

Thames Tideway Tunnel
Thames Water Utilities Limited



Application for Development Consent

Application Reference Number: WWO10001

Planning Statement

Doc Ref: **7.01**

Appendix L

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

Hard copy available in

Box **44** Folder **A**
January 2013

**Thames
Tideway Tunnel**



Creating a cleaner, healthier River Thames

This page is intentionally blank

Thames Tideway Tunnel

Planning Statement Appendix L: Cremorne Wharf Depot

List of contents

	Page number
L.1 Introduction	1
L.2 Site description	1
L.3 Planning context	3
L.4 Description of development	5
Overview.....	5
Application for development consent.....	6
Construction	8
Site set-up	9
Shaft construction.....	9
Tunnel construction	10
Secondary lining of tunnel and shaft.....	10
Construction of other structures.....	11
Completion of works and site restoration.....	11
Operation.....	11
CSO drop shaft.....	11
Chambers and culverts.....	12
Tunnel	12
Ventilation structures	12
Electrical and control equipment.....	13
Access and movement	13
Typical maintenance regime.....	13
Scheme development.....	14
L.5 Site-specific planning considerations.....	18
Meeting the need.....	18
Good design	18
Managing construction impacts	18
Operational design	19
Retaining flexibility at Cremorne Wharf Depot.....	20
Enable the provision of a riverside walkway	21

Respect the historic character and fabric of the listed pumping station building.....	21
Conclusions	22
Water resources and flood risk	23
Air quality, emissions, dust and odour	24
Biodiversity and geological conservation	25
Landscape and visual impacts.....	27
Land use including open space, green infrastructure and green belt	28
Noise and vibration	30
Historic environment.....	31
Light.....	32
Traffic and transport	33
Waste management	36
Socio-economic	36
L.6 Overall conclusions	37
Annex L: Drawings for Cremorne Wharf Depot	39

List of figures

	Page number
Figure L.1 Aerial photograph of Cremorne Wharf Depot	2
Figure L.2 Visualisation of Cremorne Wharf Depot	5
Figure L.3 Construction timeline	8
Figure L.4 Functional components diagram.....	12
Figure L.5 Visualisation of the phase one consultation design	14
Figure L.6 Visualisation of the phase two consultation design.....	16
Figure L.7 Cremorne Wharf Depot: Lorry movements	34
Figure L.8 Cremorne Wharf Depot: Barge movements	35

List of tables

	Page number
Table L.1 Cremorne Wharf Depot: Drawings that define the proposed development.	6

Appendix L: Cremorne Wharf Depot

L.1 Introduction

- L.1.1 In a typical year, the Lots Road Pumping Station combined sewer overflow (CSO) discharges 1,140,000m³ of untreated sewage into the tidal Thames in front of Cremorne Wharf in the Royal Borough of Kensington and Chelsea. The Environment Agency identified the Lots Road Pumping Station CSO as a CSO that needs to be controlled.
- L.1.2 On the basis that litter tonnages are proportional to discharge volumes, approximately 288 tonnes of sewage derived litter is discharged from this CSO in the typical year.
- L.1.3 A worksite is required to intercept the Lots Road Pumping Station CSO and transfer flows into the main tunnel. The proposed site is known as Cremorne Wharf Depot and is located in the Royal Borough of Kensington and Chelsea, close to the boundary with the London Borough of Hammersmith and Fulham. The Location plan is provided in Annex L.
- L.1.4 This section is structured as follows:
- a. Section L.2 provides a brief description of the Cremorne Wharf Depot site.
 - b. Section L.3 sets out the planning context for works in this location.
 - c. Section L.4 describes the site-specific development for which consent is sought and how the proposals evolved through consultation.
 - d. Section L.5 analyses the principal site-specific planning considerations and how the proposals comply with relevant planning policy.
 - e. Section L.6 provides an overall conclusion of the site-specific assessment.

L.2 Site description

- L.2.1 The site comprises an existing council depot, the Thames Water Lots Road Pumping Station and the River Thames foreshore. An aerial image of the site is provided in Figure L.1 below.
- L.2.2 The depot includes a warehouse building with office and welfare facilities, two weighbridges, associated hardstanding and a jetty in the river. There is an existing campshed parallel to the river wall, south of the jetty, to provide a level resting place for barges. The Lots Road Pumping Station is Grade II listed and owned and operated by Thames Water as an unmanned emergency pumping station. The site is accessible via Lots Road.

Figure L.1 Aerial photograph of Cremorne Wharf Depot



- L.2.3 A depot building to house the waste management use was erected in 1992. The waste management use by the Western Riverside Waste Authority ceased in spring 2011 and the site was handed back to the owner, the Royal Borough of Kensington and Chelsea. The depot is currently used to store salt, street cleaning equipment and Holland Park Opera sets. Cremorne Wharf is not currently used for cargo handling.
- L.2.4 The 1904 Grade II listed Lots Road Pumping Station serves the Counters Creek and Walham Green sewers that flow beneath the site.
- L.2.5 The site is bounded to the northeast by the Station House associated with the pumping station and the mixed-use Chelsea Wharf, to the south-east by the River Thames, to the southwest by the Lots Road Power Station site, and to the northwest by Lots Road.
- L.2.6 The area is dominated by the decommissioned Lots Road Power Station to the southwest on Chelsea Creek, which once supplied electricity to the London Underground. The power station on the site directly adjacent to the Cremorne Wharf Depot, now partially demolished, is not listed and features a 50m high generating building with a pitched roof and two chimneys. The site is being redeveloped, subject to planning permission PP/02/01324 and is discussed in more detail under the Planning context subsection.
- L.2.7 The depot site falls within the designated Lots Road Employment Zone, which is known for clusters of antiques and art-related firms. The employment zone follows the route of Lots Road from the Kings Road to the north and covers commercial properties, auction rooms, the disused

- Lots Road Power Station, Lots Road Pumping Station, Cremorne Wharf Depot and Chelsea Wharf.
- L.2.8 The site is located adjacent to the River Thames which designated as the Thames Conservation Area and River Thames (including Chelsea Creek) Site of Nature Conservation Importance (Metropolitan).
- L.2.9 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 terraced housing, across Cremorne Road/Cheyne Walk (A3220).
- L.2.10 The Green Flag award-winning Cremorne Gardens are to the north-east of Chelsea Wharf and contain the original gates to the Victorian pleasure garden that existed from 1845 to 1877 between the river and the Kings Road. The gates were previously located on Kings Road and were incorporated on this site when it was re-landscaped in 1981/2.
- L.2.11 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. The centre offers canoeing and kayaking for nine to 19 year olds and commercial groups. Beyond the Cremorne Riverside Activity Centre are some residential house boats moored on the River Thames.
- L.2.12 The area to the west of the site is characterised by the same 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 Uperne Road and Tetcott Road, which was opened in 2009. The grid is broken by Westfield Park to the north of Tetcott, Uperne and Uverdale roads. The park provides play equipment and green space.
- L.2.13 The Thames Path National Trail runs to the north of the site, along the southern side of Lots Road. The path runs from the source of the river in the Cotswolds to the Thames Barrier in Greenwich. National Cycle Route 4 also travels along Lots Road on its route between London and Fishguard.
- L.2.14 The Existing site features plan is located in the Annex L.

L.3 Planning context

- L.3.1 In developing the proposals and mitigation measures for the development at Cremorne Wharf Depot, Thames Water¹ had regard to the policies offset out in the National Policy Statement for Waste Water (the 'NPS') and to Development Plan Documents where they are relevant to the application.

¹ Thames Water Utilities Ltd (TWUL). The Draft Development Consent Order (DCO) contains an ability for TWUL to transfer powers to an Infrastructure Provider (as defined in article 2(1) of the DCO) and/or, with the consent of the Secretary of State, another body.

