plaques. Slate roof.	1392309
1C	Counters Creek Sewer. Large red-brick arched sewer outlet with brick channel, running out of the river wall within the site and extending directly underneath Cremorne Pier into the Thames. This substantial feature has a brick base and sides topped with horizontal timber presumably to prevent damage from vessels loading and unloading. Possibly contemporary with, or pre-dating, the construction of Lots Road Pumping Station (1904), and possibly pre-dating the implementation of the Bazalgette scheme in the late 19th century.	---
1D	Site of campshed proposed for construction in 1937. It was not visible on the site visit carried out as part of the present assessment, and may have been obscured by foreshore silts.	---
2	Chelsea Wharf Five storey former industrial warehouse dated 1894. Mansard roof with a terracotta name plaque below an oeil-de-boeuf central window, with the name ‘CHELSEA WHARF’.	
3	Concrete riverside wall of post-medieval date recorded by Thames Archaeological Survey in the 1990s.	FWW11 A117
4	Lots Road. The findspot of Roman pot found by chance at this approximate location. Noted on the Greater London Historic Environment Record (GLHER).	MLO67580 083608 MLO10836

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number
		050292
5	Westbridge Road, Hyde Lane. The site of a medieval manor, recorded on the GLHER.	MLO542 031568
6	The GLHER notes the site of medieval meadows at this location, along with the findspot of a medieval ring found by chance.	MLO25994 106084 050623
7	A group of small eroded stakes (function unknown) identified on foreshore by Thames Archaeological Survey in the 1990s.	FKN01 A130
8	A layer of peat was recorded during the Museum of London Archaeology (MOLA) site walkover survey (with specialists from the Thames Discovery Programme) carried out in 2011 as part of the Thames Tideway Tunnel project. This is most likely related to a Neolithic peat layer found further to the north and is probably of the same date.	---
9	Town Meadows. The area is recorded as medieval meadows on the GLHER.	MLO40504 050623/07
10	Lots Road Pumping Station, Site B / Land at Thames Avenue Geotechnical boreholes monitoring by MOLA in 2002. The floodplain gravel was noted at c. 100.0m ATD (5–6m below present ground level), with peat/humic mud at between 99.0 and 101.0m ATD (5–7m below ground level/mbgl). Previous geotechnical boreholes showed that it falls to 98.0m ATD in the extreme south-eastern part of the site. The surface of the overlying alluvium was noted at 102.0m ATD.	LRP02
11	Chelsea Academy (former Lots Road School) MOLA evaluation in 2008. Eight trenches were excavated, revealing natural gravels overlain by horticultural soil, from 19th century allotments, along with truncation from 19th–20th century basements. In the SE of the site was a deposit containing 17th–19th century finds with some residual (outside the context in which it was originally deposited) flint debitage (waste from flint knapping) of possible Mesolithic date. A small river channel was also recorded beneath by 19th/20th century dumping.	CAU08
12	Layer of clay with organic material/wood of possible post-medieval date recorded by the Thames Archaeological Survey in the 1990s.	FWW11 A110
13	Unclassified timber structure comprising one upright and two horizontal timbers forming a possible causeway of post-medieval date recorded by the Thames Archaeological Survey in the 1990s.	FWW11 A109 MLO71773 023216
14	Remains of a possible post-medieval causeway, recorded by the Thames Archaeological Survey in the 1990s.	FWW11 A103
15	Lots Road Power Station. Historic building recording in 2008. The power station was	MLO100452

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number
	constructed between 1902 and 1904 and provided the electricity to power the London Underground system. The station was retained as a backup once the transfer of power went to the National Grid in the 1990s and was de-commissioned in 2002. The survey was followed by a geoarchaeological investigation by Archaeoscape in 2008. Seven boreholes revealed alluvium formed by slow moving water, and two thin layers of peat. One of the peat layers dated between the late Bronze Age and the middle Iron Age. The second peat layer dated to the Anglo Saxon period.	MLO100453
16	Unclassified post-medieval timber structure comprising vertical posts below existing Cremorne Pier recorded by the Thames Archaeological Survey in the 1990s.	FKN01 A107 MLO70200 083829
17	Two permanently submerged concrete obstructions recorded by acoustic sensor and digitised by Seazone.	63700000700 0993 48600000708 3523
18	Modern moored house boats and metal anchor recorded by the Thames Archaeological Survey at Old Ferry Wharf in the 1990s.	FKN01 A125 FKN01 A126
19	Unclassified submerged obstruction comprising a sailing budge rudder recorded by echo/sounder and digitised by Seazone.	63700000110 6505
20	Battersea Reach. The site of a pontoon recorded by Seazone.	48600000614 7150
21	Battersea Reach. The site of a pontoon recorded by Seazone.	48600000614 7452
22	Battersea Reach. The site of a pontoon recorded by Seazone.	48600000614 7005
23	Battersea Reach. The site of a pontoon recorded by Seazone.	48600000614 9232
24	Battersea Reach. The site of a pontoon recorded by Seazone.	48600000614 6974
25	Modern drain recorded by the Thames Archaeological Survey in the 1990s.	FWW11 A113
26	Line of the Bazalgette Low Level Sewer.	---
27	Riverfront flood defences of post-medieval date from Chelsea Wharf to Chelsea Harbour, recorded by the Thames Archaeological Survey in the 1990s.	FKN01 A111 MLO70208 083833

HEA Ref.	Description	Site code/ GLHER ref/ List Entry Number
28	Riverfront flood defences of post-medieval date at the end of Chelsea Harbour recorded by the Thames Archaeological Survey in the 1990s.	FKN01 A112 MLO70209 083834
29	Cremorne Wharf. The chance find of two Palaeolithic flint implements noted on the GLHER.	MLO12543 112057
30	Late 19th century river wall constructed projecting slightly into the Thames to support an industrial warehouse constructed on the site.	---
31	Cremorne Pier. Late 19th century industrial pier.	---
32	Thames Foreshore The approximate location of an early medieval spearhead recovered c. 250m south of the site and recorded by the Portable Antiquities Scheme (PAS).	LON-920814
33	Lots Road Power Station - The power station at Lots Road was originally planned by the Brompton and Piccadilly Circus Railway (now part of the Piccadilly line) in 1897. Construction started in 1902 and was completed in December 1904. At the time it was claimed to be the largest power station ever built, and it eventually powered most of the railways and tramways in the London Underground. It is characterised by four distinctive chimneys and brick work. The structure is undesignated, but because of its historic use, scale and prominence along the river frontage it is considered a heritage asset of medium significance.	---
34	Cremorne Gardens - The existing undesignated Cremorne Gardens alongside the River Thames are a vestige of a larger garden opened to the public in 1845. The gardens are formed of modern hard standing and planting, offering commanding views across the river	---

Table E.4 List of drawings in order

Drawing title
Historic environment features map
Conservation areas map
Location plan
As existing site features plan
Demolition and site clearance
Site works parameter plan
Permanent works layout
Proposed site features plan
Section AA
As existing and proposed east (river) elevation
As existing and proposed west elevation
Listed structure interface: Lots Road Pumping Station
Construction phase 1: Site set-up, shaft construction and tunnelling
Construction phase 2: Construction of other structures

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Keyplan:

Key

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

The reference number for historic environment features correspond to the descriptions in the 'Gazetteer of known heritage assets' in Environmental Statement Vol. 12 Appendix E.1