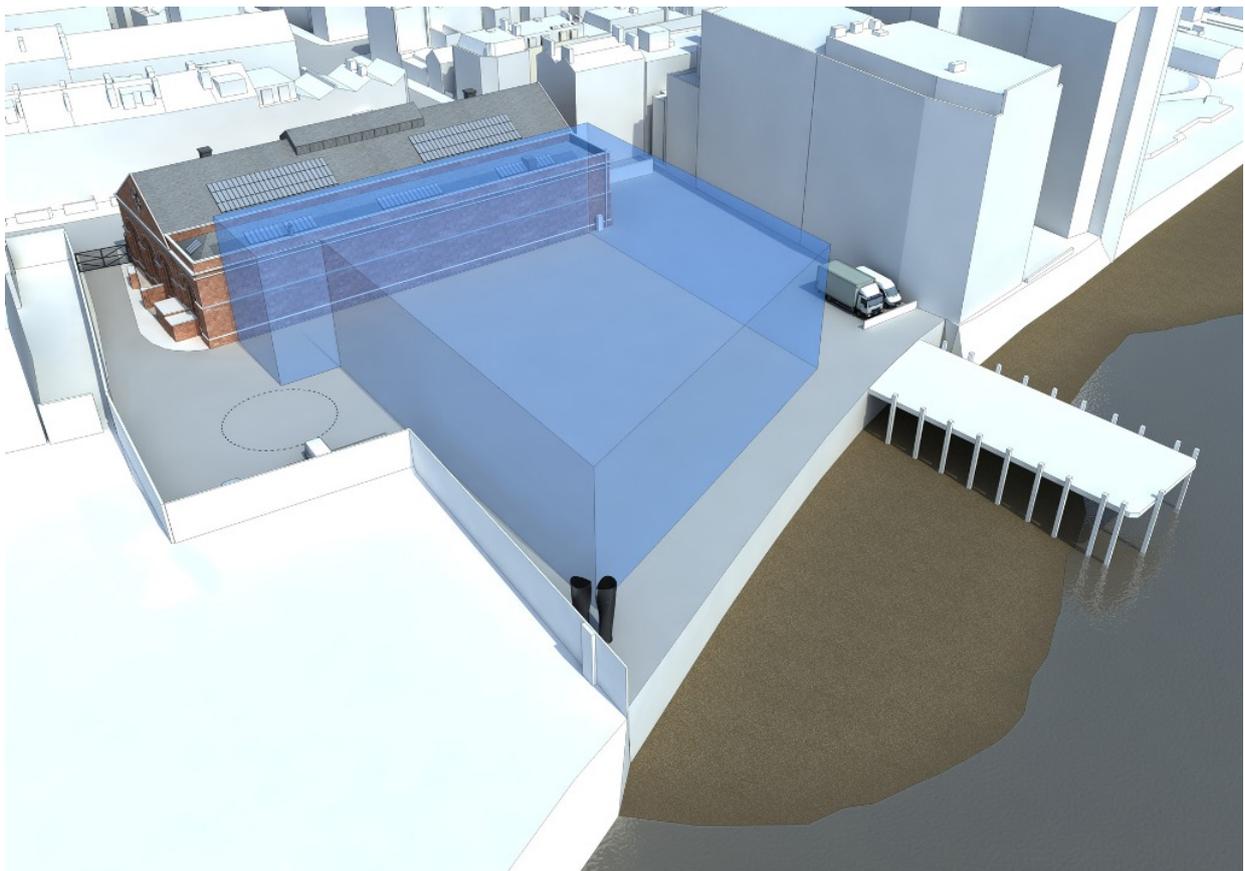
- L.3.2 In this case, the statutory development plan comprises of the *London Plan* (2011), the Royal Borough of Kensington and Chelsea's *Core Strategy* (2010) and saved policies from the Royal Borough of Kensington and Chelsea's *Unitary Development Plan* (2002).
- L.3.3 Cremorne Wharf Depot is a designated waste management site in *Core Strategy* Policy CE3, which seeks to maximise its use for waste management, water transport and cargo-handling purposes. Cremorne Wharf is also safeguarded from redevelopment into non-cargo handling uses by a ministerial direction.
- L.3.4 There are several planning applications which are relevant to the site and its context, as identified below beginning with the most recent.
- L.3.5 On 25 June 2012, the Royal Borough of Kensington and Chelsea submitted a planning application for a mixed-use development including 48 residential units on the depot site (PP/12/02224). At the time of writing, the decision was pending. This proposed development challenges the site's designated waste and safeguarded wharf status and inevitably the level of detail and agreement as to the future restoration of the site is less certain as a result. In addition, Thames Water's emerging proposals for the Counter's Creek Flood Alleviation Scheme may also influence the layout of the site.
- L.3.6 The Lots Road Power Station site directly to the southwest is being redeveloped by Hutchison Whampoa subject to planning permission PP/02/01324. Planning permission was refused by the Royal Borough of Kensington and Chelsea on 13 November 2003 but allowed by the Secretary of State. The scheme retains the generating hall as a mixed-use development with new buildings on site, including a 30-storey residential tower, a three to eight-storey commercial and residential building and a seven-storey residential building along the boundary of the Cremorne Wharf Depot site. The proposals include 420 new dwelling units. There is a similar 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 (planning permission 2002/03132/FUL) which was approved by the Council on 19 April 2004. Together these applications were called in by the Secretary of State and approved 30 January 2006.
- L.3.7 Cremorne Wharf Depot was used as a waste management site for road and river transportation subject to planning permission TP/92/0929 (granted 29 October 1992). It is noted that a planning condition for provision of a 5m wide strip of land for a maintained riverside walkway was not adhered to. An application was submitted to vary conditions regarding operating hours, to enable the site to operate at weekends, evenings and three designated bank holidays (PP/00/00110) but this was later withdrawn.

L.4 Description of development

Overview

- L.4.1 The proposed development at Cremorne Wharf Depot would intercept the Lots Road Pumping Station CSO. The works would convey the flows from the existing CSO, which discharges through the existing river wall underneath the jetty, to the main tunnel.
- L.4.2 The work would require the demolition of an existing Royal Borough of Kensington and Chelsea depot building and the construction of a CSO interception chamber, hydraulic structures (including chambers, culverts and pipes) and ventilation structures. Electrical and control equipment would be located within the existing listed pumping station. Flows would be transferred from the relatively shallow depth of the existing sewer to the deeper level of the main tunnel via a CSO drop shaft and associated connection tunnel. The CSO drop shaft would be approximately 42m deep.

Figure L.2 Visualisation of Cremorne Wharf Depot



- L.4.3 Two signature ventilation columns would allow air into and out of the shaft and an existing ventilation column on the side of the pumping station building would be used to provide ventilation to the interception chamber.

- L.4.4 Apart from the ventilation columns, the structures would be finished flush with existing ground level, and the site would be reinstated with hardstanding and returned for use as a depot or wharf.
- L.4.5 All works would be contained within the relevant zones as indicated on the Site works parameter plan contained in the *Book of Plans*, which accompanies the application.
- L.4.6 The layout of the proposed above-ground features is illustrative as agreed with the Royal Borough of Kensington and Chelsea. This means that the submitted design is one way in which the development may be laid out, but there may be a number of other acceptable ways within the parameters. This retains flexibility and seeks to ensure future users of Cremorne Wharf Depot site are not compromised, while retaining Thames Water maintenance access.

Application for development consent

- L.4.7 The geographic extent of the proposals for which development consent is sought is defined by the limits of land to be acquired or used which is illustrated in the *Book of Plans*. Table L.1 below sets out where the site-specific information for Cremorne Wharf Depot can be found.

Table L.1 Cremorne Wharf Depot: Drawings that define the proposed development

Drawing title	Status	Location
Location plan	For information	<i>Book of Plans</i> , Section 13
As existing site features plan	For information	<i>Book of Plans</i> , Section 13
Access plan	For approval	<i>Book of Plans</i> , Section 13
Demolition and site clearance plans	For approval	<i>Book of Plans</i> , Section 13
Site works parameter plan	For approval	<i>Book of Plans</i> , Section 13
Site works parameter key plan	For information	<i>Book of Plans</i> , Section 13
Permanent works layout	Illustrative	<i>Book of Plans</i> , Section 13
Proposed site features plan	Illustrative (save for the scale of the above ground structures, which is indicative)	<i>Book of Plans</i> , Section 13
Section AA	Illustrative	<i>Book of Plans</i> , Section 13
As existing and proposed elevation (various)	Illustrative	<i>Book of Plans</i> , Section 13
Listed structure interface - Lots Road Pumping Station	For approval	<i>Book of Plans</i> , Section 13
Construction phases (various)	Illustrative	<i>Book of Plans</i> , Section 13

Drawing title	Status	Location
Existing utilities plan	For information	<i>Utilities Statement</i>
River foreshore zones of working	For information	<i>Navigational Issues and Preliminary Risk Assessment Cremorne Wharf Depot</i>
Existing highway layout	Illustrative	<i>Transport Assessment</i>
Highway layout during construction	Illustrative	<i>Transport Assessment</i>
Permanent highway layout	Illustrative	<i>Transport Assessment</i>
River foreshore zones of working	For information	<i>Navigational Issues and Preliminary Risk Assessment Cremorne Wharf Depot</i>

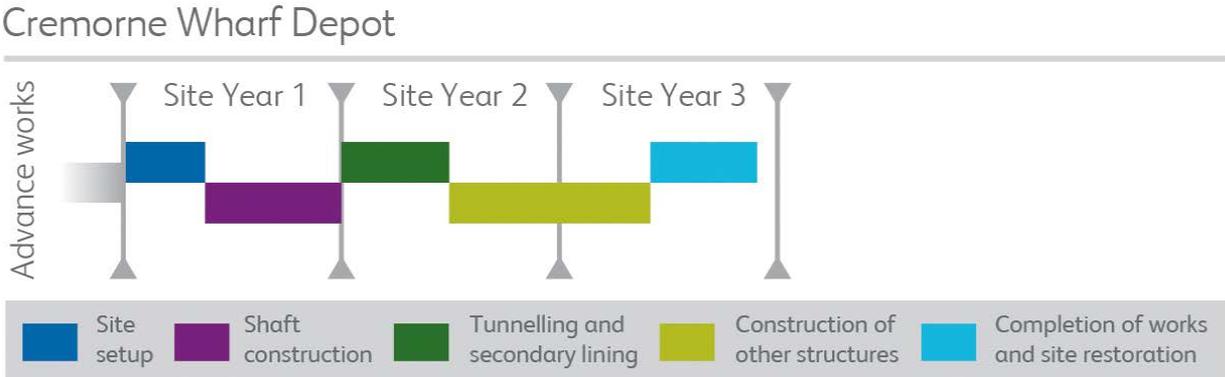
L.4.8 The Nationally Significant Infrastructure Project (NSIP) works (Work Nos. 11a and b) comprise the construction of a CSO drop shaft with an internal diameter of approximately 8m and depth of 42m and a short connection tunnel to the main tunnel. Associated development (Work no. 11c) comprises the works to intercept and divert flow from the Lots Road Pumping Station CSO to the drop shaft including construction of an interception chamber, CSO overflow structures, hydraulic structures, chambers with access covers, structures for air management plant and equipment and other structures including culverts, pipes and ducts to modify, connect, control, ventilate and intercept flow. The full description of the proposed development can be found in Schedule 1 to the *Draft DCO*. Further details of the temporary construction works and permanent operational structures are contained below and an extended description can also be found in the *Environmental Statement* (Vol 12, Section 3).

L.4.9 At this site, approval is sought for the works shown on the Works plan showing the main tunnel (west central) (Work no. 1b), Cremorne Wharf Depot CSO drop shaft (Work No. 11a), Lots Road connection tunnel (Work no. 11b) and the Site works parameter plan, which shows the relevant zones and LLAU in which the associated development works would be undertaken (Work No. 11c) Access plans, and Demolition and site clearance plans. The plans for approval are contained in *the Book of Plans* along with other plans showing the construction phasing and permanent works plans relevant to this site. These other plans are marked either for approval, for information, indicative or illustrative depending on the level of detail they are providing. Section 5 of this document explains in more detail the overall approach to the level of detail and how the plans for approval have been developed. The Good design subsection of this appendix explains the level of detail with regard to the proposed above ground structures at this site and the need to obtain further approvals.

Construction

- L.4.10 The construction is programmed to take approximately three years and would involve the following main works:
 - a. site set-up (approximately four months)
 - b. shaft construction (approximately eight months)
 - c. tunnelling and secondary lining (approximately six months)
 - d. construction of other structures (approximately 12 months)
 - e. completion of works and site restoration (approximately five months).
- L.4.11 The project timeline is presented graphically below in Figure L.3.
- L.4.12 Connection of utilities and diversion of minor utilities may be conducted in advance of the main activities listed above.
- L.4.13 The majority of construction would occur during standard working hours from 8am to 6:30pm Monday to Friday and 8am to 1:30pm Saturdays. Construction activities may occasionally be required outside of these hours during key construction activities subject to agreement with the local authority.

Figure L.3 Construction timeline



- L.4.14 Heavy goods vehicle (HGV) movements would be limited to standard working hours. In exceptional circumstances HGV and abnormal load movements could occur up to 10pm on weekdays for large concrete pours and later at night on agreement with the local authority.
- L.4.15 A short period of 24-hour working would be required for the connection tunnel and secondary lining. During this period of continuous working, activities would be predominantly below ground, with support activities occurring at ground level. However HGV movements would be limited to weekday daytime hours.
- L.4.16 Barge loading and movements would be restricted to 8am to 6pm. This could be extended to 10pm subject to the agreement of the Royal Borough of Kensington and Chelsea.
- L.4.17 Further information about working hours and site-specific restrictions are contained within the *Code of Construction Practice (CoCP)* Parts A and B.

- L.4.18 Construction vehicles would access the site via Cremorne Road/Cheyne Walk (A3220) and along Lots Road turning left into the site. Construction vehicles would leave the site following the same route, turning right out of the site. Some minor modifications would be required to the site access on Lots Road.
- L.4.19 It is anticipated that an average of five HGVs would access the site per day for the majority of the construction period. This would rise to approximately 12 HGVs per day over an estimated six month total period split between the demolition of the existing depot building, the site setup period and during the construction of other structures. There may be additional periods during key construction activities when these HGV numbers would need to be exceeded. Further details regarding the number and breakdown of anticipated HGVs accessing the site per day is contained within the *Transport Assessment*, which accompanies the application.
- L.4.20 Potential layouts of the construction site are shown on the Construction phasing plans contained in Annex L. It should be noted that these layouts are illustrative only. The contractor may arrange the site in a different way, depending on the chosen construction method, provided that any environmental effects are appropriately managed.

Site set-up

- L.4.21 The site boundary would be established and secured. Welfare and office facilities would also be set up and the existing access off Lots Road would be widened to accommodate construction vehicles accessing the site.
- L.4.22 The existing council depot building and associated weighbridges, welfare/office buildings and road ramps would be demolished and removed. One tree located in the southeast corner of the depot compound would also need to be removed.
- L.4.23 The existing campshed would be inspected and upgraded as necessary. It is assumed that no dredging would be required at this site, although it is likely that there would be some disturbance to the riverbed during inspection and upgrading of the campshed.
- L.4.24 Potential scour would be monitored during the construction works. Any need for scour protection to the cofferdam, the adjacent river walls or other third party structures would be identified using the approach set out in the scour and accretion monitoring and mitigation strategy for temporary works in the foreshore (*Environmental Statement*, Vol 3, Section 14, Appendix L.4).

Shaft construction

- L.4.25 The shaft would have a primary sprayed concrete lining with an *in situ* reinforced concrete secondary lining. To construct the shaft, a piling rig would drive sheet piles through the terrace gravels to cut off any potential ground water ingress. The shaft would be excavated using a tracked excavator which would load shaft skips with excavated material. These would be hoisted by crawler crane, depositing the excavated material within the excavated material handling area.

- L.4.26 The sprayed concrete lining would be formed by pumping concrete through a nozzle onto the vertical face of the shaft excavation.
- L.4.27 The base of the shaft is anticipated to be constructed in the Lambeth Group that has high water pressures. The ground would need to have the water pressure reduced by dewatering. Approximately six dewatering wells would be installed in advance of shaft excavation. Approval would be sought from the Environment Agency so that extracted groundwater can be discharged directly into the river. Extracted water would be sampled on a regular basis to check water quality.
- L.4.28 A steel reinforced concrete base plug would be formed at the base of the shaft. Concrete would be delivered to site in ready mix concrete mixer trucks and discharge into a truck mounted concrete pump and pumped to the base plug.

Tunnel construction

- L.4.29 To connect the CSO drop shaft to the main tunnel a connection tunnel (approximately 3m internal diameter and 188m long) would be constructed using the sprayed concrete lining techniques described above.
- L.4.30 The ground at the tunnel eyes is London Clay and no additional ground treatment for the launch and reception areas is expected at this location. De-pressurisation of the underlying Lambeth Group may be required.
- L.4.31 There is a requirement for an approximately 1m diameter horizontal de-aeration recirculation vent from the horizontal de-aeration chamber at the bottom of the shaft, positioned approximately 12m from the edge of the shaft. This would be constructed from the surface using a piling rig installing a steel casing. The cross connection from the vent to the CSO shaft would be constructed from the surface in a supported trench.

Secondary lining of tunnel and shaft

- L.4.32 Secondary lining is an additional layer of concrete placed against the inside of a tunnel's primary sprayed concrete lining for watertightness and to improve the overall structural durability. Both the short connection tunnel and the shaft would have a reinforced concrete secondary lining.
- L.4.33 The secondary lining of the connection tunnel would be constructed by installing steel reinforcement, erecting a cylindrical shutter within a short length of tunnel and pumping concrete into the gap between the shutter and the primary lining. Once the concrete hardens sufficiently, the shutters would be removed and erected in the next section of tunnel.
- L.4.34 It is assumed that the lining of the CSO shaft would be made of reinforced concrete placed inside the shaft's primary support. The steel reinforcement would be assembled in sections and a shutter would be used to cast the concrete against. The shutter would be assembled at the bottom of the shaft and sections of reinforcement installed and lining cast progressively up the shaft.
- L.4.35 Any reinforced concrete structures internal to the main tunnel shaft and the roof slab would be constructed in a similar manner progressively from the shaft bottom. In some cases precast concrete members may be used.

Construction of other structures

- L.4.36 An interception chamber, connection culvert and valve chamber would intercept the CSO outfall running from the existing pumping station.
- L.4.37 Due to ground conditions and depth, secant or steel sheet piles would be driven to allow excavation for the interception chamber walls. These would be installed using a secant or sheet piling rig.
- L.4.38 Submersible pumps within the chamber would be utilised to manage groundwater ingress from the superficial deposits. The pumps would discharge to the River Thames after being treated through a 'settlement' system.
- L.4.39 The existing CSO crosses the edge of the site from Lots Road to the river where it discharges under the existing jetty. There is a double flap valve chamber with access points immediately in front the river wall. The access points would be improved by modifying the structure with an additional reinforced concrete box behind the river wall on top of the existing structure.
- L.4.40 Having established an improved access point the section of culvert around the interception chamber would have additional support installed.
- L.4.41 The chamber would be excavated to formation level and suitable temporary steel propping installed. Local ground treatment may be required where the piled walls span the top of the existing sewer outfall. The glass reinforced plastic or steel liner would be supported as the excavation around it proceeds and the existing culvert broken out. Alternatively, consent would be required to temporarily block of the existing outfall, pile through the structure and re-establish the connection.
- L.4.42 On completion of the chamber and connection works the drop shaft would have a permanent reinforced concrete roof slab installed. At this point the liner in the existing sewer would be dismantled allowing the flow to pass through the completed chamber.