40 20 0 40 m

Scale 1 : 2,500 at A3

FOR INFORMATION

Location

Cremorne Wharf Depot

Royal Borough of Kensington and Chelsea

Document Information

Heritage Statement

Historic environment features map

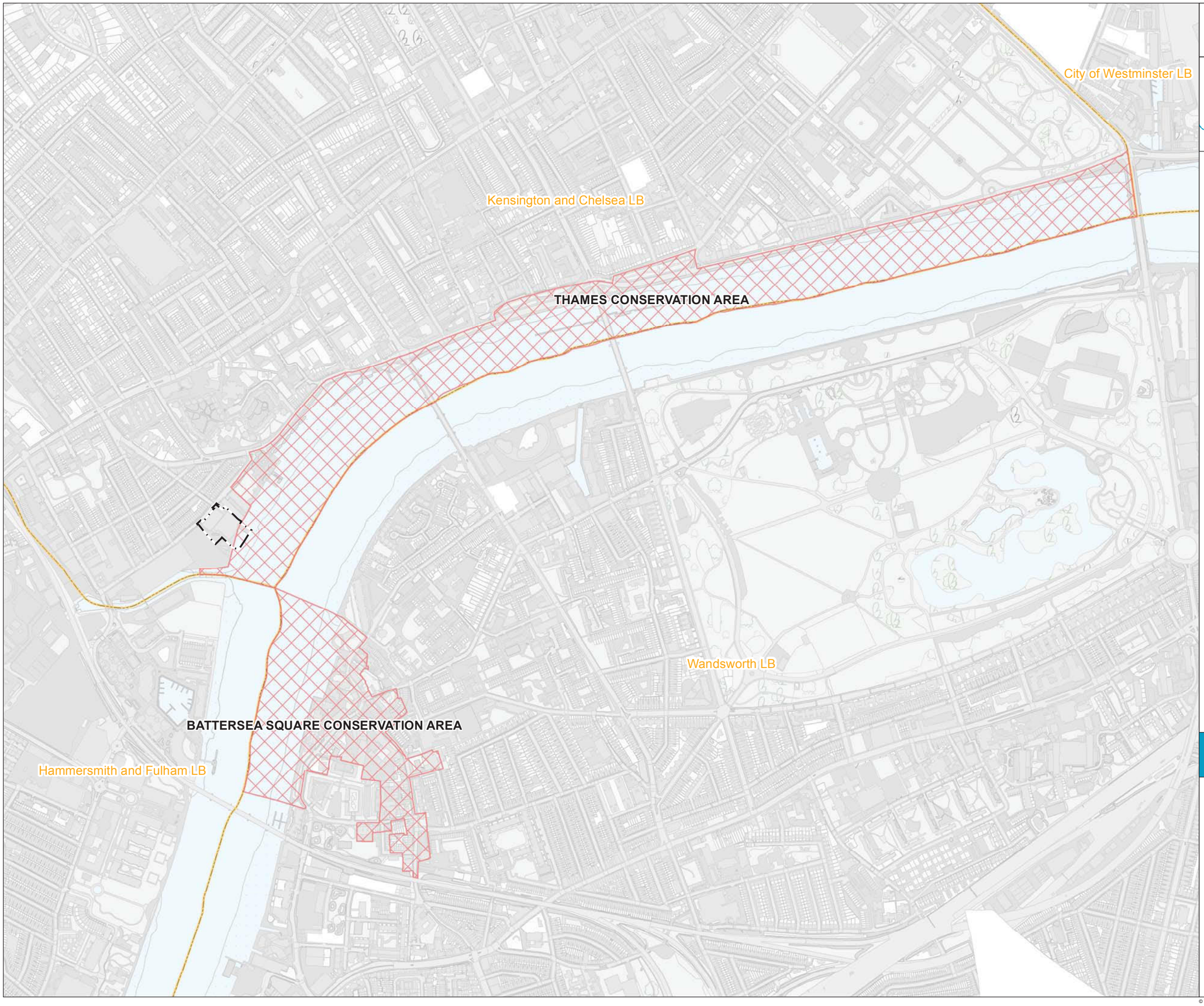
1PL03-HE-65226

January 2013

Thames Tideway Tunnel

Creating a cleaner, healthier River Thames

Thames Water



Keyplan:

Key

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

100 50 0 100 m

Scale 1 : 8,000 at A3

FOR INFORMATION

Location

Cremorne Wharf Depot

Royal Borough of Kensington and Chelsea

Document Information

Heritage Statement

Conservation areas map

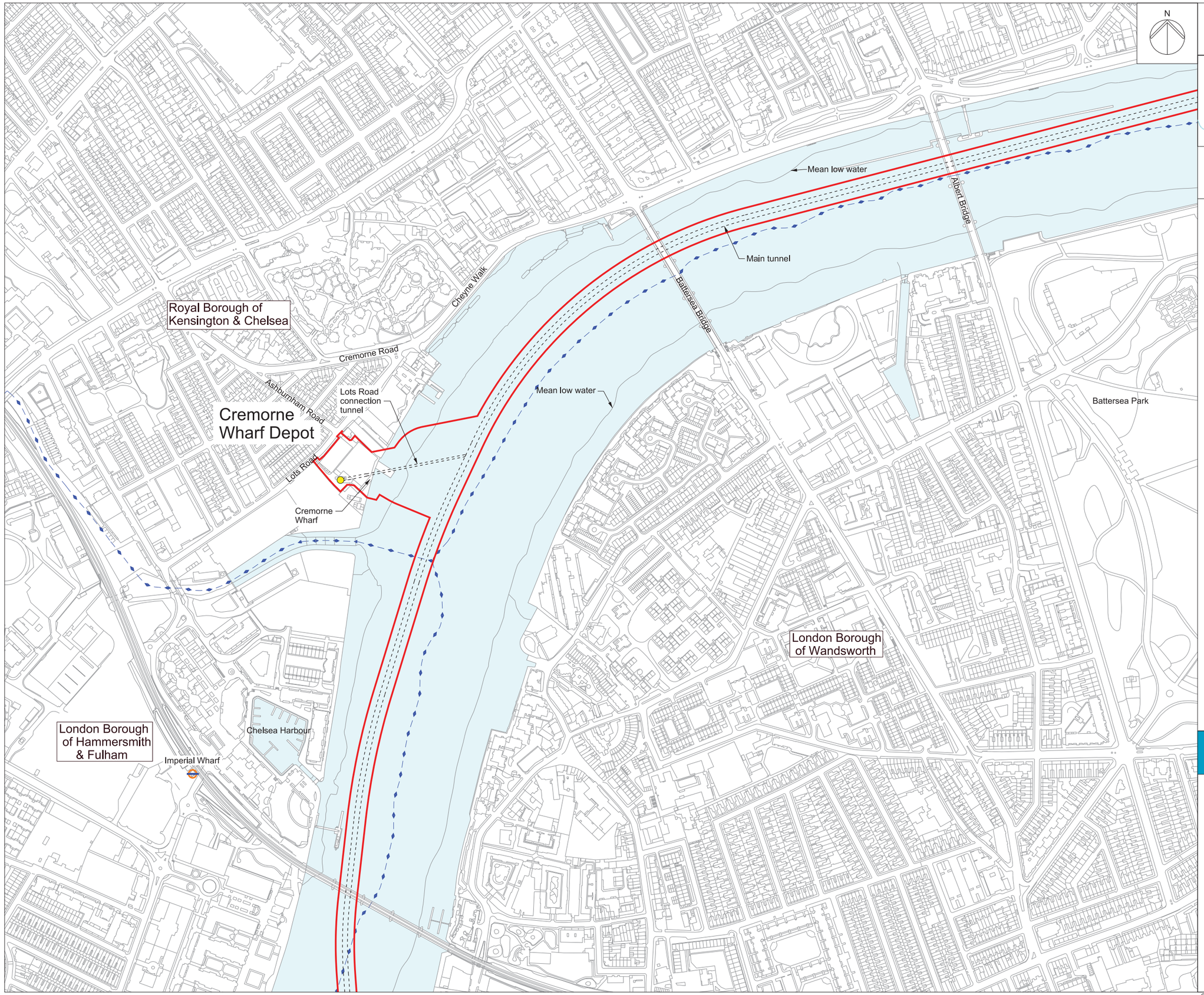
PL03-HE-65240

January 2013

Thames Tideway Tunnel

Creating a cleaner, healthier River Thames

Thames Water



Keyplan:

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

Key:

- Local authority boundary
- Order limits
- Tunnel
- Shaft

Notes:

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

100m 0 100m

Scale 1:2500 at A1
1:5000 if reproduced at A3

FOR INFORMATION

Location

Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information

Application for Development Consent

Location plan

Book of plans - section 13

DCO-PP-11X-CREWD-130001
January 2013

Thames Tideway Tunnel
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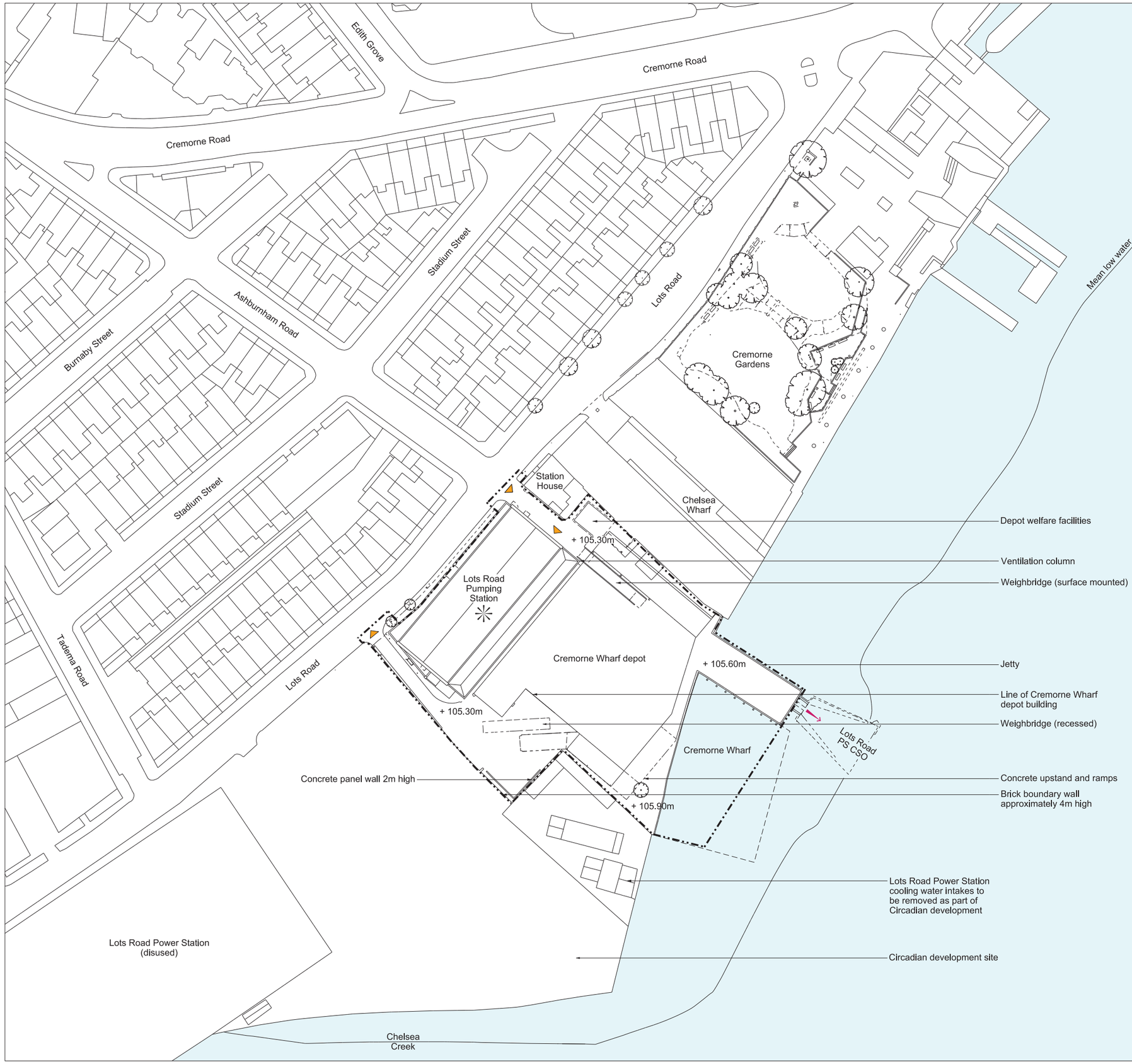
Thames Water



Keyplan:

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

Key:

- Limits of land to be acquired or used (LLAU)
- + 105.40m — Existing levels (shown in metres above tunnel datum)
- Listed buildings/structures
- Approximate position of CSO outlet
- Existing trees within surveyed area (trunk sizes vary)
- Thames Water access

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.

10m 0 40m

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

FOR INFORMATION

Location

Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information

Application for Development Consent

As existing
Site features plan
Book of plans - section 13

DCO-PP-11X-CREWD-130002
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

N

Keyplan:

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

Key:

- Limits of land to be acquired or used (LLAU)
- Trees to be removed
- Above ground structures to be removed
- Below ground structures to be removed or infilled
- Structure to be removed and relocated or reinstated

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.

10m 0 10m

Scale 1:200 at A1
1:400 if reproduced at A3

FOR APPROVAL

Location

Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information

Application for Development Consent

Demolition and site clearance

Book of plans - section 13

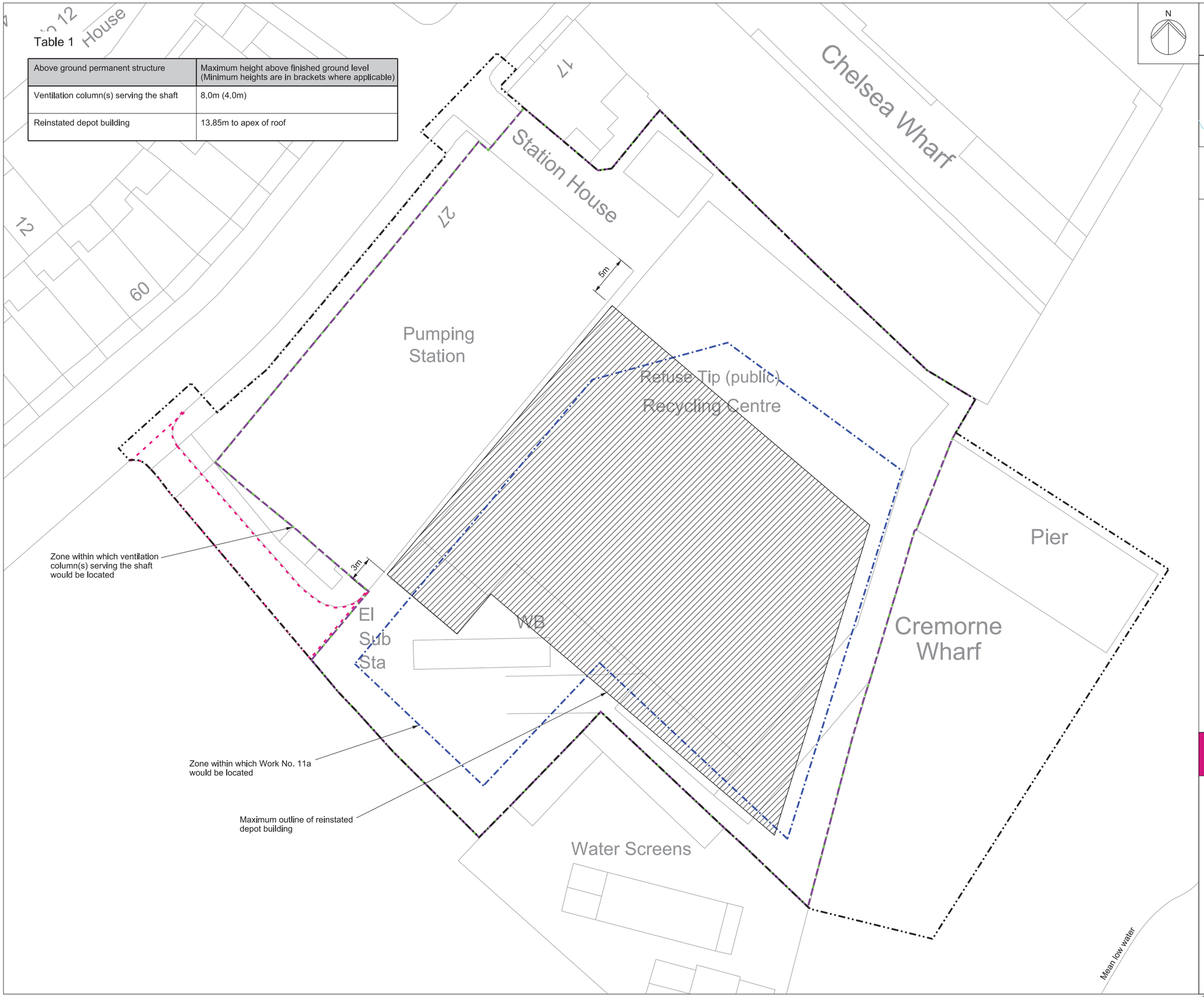
DCO-PP-11X-CREWD-130004
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

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)
Reinstated depot building	13.85m to apex of roof



N

Keyplan:

Coordinates are to be Ordance 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 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)
- Limits of permanent access
- Reinstated depot building

Notes:

1. All dimensions and levels are approximate.
2. The Site Works Parameter Key Plan identifies each zone independently.
3. 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.