Completion of works and site restoration

- L.4.43 On completion of the construction works the permanent works area would be finished with hard landscaping and a replacement depot building built.

Operation

CSO drop shaft

- L.4.44 The CSO drop shaft would be constructed to intercept the existing Lots Road Pumping Station CSO. The drop shaft would have an approximate internal diameter of 8m and 42m deep. Combined sewage flow diverted from the pumping station inlet would be conveyed to the drop shaft via an underground connection culvert and onwards to the main tunnel. The position of the drop shaft would allow for the reinstatement of the existing depot building.
- L.4.45 Ground level access covers would be installed on the top of the shaft for inspection and maintenance purposes.

Chambers and culverts

- L.4.46 The CSO interception chamber and valve chamber would be constructed on the existing Lots Road Pumping Station CSO. They would contain a penstock and flap valves to control flows into the main tunnel. All of these structures would sit below ground. Access covers would be installed on the top of the chamber for inspection and maintenance of the penstock and flap valves.
- L.4.47 A connection culvert would connect the interception chamber to the CSO drop shaft.

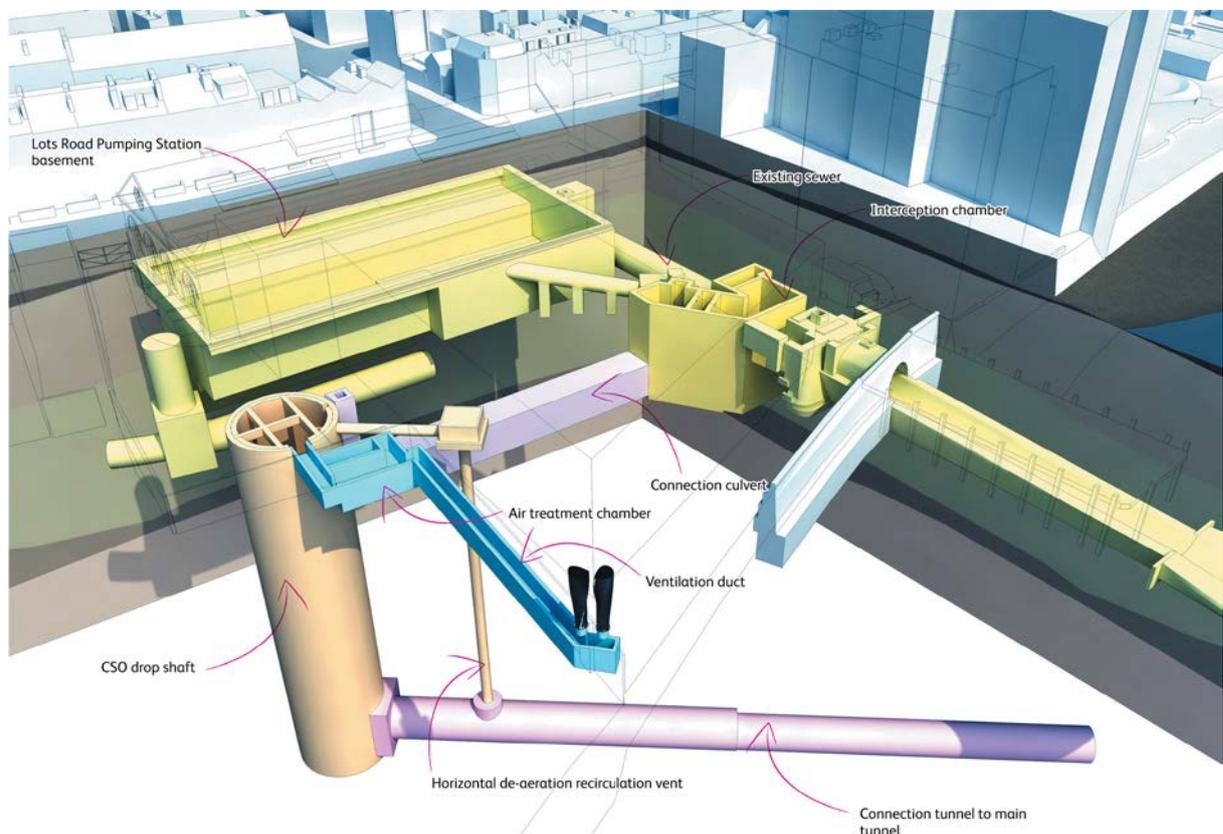
Tunnel

- L.4.48 A connection tunnel would be constructed to connect the CSO drop shaft to the main tunnel under the river. It would be approximately 3m in internal diameter and 188m long.

Ventilation structures

- L.4.49 There would be two ventilation columns serving the drop shaft, with an approximate internal diameter of 0.9m and be approximately 4m minimum to 8m maximum high. These ventilation columns would be of the project's 'signature' design and would be located on the periphery of the site in order to minimise any impact on the use of the site once the works are complete.
- L.4.50 Figure L.4 illustrates the functional components of the proposed development at Cremorne Wharf Depot.

Figure L.4 Functional components diagram



- L.4.51 An existing ventilation column on the corner of the pumping station building would be used to ventilate the interception chamber.
- L.4.52 An underground air treatment chamber would contain an air management filter and connect the ventilation columns to the structures that they would ventilate. The air treatment chamber would have a ground level access cover for inspection and maintenance purposes.

Electrical and control equipment

- L.4.53 Electrical and control equipment would be housed within the existing pumping station and interventions to the building would be as unobtrusive as possible, with cable ducts entering the building below-ground, using existing (redundant) penetrations in the basement wall.
- L.4.54 A local control pillar up to 1.2m high would be located adjacent to the pumping station building.

Access and movement

- L.4.55 The site has two existing access points on Lots Road, one entry and one exit. The access road in front of the entrance to Lots Road Pumping Station is owned by Thames Water. Egress from the site is via the southern point onto Lots Road. These access points would be used by vehicles accessing the Cremorne Wharf Depot site during construction and operation. See the Access plan in the *Book of Plans*.
- L.4.56 The access would be from the east end of the site (left turn in) and egress from the west (right turn out) on to Lots Road and Cremorne Road (A3220). Where practical, access and egress for HGVs would be between 9.30am and 3pm to avoid school traffic.
- L.4.57 There are no other vehicular points of access. The site may also be accessed from the river.
- L.4.58 It is intended to re-use the existing campshed to facilitate river transport of excavated material, however this may require some refurbishment before being suitable for use by barges. Further detailed information on traffic and access can be found in the *Transport Assessment* (Vol 10).

Typical maintenance regime

- L.4.59 Permanent vehicular access would be via Lots Road and the site would not be publicly accessible.
- L.4.60 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.
- L.4.61 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 require a small team of inspection staff and support crew and two mobile cranes to lower the team into the CSO drop shaft. The inspection would be carried out during normal working hours and

would likely take several weeks. Temporary fencing would be set up around the drop shaft for safety and security reasons.

- L.4.62 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 personnel with mobile cranes and vans.

Scheme development

- L.4.63 The proposed development of the Cremorne Wharf Depot site was subject to over two years of extensive consultation and engagement. Throughout this period the scheme evolved in response to consultation, through engagement with key stakeholders, and through on-going design development.
- L.4.64 At phase one consultation, which ran from September 2010 to January 2011, the preferred site to intercept the Lots Road Pumping Station CSO was Cremorne Wharf Foreshore (in front of the waste depot). Prior to phase one consultation, no suitable alternative land-based sites were identified as the residential area around this CSO is built-up and due to the configuration of the existing sewerage system. A temporary construction access route was proposed off Lots Road and along the western edge of Cremorne Gardens. Thames Water recognised the sensitivity of the gardens and continued to look for a viable alternative access route. It should be noted at this stage of the project the waste depot was operational and access through it was not judged to be feasible.
- L.4.65 In addition, the drop shaft would be located online (ie, where the main tunnel runs directly through the bottom of the shaft). This meant the internal diameter of the shaft needed to be 20m. In addition, a ventilation building was required as part of the proposed air management strategy at that stage. Refer to Figure L.5.

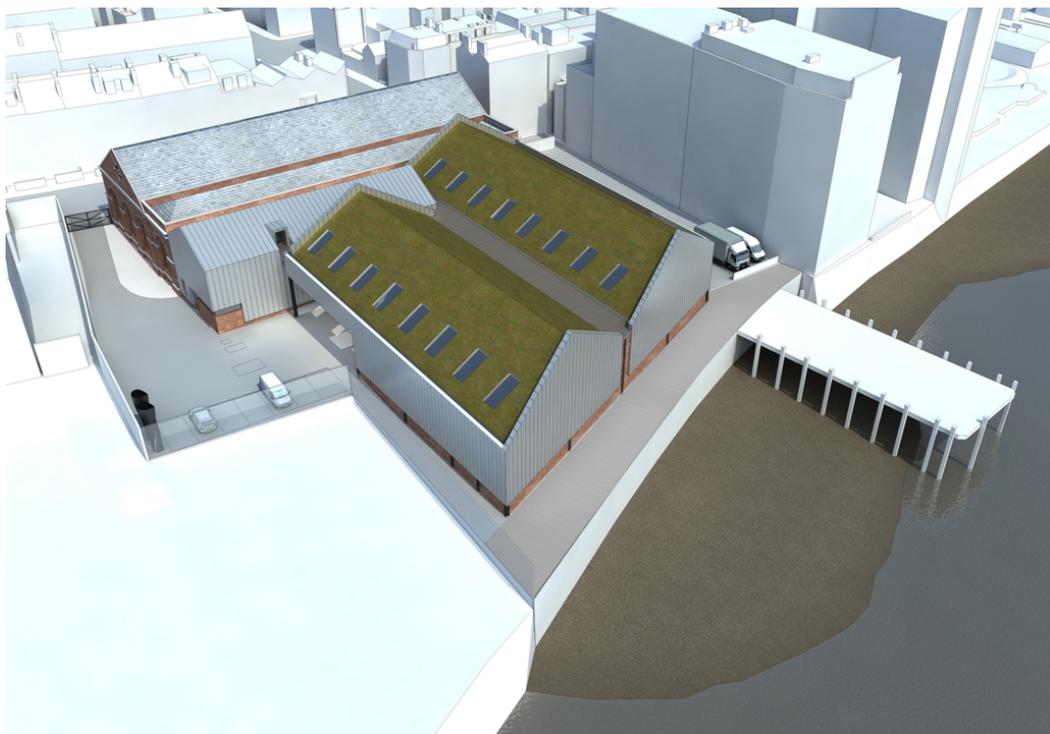
Figure L.5 Visualisation of the phase one consultation design



- L.4.66 Following phase one consultation, Thames Water considered on-going engineering developments, project design changes, phase one consultation feedback, interim engagement feedback, change of circumstances and new information.
- L.4.67 Further design developments led to changes to the air management strategy for the project, which enabled the drop shaft to be off-line (ie, where a short connection tunnel is required to connect to the main tunnel). This also reduced the size of the proposed shaft size from 20m internal diameter to 8m.
- L.4.68 At this point, the Royal Borough of Kensington and Chelsea indicated that the council depot at Cremorne Wharf could be made available to the project, subject to satisfactory interim arrangements. Objections were received to the use of our preferred Cremorne Wharf Foreshore site. The concerns mainly related to the proposed access route through Cremorne Gardens and loss of public open space, impact on residential amenity, traffic and congestion and the temporary and permanent protrusion beyond the existing river wall.
- L.4.69 All of the above information led to a 'back-check' process to review all potential sites to intercept the Lots Road Pumping Station CSO. The result was that Cremorne Wharf Depot was identified as a potential site.
- L.4.70 A sketch review presenting Cremorne Wharf Depot was conducted with the Design Council CABE in April 2011 based on an initial site assessment and sketched ideas for the site. The panel considered that the proposals responded to the functional context and evolving character of this part of the Thames riverside, which is set to change dramatically with the mixed-use development at Lots Road Power Station.
- L.4.71 As part of the back-check process Cremorne Wharf Foreshore and Cremorne Wharf Depot were compared in order to identify the phase two consultation site. In summary, Cremorne Wharf Depot was preferred because it is a land-based brownfield site, would utilise a safeguarded wharf, although minor works may be required to repair the existing campshed to allow river transport to be used, and the works would be located in a less prominent location.
- L.4.72 In comparison to Cremorne Wharf Foreshore it avoided the need to construct significant temporary cofferdam and permanent structures in the river and the associated cost, health and safety risks, would have significantly less effect on the river and aquatic ecology, townscape and river views, and the setting of the Thames Conservation Area. The site can also be accessed directly from Lots Road, avoiding the need to use Cremorne Gardens.
- L.4.73 The waste use within Cremorne Wharf Depot is no longer core to the Royal Borough of Kensington and Chelsea's operations, and the council is seeking to lift the safeguarded wharf status and bring forward a residential led mixed-use development on the site. The Greater London Authority is currently undertaking a Safeguarded Wharf Review and in the *Further Consultation Draft* (July 2012) (Table 7.1), the site is identified for retention as a wharf.

- L.4.74 At phase two consultation (November 2011 to February 2012) Cremorne Wharf Depot was presented as the preferred CSO site for the following reasons (not in order of importance):
- a. Cremorne Wharf Depot can be accessed from Lots Road using existing access points on either side of the pumping station and therefore avoids the need to create an access road across Cremorne Gardens, which was one of the main concerns identified during phase one consultation in relation to the foreshore site Cremorne Wharf Foreshore.
 - b. Cremorne Wharf Depot would avoid the need to undertake significant works and the construction of a structure in the foreshore and the associated cost, health and safety, and environmental impacts.
 - c. The site would utilise brownfield land and a safeguarded wharf, which would be used to support river transport during construction and would be reinstated with existing facilities post construction.
 - d. All of the works could be accommodated within the depot area of site Cremorne Wharf Depot, which creates a self-contained site that would likely have less effect on the surrounding residential properties.
 - e. Cremorne Wharf Depot is a safeguarded wharf and a designated waste management site, which means that (based on the current use), acquisition costs would be acceptable.
- L.4.75 Following phase two consultation the site was considered the most appropriate site to intercept the Lots Road Pumping Station CSO and was publicised as Thames Water's proposed site at Section 48 publicity, which ran from July 2012 to October 2012.

Figure L.6 Visualisation of the phase two consultation design



- L.4.76 No new objections to the use of Cremorne Wharf Depot were raised at Section 48 publicity. The Royal Borough of Kensington and Chelsea is due to enter into a collaboration agreement with Thames Water and the parties have worked to accommodate the requirements for a site to intercept the CSO. On this basis, it is likely that a practical solution can be achieved.
- L.4.77 It is also noted that the Greater London Authority and the Port of London Authority responded at consultation phases one and two stating that Cremorne Wharf must be returned to a viable working wharf on completion of the works. *London Plan* Policy 7.26 seeks to ensure that temporary uses do not preclude the reuse of wharfs for waterborne freight-handling uses
- L.4.78 The principal issues that arose from pre-application consultation and Section 48 publicity for Cremorne Wharf Depot are given below and where the issue is discussed in this assessment is signposted:
- a. Site selection and objection to the use of Cremorne Gardens: This issue is addressed in the above section on Scheme development and the Land use including open space, green infrastructure and green belt subsection.
 - b. Concerns regarding dust, air and noise pollution from construction activities and the effect quality of life and residential amenity: This issue is addressed in the Land use including open space, green infrastructure and green belt, and Socio-economic subsections below.
 - c. The river should be used to transport more/all construction materials and spoil rather than by road, which is compliant with Cremorne Wharf's safeguarded wharf designation status and reduce traffic impacts: This issue is addressed above and in the Traffic and transportation subsection.
 - d. The site is a designated waste management site and safeguarded wharf and these land uses should not be compromised: This issue is addressed in the Land use including open space, green infrastructure and green belt subsection.
 - e. The design should respect the listed Lots Road Pumping Station and the setting of the Thames Conservation Area: This issue is addressed in the Good design, Landscape and visual and Historic environment subsections.
 - f. The Thames Path should be reopened up for public access: This issue is addressed in the Good design and Land use subsections.
- L.4.79 Following consultation and pre-application discussions, the Royal Borough of Kensington and Chelsea and English Heritage are supportive of the use of the Cremorne Wharf Depot site for the project and the illustrative design, subject to their involvement in the development of the detailed designs in the future.

L.5 Site-specific planning considerations

L.5.1 This section provides an analysis of the key planning considerations associated with the proposed works at Cremorne Wharf Depot, considering the issues and factors identified in the NPS and other issues relevant to the site including, particularly, those arising from consultation, as identified in para. L.4.78. The design response to each of these issues was informed by extensive consultation with stakeholders, as set out in the *Consultation Report*, which accompanies the application, and detailed below.

Meeting the need

L.5.2 The proposed works at Cremorne Wharf Depot would be successful in meeting the specific need to intercept the Lots Road Pumping Station CSO and would make an important contribution to the wider need for the project identified in the NPS.

L.5.3 Currently in an average year, the Lots Road Pumping Station CSO discharges approximately 1,140,000m³ of untreated sewage into the tidal Thames in front of Cremorne Wharf Depot. The CSO discharges approximately 38 times a year and releases approximately 288 tonnes of sewage derived litter.

L.5.4 The Environment Agency identified the Lots Road Pumping Station CSO as a CSO that needs to be controlled. The CSO discharges have multiple impacts on water quality in this location, including a localised effect of rapidly dropping dissolved oxygen levels, the release of pollutants and the discharge of sewage derived litter and effluent.