10m 0 10m

Scale 1:200 at A1
1:400 if reproduced at A3

FOR APPROVAL

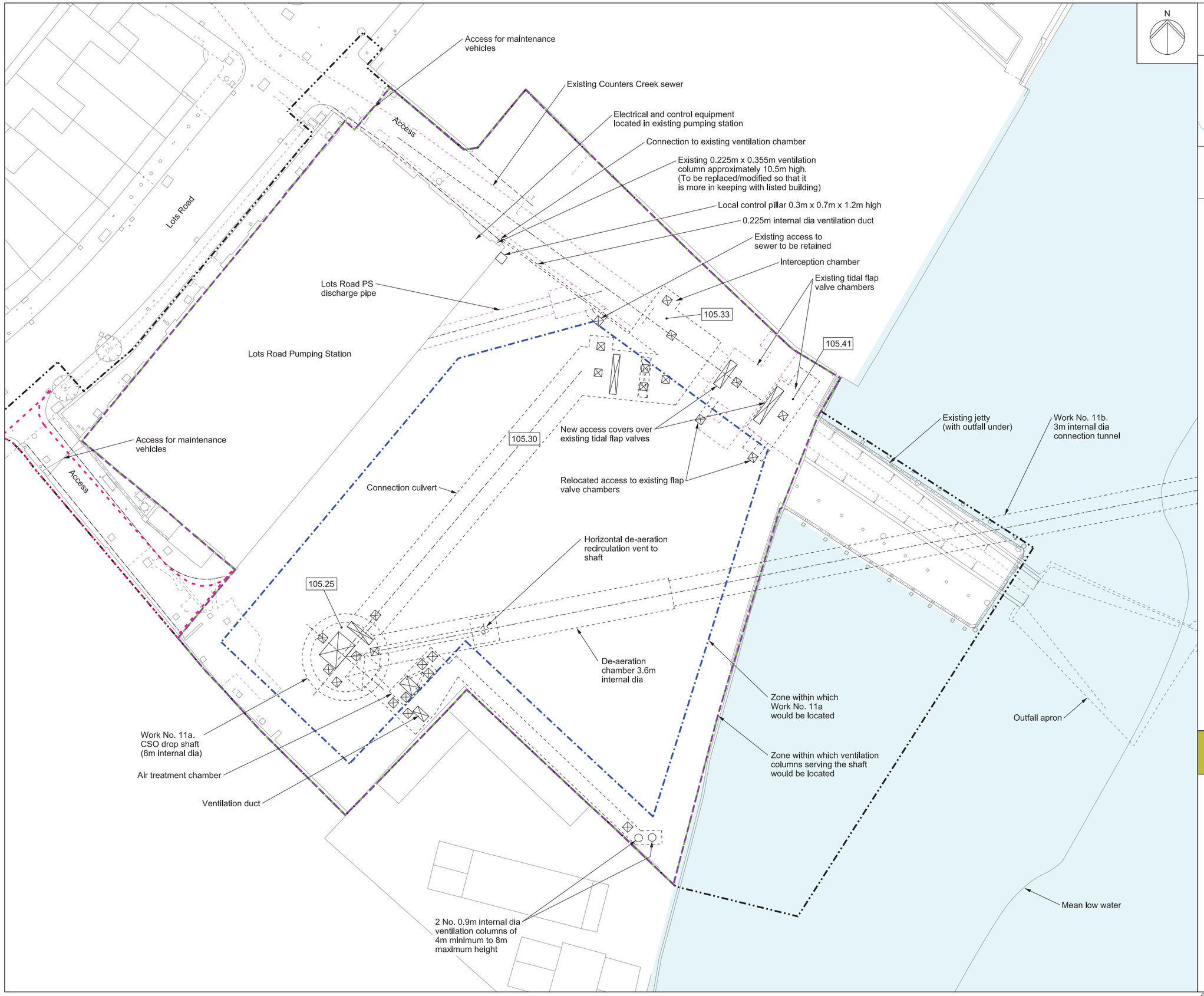
Location
Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information
Application for Development Consent
Site works parameter plan

Book of plans - section 13
DCO-PP-11X-CREWD-130005
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water



Keyplan:

Coordinates are to be Ordance 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)
- Existing sewers
- Proposed access cover
- 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
- Limits of permanent access

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.

10m 0 10m

Scale 1:200 at A1
1:400 if reproduced at A3

ILLUSTRATIVE

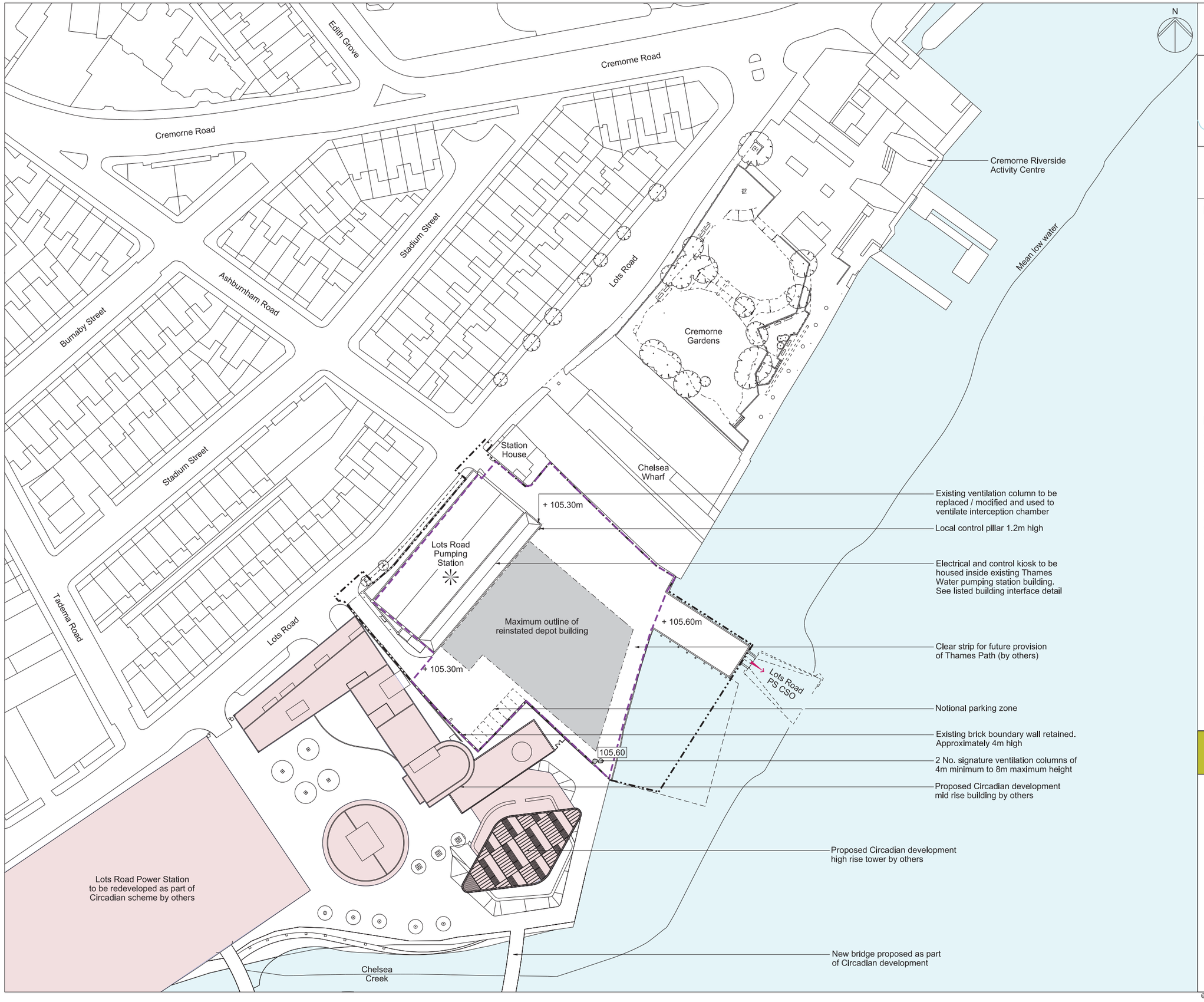
Location
Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information
Application for Development Consent
Permanent works layout

Book of plans - section 13
DCO-PP-11X-CREWD-130007
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water



Keyplan:

Coordinates are to be Ordance 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)
- 105.40 — Proposed levels (shown in metres above tunnel datum)
- Consented development footprint (by others)
- Listed buildings/structures
- Approximate position of CSO outlet
- Existing trees within surveyed area (trunk sizes vary)

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.
4. Access covers not shown on this drawing. Refer to the Permanent works layout for an indication of the extent of access covers required.