L.5.5 It is predicted that the CSO discharges will continue to worsen both in terms of volume frequency and content. By the time the proposed works at Cremorne Wharf Depot become operational the CSO is predicted to discharge in an average year approximately 1,260,000m³ of untreated sewage, over 42 discharge events releasing 318 tonnes of sewage derived litter (*Environmental Statement*, Vol 12, Section 14).

L.5.6 Modelling suggests that the current annual discharges of untreated sewage would be reduced to 92,000m³, a reduction of 1,048,000m³ from the current level, and from 38 spills a year to a predicted level of four spills per year with the project in operation. This represents a reduction of 92 per cent which would have a beneficial effect on water quality. The tonnage of sewage derived litter discharged by the CSO is expected to be reduced by approximately 288 tonnes to 22 tonnes per year.

Good design

Managing construction impacts

L.5.7 As the designs for this site evolved, Thames Water was able to improve access and reduce the impacts of construction. The site is now proposed to be accessed through the depot site and by the river which has completely removed the need to use Cremorne Gardens for construction access which was the main objection to the proposals at phase one consultation.

- L.5.8 Additionally there would be no need for the temporary cofferdam required for Cremorne Wharf Foreshore, which could have had impacts on landscape and views and aquatic ecology.
- L.5.9 The *CoCP* seeks to reduce the impacts from construction on the surrounding area and it includes the following site-specific design measures in Part B:
- a. The hoarding would be 3.6m at this site rather than 2.6m and would incorporate suitable art work on the public facing sections.
 - b. A one-way system would operate in and out of the site. The access would be from the east end of the site and egress from the west.
- L.5.10 Other changes in response to consultation feedback included the increased use of barges during construction. 90 per cent of the shaft excavated and 'other' excavated material (export) would be transported by barge and all other material by road. This is consistent with its designation as a safeguarded wharf.
- Operational design**
- L.5.11 The design presented at phase two consultation showed two main ventilation columns up to 6m high on the western boundary of the site, a smaller diameter ventilation column up to 6m high in the north east corner of the site and electrical and control equipment located within Lots Road Pumping Station. The proposals included illustrative images for an improved replacement depot building of a similar height and footprint as the existing, to ensure the site could remain a functioning waste and wharf site. The designs also included a corridor along the full extent of the river's edge so as not to prejudice future provision of the Thames Path.
- L.5.12 Further design developments post phase two involved moving the footprint of the illustrative replacement depot building back from the southwestern corner of the listed Lots Road Pumping Station by approximately 2m to enhance its setting. Further detail of the design developments is provided below and in the *Design and Access Statement* (Vol 14), which accompanies the application.
- L.5.13 The amount, layout and scale of the proposed structures are primarily dictated by the functional requirements. At this site, the key functional considerations are to transfer flows from the Lots Road Pumping Station CSO into the main tunnel. The project works must also successfully integrate with the existing Thames Water below-ground infrastructure, the adjacent listed pumping station and future occupants of the site.
- L.5.14 Early site analysis and subsequent engagement identified that it was important for the design to respond to the following opportunities and constraints. The site-specific opportunities included:
- a. Use an available brownfield site.
 - b. Improve the relationship between the site and its historic surroundings.
 - c. Extend the Thames Path to create a continuous riverside route.
 - d. Make use of the listed pumping station in accordance with its historic use.

- L.5.15 The site-specific design constraints included:
- a. The adjacent Grade II listed Lots Road Pumping Station must continue to operate.
 - b. The site incorporates existing Thames Water infrastructure.
 - c. The site is enclosed by buildings, fences, the river wall and the River Thames and access is limited.
 - d. It is designated as a waste management site and a safeguarded wharf and it needs to be possible to reinstate it to similar uses following construction.
 - e. There is uncertainty regarding the future use of the site.
 - f. The site is in close proximity to sensitive receptors including residents, businesses, a secondary school (Chelsea Academy) and the Cremorne Riverside Activity Centre.
 - g. Environment Agency policy seeks to minimise encroachment into the river.
 - h. Various planning policies seek a continuous riverside Thames Path.
- L.5.16 The design of the proposals for the site evolved through phase two consultation and formal engagement with key stakeholders including Design Council CABE, the Royal Borough of Kensington and Chelsea, and English Heritage. Details of the consultation process for this site are reported in the *Consultation Report* and the evolution of the design is explained in further detail in the *Design and Access Statement*. The main design objectives which evolved from the analysis of opportunities and constraints, and in response to stakeholder consultations were:
- a. Retain the flexibility to arrange the functional components on the site while avoiding compromising the potential use of the site as a safeguarded wharf/council depot.
 - b. Enable the provision of a riverside walkway across the site in the future (by others).
 - c. Respect the historic character and fabric of the listed pumping station building.

Retaining flexibility at Cremorne Wharf Depot

- L.5.17 The Royal Borough of Kensington and Chelsea is due to enter into a collaboration agreement with Thames Water, through which the temporary use of the site for construction and the permanent use for project structures and maintenance access would be secured. Due to the uncertainty regarding the future use of the site and the need for the proposed reinstatement of the depot building, Thames Water has agreed with the local authority to develop an illustrative proposal for its replacement if this is necessary on completion of the project.
- L.5.18 In the event that a warehouse-style building is required to replace the existing depot building, the illustrative approach to the design is consistent with the designs presented at phase two consultation and complies with the agreed design principles for the site and the Site works parameter

plan. Design principle CREWD.01 states that the depot building shall be reinstated unless otherwise agreed with the landowner.

L.5.19 There are wide parameters for the above-ground structures. This is to provide the required flexibility to future proof the project infrastructure and provide maintenance access without compromising the site for future land uses, such as designated waste or safeguarded wharf use, potentially including the local authority's aspiration for a mixed-use development.

L.5.20 The Design Council CABE recommended defining a palette of simple, robust materials for the proposed structures and the streetscape to suit the riverside context. A palette of materials is illustrated in the *Design and Access Statement* and the detailed design of the above-ground structures would be approved by the Royal Borough of Kensington and Chelsea subject to a site-specific Requirement.

L.5.21 The design life of the major civil engineering components of the project is 120 years. The details of the external finishes of the ventilation columns are not specified in the application and would be submitted for the subsequent approval of the local authority. These details must be in accordance with the design principles, which require materials to be high quality and long lasting. The project has been designed to be durable and resilient to change.

Enable the provision of a riverside walkway

L.5.22 During consultation, the Royal Borough of Kensington and Chelsea and other respondents, including the Greater London Authority, expressed a desire for the Thames Path to be extended to connect the future Lots Road Power Station development to Chelsea Wharf. The Design Council CABE also supported the proposal, considering it would support the riverside community and recreational uses such as the Cremorne Riverside Activity Centre and Cremorne Gardens.

L.5.23 It is proposed to leave a 4m clear strip along the river frontage for the future provision of the Thames Path by others, having regard to *Core Strategy* Policy CT1, which seeks to ensure that new developments adjacent the riverside improve opportunities for river transport and freight, and access to the river and riverside for recreation, walking and cycling. This would be secured by design principle CREWD 13. The Royal Borough of Kensington and Chelsea responded at Section 48 pre-application publicity stating that the set-back to allow for a new riverside walk is especially welcome.

L.5.24 In addition, the illustrative proposals suggest positioning the two main columns which would feature the project's 'signature' design near the southern corner, where they could contribute to the river scene, as suggested in the Royal Borough of Kensington and Chelsea's phase two consultation response.

Respect the historic character and fabric of the listed pumping station building

L.5.25 It is proposed to install electrical and control equipment inside the pumping station building to minimise the footprint of the new development and

make efficient use of the site. A location was selected within the building where there is an absence of glazed wall tiles in the area to preserve the fabric of the listed building. Ducting is required from the works in the depot to the selected location and would be installed below ground to avoid any visual impact on the external appearance of the building. It is proposed to make the connection via the route of a redundant gas main that runs into the building below the northeastern elevation, to minimise the impact on the fabric of the building. The provision of equipment within the building is in keeping with its historic use as a pumping station.

L.5.26 In response to phase two consultation feedback from the Royal Borough of Kensington and Chelsea and consistent with *Core Strategy* Policy CL4, which seeks to enhance the setting of listed buildings, the footprint of the replacement depot building was set back from the southwestern corner of the pumping station by approximately 2m. The council acknowledged in the Section 48 response that the revised footprint and similar height of the illustrative replacement depot would maintain the setting of the adjacent listed building.

L.5.27 An existing ventilation column clad in cement runs up the southeastern corner of the pumping station. It is one of the later additions to the building and is generally out of character with the original red brick work. It is proposed that the column be used to ventilate the CSO interception chamber, making efficient use of an existing resource and eliminating the need for an additional ventilation column within the site.

L.5.28 At the request of the Royal Borough of Kensington and Chelsea, Thames Water proposes to improve the appearance of the ventilation structure. Given that modifications to the structure are required, it was agreed with the local authority to develop a treatment that would be more sympathetic to the original building at a later date. This may involve recladding the column with brickwork, or replacing it with a cast iron pipe. This commitment is captured in design principle CREWD.09.

Conclusions

L.5.29 The illustrative design at Cremorne Wharf Depot evolved throughout the development of the project, through the iterative consideration of alternatives and from feedback received during the consultation periods. These are detailed in the *Design and Access Statement* (Section 14).