10m 0 40m

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

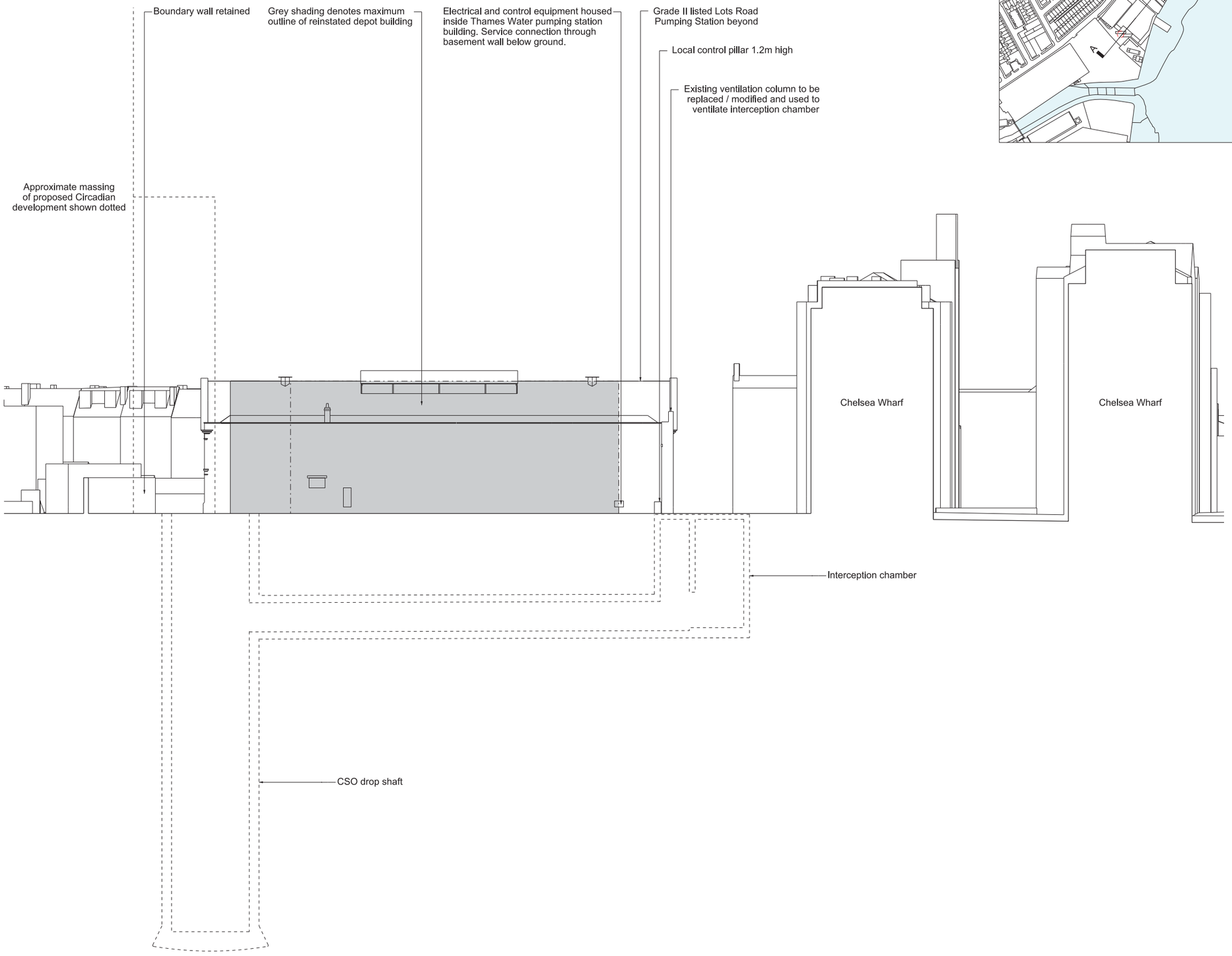
ILLUSTRATIVE
Save for the scale of above ground structures which is indicative

Location
Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information
Application for Development Consent
Proposed
Site features plan
Book of plans - section 13
DCO-PP-11X-CREWD-130008
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water



Section AA

Keyplan:

Coordinates are to be Ordance 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.

10m 0 10m

Scale 1:200 at A1
1:400 if reproduced at A3

ILLUSTRATIVE

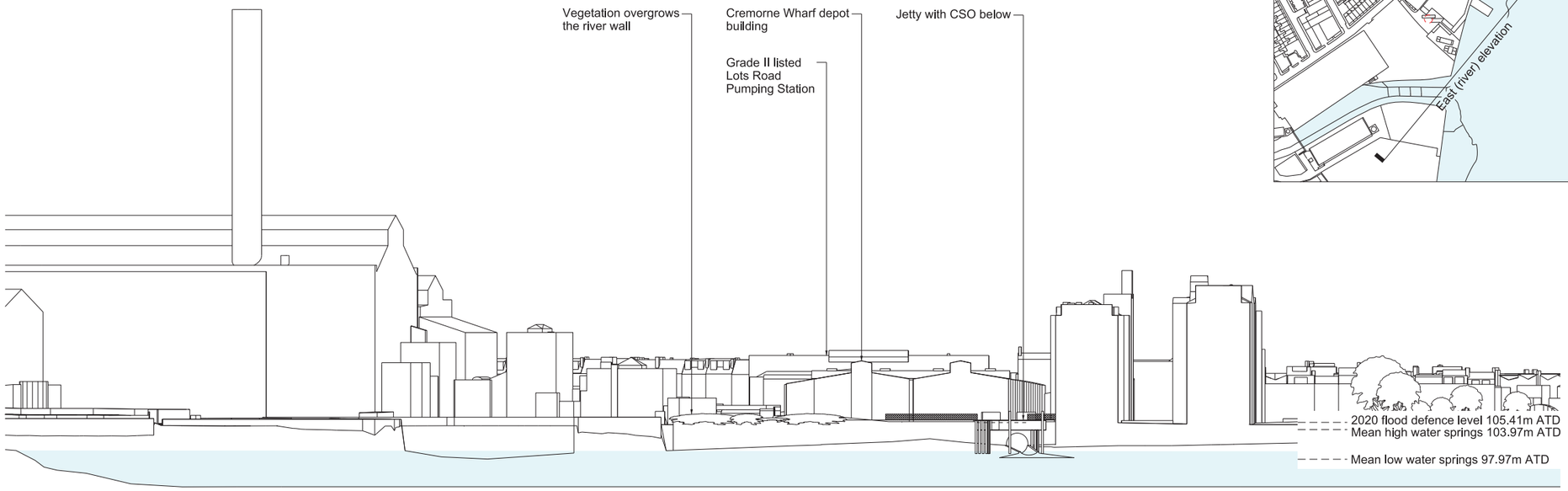
Location
Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information
Application for Development Consent
Section AA

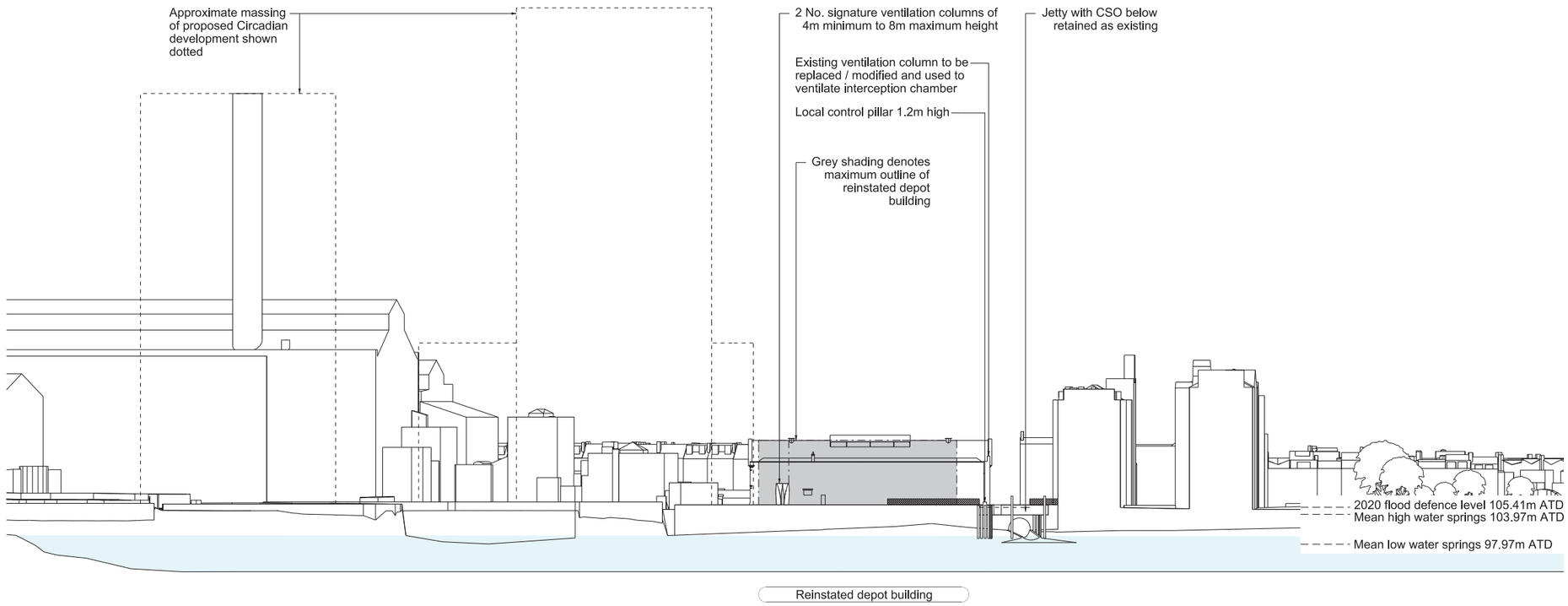
Book of plans - section 13
DCO-PP-11X-CREWD-130009
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water



As existing East (river) elevation



Proposed East (river) elevation

Keyplan:

Coordinates are to be Ordance 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.

10m 0 40m

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

ILLUSTRATIVE

Location

Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information

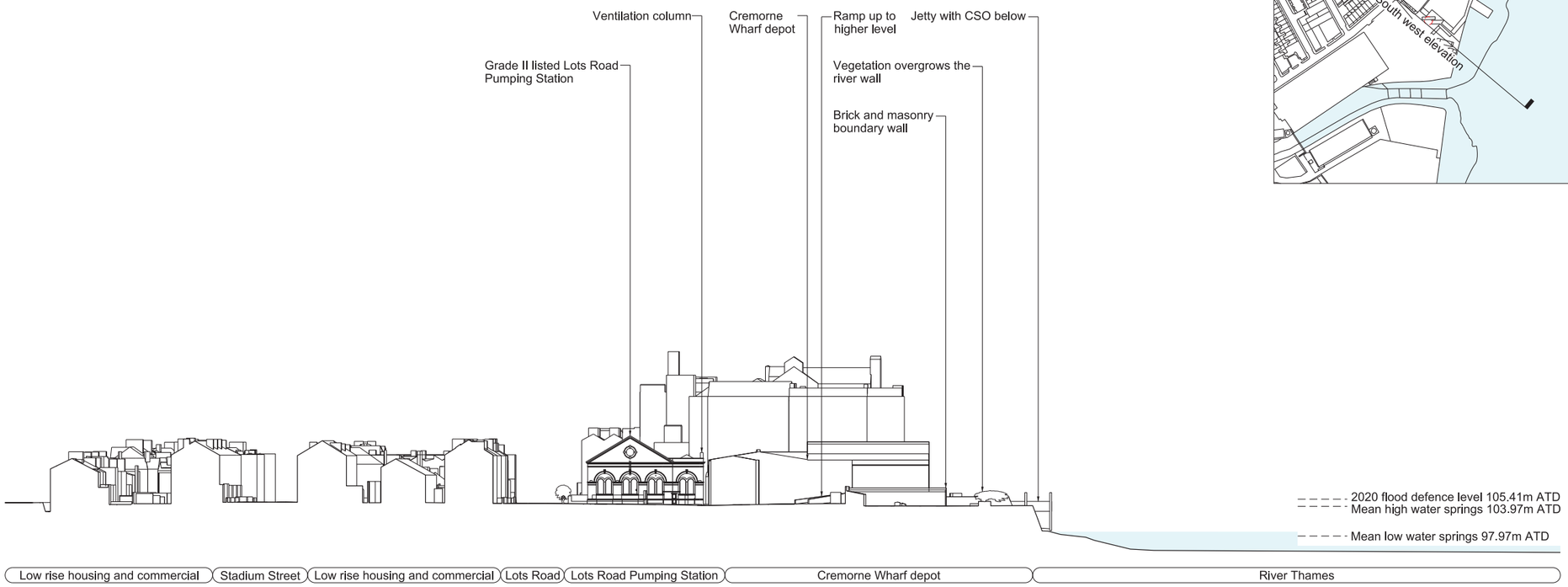
Application for Development Consent

As existing and proposed
East (river) elevation
Book of plans - section 13

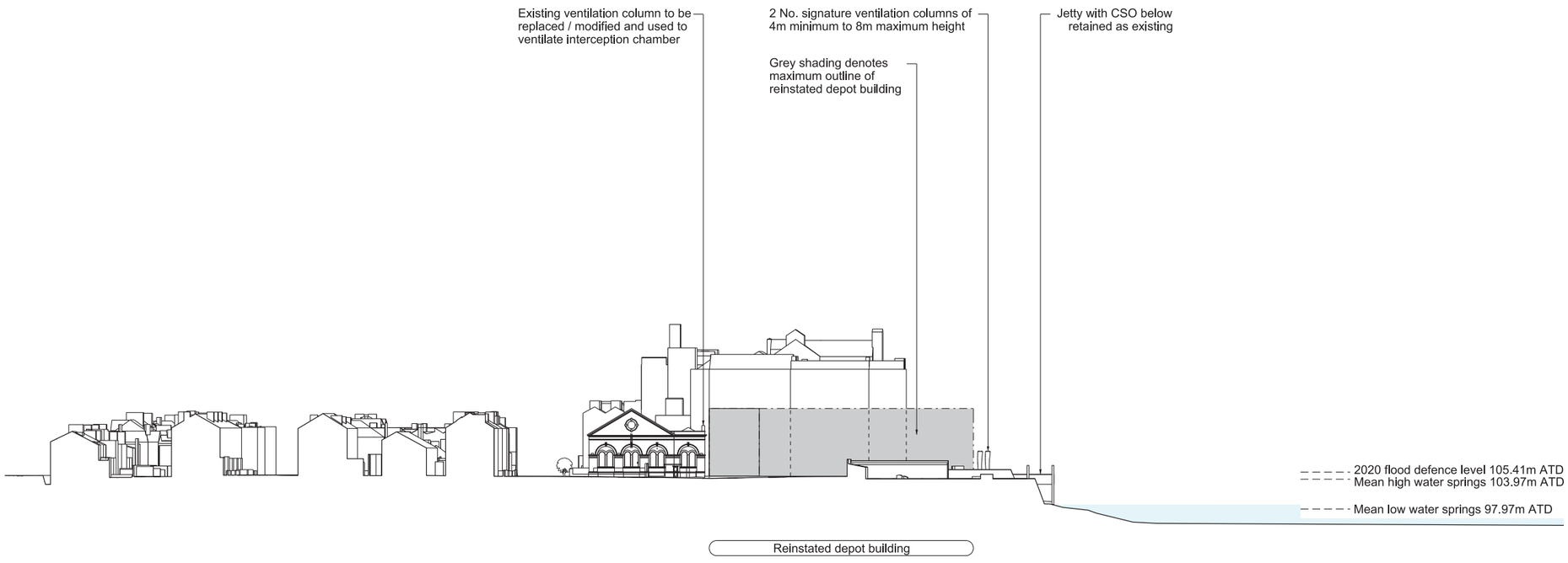
DCO-PP-11X-CREWD-130010
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water



As existing South west elevation



Proposed South west elevation

Keyplan:

Coordinates are to be Ordance 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.