L.5.30 Due to the uncertainty about the future use and need for the site, the detailed design would be agreed with the Royal Borough of Kensington and Chelsea, therefore flexibility is embedded into the proposed works. The illustrative design of the hard landscaping and materials palette demonstrates that alternative designs could work within the defined parameters, subject to the design meeting relevant technical standards.

L.5.31 The illustrative design supports the use as a safeguarded and operational wharf. It is adaptable and durable and the proportion and dimensions respond positively to the surrounding context and character. It also seeks to protect and enhance the historic environment and assets and respect the quality of the buildings nearby, namely the pumping station and power station.

- L.5.32 The illustrative design at Cremorne Wharf Depot demonstrates an appropriate functional design, which would be attractive, usable, durable and adaptable, meeting the criteria of NPS para. 3.5.1.

Water resources and flood risk

- L.5.33 There are no designations relevant to groundwater covering the site and there are no licensed or known unlicensed groundwater abstractions from the River Terrace Deposits within 1km of Cremorne Wharf Depot. The closest defined Environment Agency Source Protection Zone for a Chalk source is approximately 2km to the east of the site.
- L.5.34 The River Terrace Deposits (the upper aquifer) are the only possible sensitive receptor to ground water effects. The Royal Borough of Kensington and Chelsea raised concerns at phase two consultation and Section 48 publicity regarding groundwater contamination, flooding and mitigation for any adverse construction effects on groundwater resources. These issues were investigated accordingly. The *Environmental Statement* (Vol 12, Section 13) identifies that the construction of the CSO drop shaft might create a pathway for groundwater movement. However, the engineering design includes a sheet pile wall and secant piles around the shaft and vacuum ejector pumps to dispose of water appropriately and protect the upper aquifer.
- L.5.35 General measures to protect water resources during construction are detailed in Section 8 of the *CoCP Part A* and referred to in Section 6 of the *Planning Statement*. The *CoCP Part A* covers activities that are subject to pollution control and makes reference to good practice.
- L.5.36 After taking into account the measures incorporated into the design and *CoCP*, including adherence to good pollution prevention practice, there would be no adverse impacts on surface water resources, river flows and groundwater resources.
- L.5.37 Once operational, modelling suggest that the current annual discharges of untreated sewage from the Lots Road Pumping Station CSO would be reduced from 38 discharge events (or 42 in the 2020s) a year to a predicted level of four events per year with the project in operation. Therefore the project would have a beneficial effect on water quality in the tidal Thames and contribute to the protection and enhancement of biodiversity of the river.
- L.5.38 These reductions would have a substantial beneficial effect on water quality and are described in more detail in the Meeting the need subsection above.
- L.5.39 The site therefore meets the decision making criteria set out in the NPS as no adverse effects are expected on water quality or resources and the Environment Agency has no outstanding concerns.
- L.5.40 The site is located within the 'high probability' flood zone (Flood Zone 3a); however it is protected by flood defences aligned along the edge of the site. The current level of protection afforded by the defences would be maintained on the site throughout construction and operation and no changes to flood risk are anticipated.

- L.5.41 A Flood Risk Assessment including the sequential and exception test undertaken in accordance with NPS Section 4.4 is included within the *Environmental Statement* (Vol 3, Section 15; Vol 12, Section 15). This shows that the proposed development would be appropriate for the area as flood risk to the development would remain unchanged. Flood risk would be managed through appropriate design measures and the development would not lead to an increase in flood risk on the surrounding areas. Therefore, no significant flood risk effects are likely.
- L.5.42 In accordance with the *CoCP* (Section 8) all site drainage during construction would be drained and discharged to mains foul or combined sewers and where this is not practicable, the site would be drained such that accumulating surface water would be directed to holding or settling tanks, separators and other measures prior to discharge to the combined or surface water drains. Foul drainage from the site welfare facilities would be connected to the mains foul or combined sewer. This design measure would help manage the risk from this source during construction but would not reduce the level of risk associated with this flood source.
- L.5.43 The development is at residual risk of tidal flooding in the event of a breach in the local flood defence wall along the edge of the tidal Thames or overtopping of the defence wall as a result of a failure of the Thames Barrier. In the very unlikely event of a mechanical failure at the pumping station, there is potential for sewage to back up within the system and surcharge through manholes and gullies. The consequence of a breach or failure of flood defences or a failure of the pumping station, would not compromise the long term operational function of the main tunnel and therefore no additional measures above those outlined in the *CoCP* are proposed.
- L.5.44 Flood risk from all sources has been managed as far as possible through design and the measures incorporated in the *CoCP*, so the criteria in NPS para. 4.4.10 would be satisfied. No significant flood effects are likely from the proposed development.

Air quality, emissions, dust and odour

- L.5.45 The site is located within the RBKC Air Quality Management Area for NO₂ and PM₁₀ and local monitoring data indicates that there are currently exceedences of the air quality standards in the vicinity of the site. In addition, the site is close to the boundary with the London Borough of Hammersmith and Fulham whose Air Quality Management Area covers the whole of the borough.
- L.5.46 The nearest receptors which may be sensitive to changes in air quality are occupiers of nearby residential dwellings at Chelsea Wharf and on Lots Road as well as the future occupiers of the new Lots Road Power Station development. Other sensitive uses in the wider area are office and commercial premises, Chelsea Academy, users of Cremorne Gardens, Cremorne Riverside Activity Centre and the river and Thames Path.
- L.5.47 Through the measures included within the *CoCP* all reasonable steps would be taken to minimise detrimental impacts on amenity resulting from air quality, emissions and dust as required by the NPS (para. 4.12.10). As

a result of these measures it is reported in the *Environmental Statement* (Vol 12, Section 4) that effects from dust and emissions during construction and within 20m of the site would not have any significant effects and could be sufficiently managed. Beyond the 20m threshold expected effects are predicted to be negligible.

- L.5.48 The *Air Management Plan* for the project is designed to ensure that odours do not arise from the operation of the scheme at any of the proposed site locations. Air would be released from the ventilation columns for approximately 15 hours in a typical year, of which all air would be treated having passed through the local air treatment chamber containing carbon filters.
- L.5.49 The project-wide air management plan is designed to ensure that the air in the tunnels is kept fresh, that pressure does not build up inside the tunnels and that when air is released it is treated. This would be achieved by a combination of forced or active ventilation and treatment and passive air treatment. In addition, at most sites there are ventilation structures which would allow air to enter and leave the tunnel system.
- L.5.50 When the tunnels are empty, clean air would be drawn inside to keep the air fresh. This means that odours would not build up while the tunnels are empty. As the tunnels fill, air that is released from the tunnels would pass through carbon filters. These filters clean the air and remove any odours before it is released.
- L.5.51 At passive ventilation sites a passive carbon filter would be installed within a below-ground chamber. During a typical year this treats all the air displaced from the particular shaft which would occur only when the shaft is drowned by the rising wastewater in the tunnel. During infrequent, extreme storm events (about once in 15 years), the air that is pushed out of the shaft could exceed the capacity of the passive filter and would be released untreated through a pressure relief structure to prevent damage to the passive filter. For 100 per cent of the time during a typical year, all air released would be treated, which means that all regulatory requirements would be met and there would be no nuisance odours or loss of amenity due to odours.
- L.5.52 The construction and operational effects with regard to air quality and odour would be consistent with the NPS policy objectives to minimise detrimental impacts on amenity (paras. 4.12.3, 4.11.4 and 4.11.5). Appropriate measures are proposed to ensure that the proposals would not lead to any or substantial changes in, air quality, emissions, dust or odour or a significant loss of amenity during construction or operation.

Biodiversity and geological conservation

- L.5.53 The site is not designated for its geology or geomorphological importance, and there are no internationally (Special Protection Areas, Ramsar sites) or nationally designated ecological sites (Sites of Special Scientific Interest, Marine Conservation Zones) in the vicinity of the site.
- L.5.54 The foreshore of the Thames is designated the River Thames (including Chelsea Creek) Site of Nature Conservation Importance (Metropolitan). The Chelsea Creek discharges into the Thames close to the site and there

is a small area of mudflat made up of exposed silt and mud. A survey was undertaken at the site to understand the aquatic ecology present within the river at this location. A diverse assemblage of fish species occurs in the river at this location. Invertebrate species are limited to those that are pollution-tolerant.