10m 0 40m

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

ILLUSTRATIVE

Location

Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information

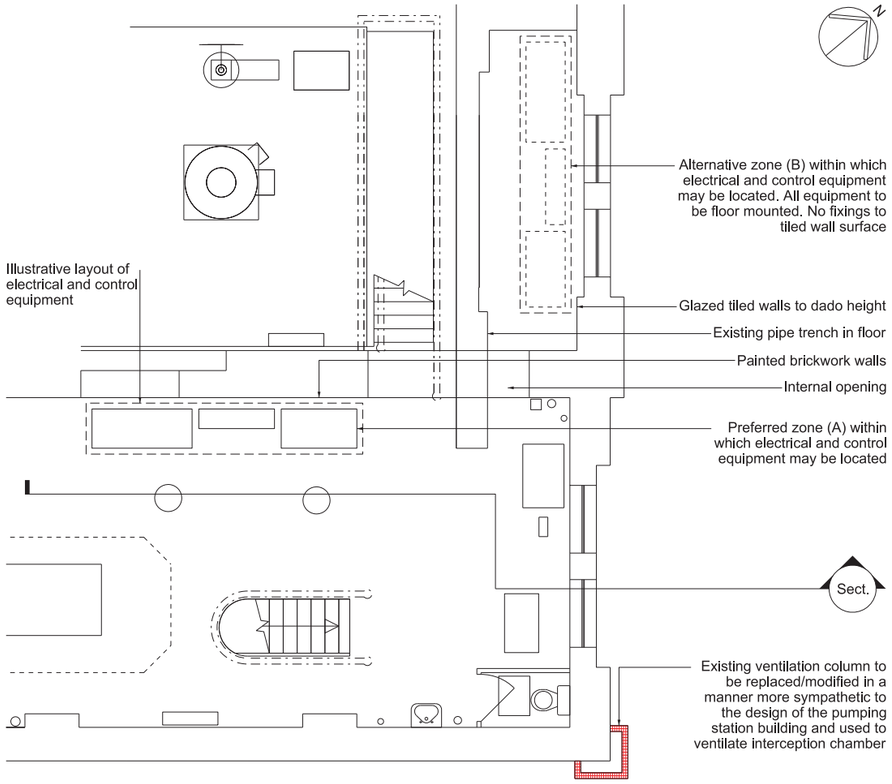
Application for Development Consent

As existing and proposed
South west elevation
Book of plans - section 13

DCO-PP-11X-CREWD-130011
January 2013

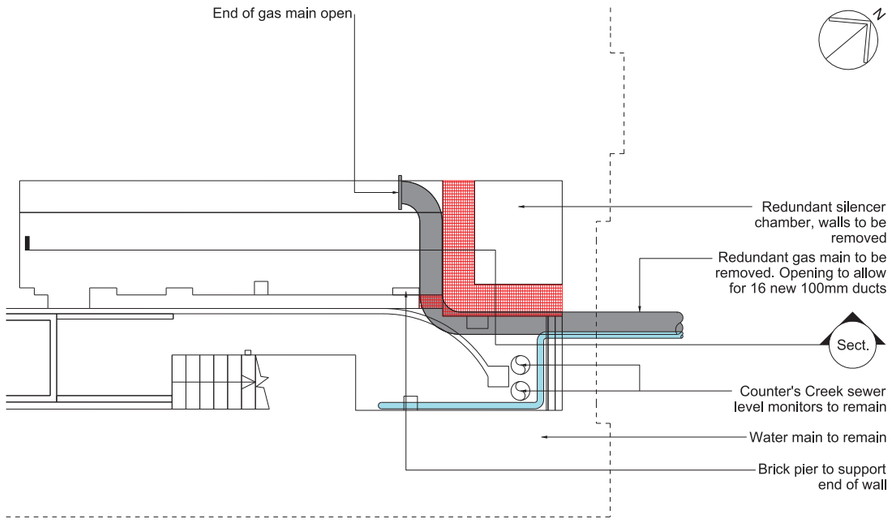
Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water



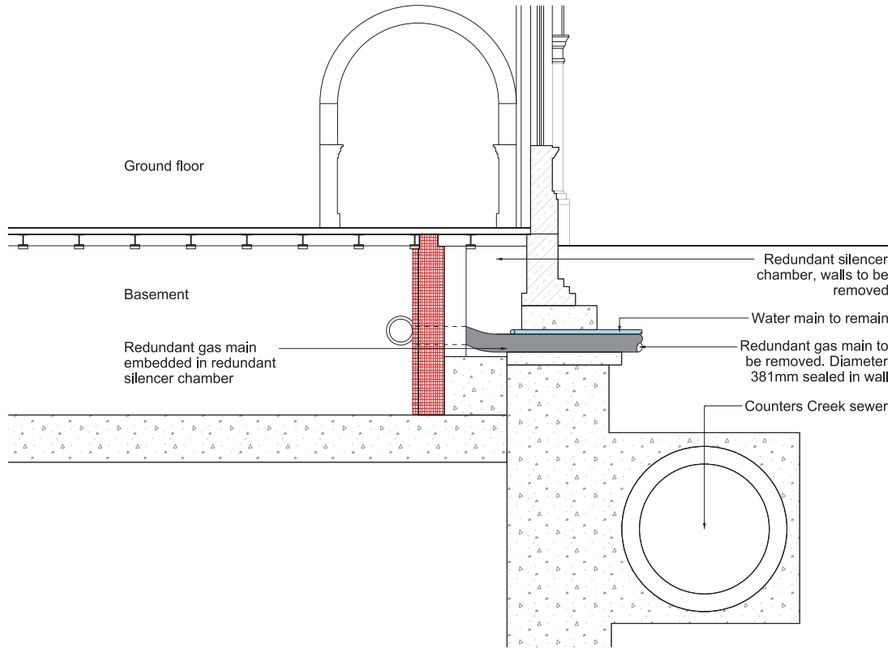
Intervention into pumping station (ground floor plan)

Scale 1:50



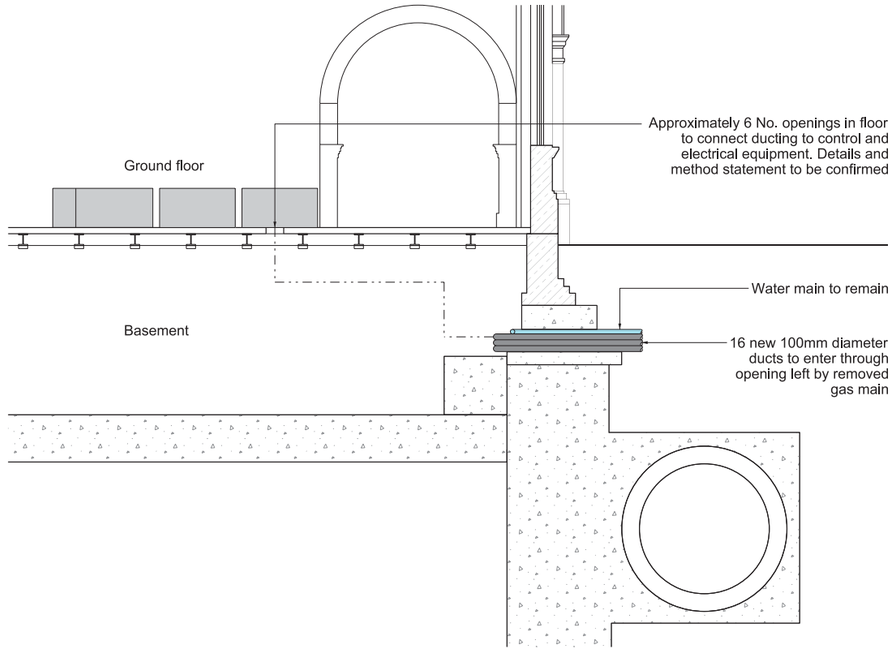
Intervention into pumping station (basement plan)

Scale 1:50



As existing detail section

Scale 1:50



Proposed detail section

Scale 1:50

Keyplan:

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

Key:

Maximum permanent extent of loss of listed buildings / structures

Notes:

1. All dimensions and levels are approximate.
2. Drawing is based on as-constructed drawings and topographical survey and not on heritage survey.

1m 0 4m

Scale 1:50 at A1
1:100 if reproduced at A3

FOR APPROVAL

Location

Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information

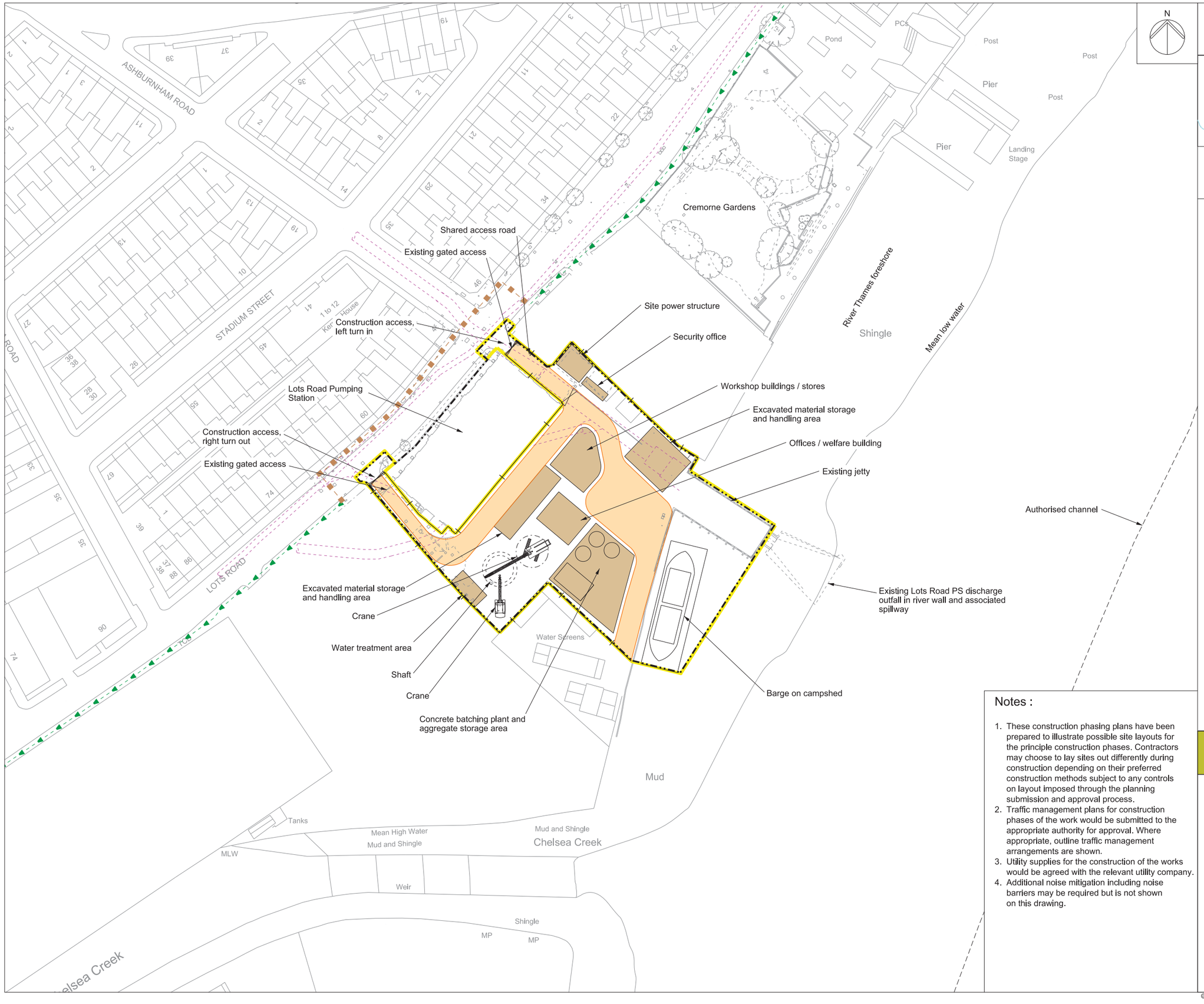
Application for Development Consent

Listed structure interface -
Lots road pumping station
Book of plans - section 13

DCO-PP-11X-CREWD-130012
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water



Keyplan:

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

Key:

- Limits of land to be acquired or used (LLAU)
- Hoarding
- Maximum extent of working area
- Existing public right of way
- Route of temporary diversion of right of way
- Site access
- Access / haul route
- Existing sewers

10m 0 40m

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.

ILLUSTRATIVE

Location

Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information

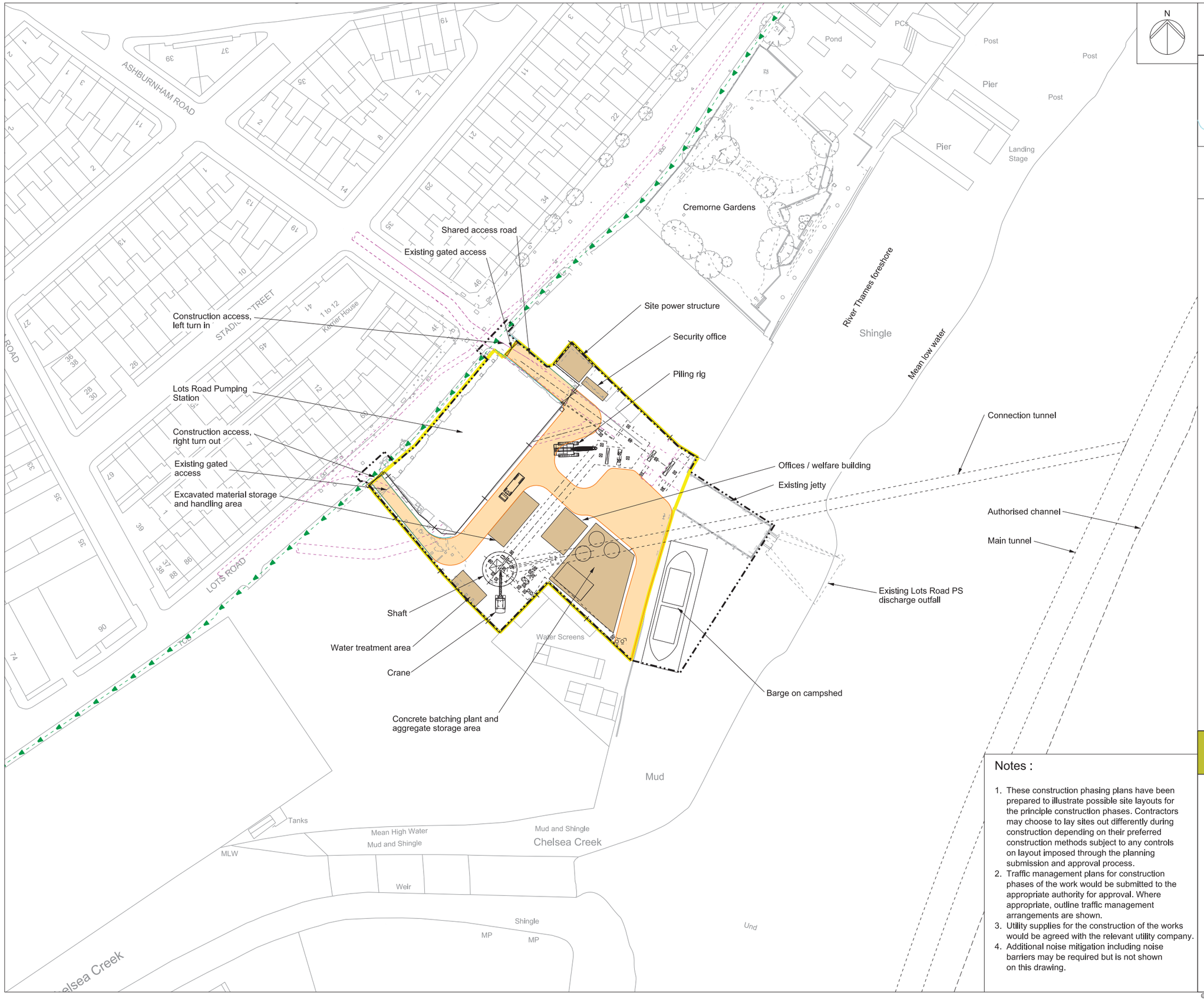
Application for Development Consent

Construction phases - phase 1
Site setup, shaft construction & tunnelling
Book of plans - section 13

DCO-PP-11X-CREWD-130013
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water



Keyplan:

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

Key:

- Limits of land to be acquired or used (LLAU)
- Hoarding
- Maximum extent of working area
- Existing public right of way
- Route of temporary diversion of right of way
- Site access
- Access / haul route
- Existing sewers

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

ILLUSTRATIVE

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.

Location

Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

Document Information

Application for Development Consent

Construction phases - phase 2
Construction of other structures
Book of plans - section 13

DCO-PP-11X-CREWD-130014
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

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Thames Water Utilities Limited
Clearwater Court, Vastern Road, Reading RG1 8DB

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