- L.5.55 Through the site selection process, the brownfield Cremorne Wharf Depot site emerged as the preferred option over Cremorne Wharf Foreshore. One of the benefits of using the depot site was that the construction works could be contained within the depot site except for the refurbishment of an existing campshed to allow river access. This removed the need for a cofferdam in the foreshore and therefore significantly reduced the possible impacts on aquatic ecology at this site.
- L.5.56 Some impacts on aquatic ecology could result from the construction works to refurbish the existing campshed and the use of barges to transport materials but these would be managed in accordance with the *CoCP* and as a result it is anticipated that during construction there would be no adverse effects on fish, habitats, mammals and invertebrates.
- L.5.57 The campshed would remain following completion of the construction stage due to the sites designation as a safeguarded wharf but the impacts on the subtidal and intertidal habitats would be minimal due to the temporary nature of the refurbishment work. Additionally, the proposals for the campshed would represent an upgrade of an existing facility which is compatible with the safeguarded wharf status of the site.
- L.5.58 With regards to terrestrial ecology, the site currently comprises buildings and hardstanding, a single tree to the east of the depot building on the river side (which is to be removed) and the river wall. A bat roost was identified in Lots Road Pumping Station. Site-specific construction measures during construction are embedded in the *CoCP* Part B (Section 11) which states that if works that could disturb identified roost were unavoidable, a licence from Natural England may be required.
- L.5.59 The tree would not be replaced due to the uncertainty over the sites future use and the need to not compromise the safeguarded wharf status or another suitable development. The tree does not provide high quality habitat and the *Environmental Statement* (Vol 12, Section 6) assessed its removal would not have an adverse effect on terrestrial ecology.
- L.5.60 Lighting which may be required during construction would be controlled through measures included in the *CoCP* to avoid disturbance to local aquatic and terrestrial ecology, including bats.
- L.5.61 It is anticipated that operational activity would be limited to occasional maintenance works, which are considered unlikely to have significant effects on terrestrial ecology. Design principle (CREWD.10) states that bird and bat boxes would be installed on-site post construction subject to operational practicability and the landowner's approval.
- L.5.62 It is important to note that by intercepting the CSO, the works would reduce dissolved oxygen related fish mortalities and improve the quality of the foraging habitat for fish, constituting a significant beneficial effect on aquatic ecology when the project is operational.

- L.5.63 In accordance with the NPS (paras. 4.5.6 and 4.5.17), the proposed development sought to take advantage of opportunities to conserve and enhance biodiversity as part of the proposals in this location and to manage effects on the environment, through the mitigation and compensation measures included in the *CoCP* and the design principles.

Landscape and visual impacts

- L.5.64 Cremorne Wharf Depot is of a modern industrial nature set within an interesting and historical location on the banks of the tidal Thames. The site is directly adjacent to the Thames Conservation Area and the Grade II listed Lots Road Pumping Station. The NPS (para. 4.7.6) states that the effects on landscape depend on the existing character of the local landscape, its current quality, how highly it is valued and its capacity to accommodate change. The surrounding townscape is a mixture of industrial and residential premises including some newly built developments along the riverfront. The townscape of the actual site is considered to be in a poor condition.
- L.5.65 The landscape and visual assessment for the site took account of local Character Appraisals and Management Plans for the Thames Conservation Area and the Chelsea and Battersea Reach Townscape Character Area produced by the Royal Borough of Kensington and Chelsea, in accordance with the NPS (4.7.2) and view-points in the area were assessed.
- L.5.66 During construction, it is likely that the scale and intensity of activity would have a temporary impact on the on the adjacent River Thames – Chelsea and Battersea Reach character area and its tranquillity. The construction activity would also be visible from the pier of the Cremorne Riverside Activity Centre, however, as the site is a safeguarded wharf riverside activity can be expected and the proposed construction works are not out of context along this stretch of the riverside.
- L.5.67 No adverse effects are anticipated from the residential viewpoints assessed; however, high quality hoarding, incorporating suitable art work is identified in the *CoCP* Part B (Part 4) for this site.
- L.5.68 Although construction activities would be visible for a temporary period, the NPS (para. 1.4.4) recognises that NSIPs are likely to take place in mature urban environments and result in adverse townscape and visual effects with many possible receptors. Large scale construction works at Cremorne Wharf Depot should be viewed in this context and would be experienced against the backdrop of any planned major developments of the site and the surrounding area.
- L.5.69 Due to the limited changes in the operation of the site, comprising illustrative new structures within the safeguarded wharf and a replacement depot building within approximately the same footprint as the existing structure, there would be no landscape and visual effects from operation. The use of the depot rather than the foreshore site ensures this is kept to a minimum as there would be no new foreshore structure.

- L.5.70 The illustrative design for the site evolved through public consultation and stakeholder engagement and seeks to minimise effects on townscape and improve the setting of the Grade II listed Lots Road Pumping Station.
- L.5.71 The design principles and parameters are secured through a site-specific Requirement, which requires the detailed design of above-ground structures, including location, elevations and sample materials, to be in accordance with the design principles and Site works parameter plan and submitted to the local authority for approval. For example, CREWD.02 states that the footprint, scale and design of the reinstated depot facilities shall respect the historic setting of the listed pumping station and CREWD.04 explains that that the signature ventilation column would be located as close to the river as possible.
- L.5.72 The construction works would be a prominent, but temporary, feature of the local townscape and views. Through considered construction layout and design and the *CoCP*, the effects of construction would be minimised in accordance with the NPS. Once construction is complete, Thames Water's improvements to the quality of the site would benefit townscape and visual amenity. The proposals are therefore consistent with the approach required in NPS Section 4.7.

Land use including open space, green infrastructure and green belt

- L.5.73 The impact of the proposals on land uses and designations (as identified in the Royal Borough of Kensington and Chelsea's *Core Strategy* and saved *Unitary Development Plan* policies) was a key consideration in the project's site selection process and on-going design development. The Land use plan is located in the Annex L.
- L.5.74 The use of the brownfield site at Cremorne Wharf Depot would not have temporary or permanent impacts upon Cremorne Gardens or any other open space. The NPS (para. 4.8.3) seeks the re-use of previously developed land where possible.
- L.5.75 Cremorne Wharf is safeguarded by ministerial direction (currently being reviewed by the Greater London Authority). The *London Plan* (Policy 7.26) states that the Mayor seeks to increase the use of the Blue Ribbon Network to transport freight and development proposals should protect existing facilities for that, in particular safeguarded wharves should only be used for waterborne freight-handling use. Temporary uses should only be allowed where they do not preclude the wharf being reused for waterborne freight-handling uses, and adjacent development should be designed to minimise the potential for conflicts of use and disturbance.
- L.5.76 In relation to waste, *Core Strategy* Policy CE3 states that the existing waste management sites, along with Cremorne Wharf, will be safeguarded and their use for waste management, water transport and cargo-handling purposes will be maximised. *Core Strategy* Policy CE2 requires specifically that the project proposals do not compromise the future of the Cremorne Wharf safeguarded wharf.

- L.5.77 At Cremorne Wharf Depot, the illustrative design proposed the widest limits of deviation within the site parameters for all the project sites. This is to ensure the flexibility required to ensure that the designated waste management site and safeguarded wharf are not compromised. Additionally, the parameters take into account the Royal Borough of Kensington and Chelsea's current planning application for a mixed-use development
- L.5.78 The Royal Borough of Kensington and Chelsea stated in its *Cremorne Wharf Frequently Asked Questions* document (March 2012)²:
"We are aware that Cremorne Wharf is a protected waste management site, however the West London Waste Riverside Authority [Western Riverside Waste Authority] has now declared the use of this site surplus to requirements, and as such the future use of the site needs to be planned for".
- L.5.79 During construction, as discussed below in the Noise and vibration subsection, the proposed works would have noise effects on some future residential occupiers of the future Lots Road Power Station development, along with other properties on Lots Road.
- L.5.80 The Thames Path National Trail runs along the south side of Lots Road and appropriate measures were identified to mitigate adverse effects during construction, complying with the guidance in the NPS (para. 4.8.24). The CoCP Part B identifies that the southern footway (Thames Path) on Lots Road would only be closed to construct the crossovers for site access and would otherwise remain open and unobstructed.
- L.5.81 The illustrative location of the permanent structures would enable the continued use of the site as a council depot or wharf in accordance with the safeguarding direction. There is flexibility to locate the proposed ventilation column towards the riverside. The replacement depot details would be submitted to and approved by the relevant consenting body and provision would be allowed for the Thames Path to be re-routed to the waterside through the site, should this be appropriate to the future use. The use and character of the site would not be altered and it would remain compatible with a future wharf use.
- L.5.82 Cremorne Wharf Depot is located with the Royal Borough of Kensington and Chelsea's Lots Road Employment Zone. As the illustrative design proposes to reinstate the depot use would be compatible with the safeguarded wharf status, they would not impact on the employment zone. There is no proposed change in land use and the site is already the location of Thames Water infrastructure.
- L.5.83 The proposed works would not prevent the beneficial continuation of surrounding land uses, either during construction or operation. Thames Water will continue to engage with the Royal Borough of Kensington and Chelsea and seek to accommodate the borough's aspirations for the site through the illustrative and flexible design.

² http://www.rbkc.gov.uk/pdf/cremorne_faq.pdf

Noise and vibration

- L.5.84 The existing noise environment in the vicinity of the site is dominated by road traffic noise. There would have been noise associated with the former waste management site on the safeguarded wharf site, but that use has now ceased. The nearest locations to the site which would be sensitive to noise and vibration are residential dwellings located on Lots Road, including Station House and Chelsea Wharf Apartments.
- L.5.85 The NPS recognises that NSIPs are likely to take place in mature urban environments, and in the short term, to lead to noise disturbance during construction (para. 1.4.4). In accordance with the NPS para. 4.9.10, a series of measures detailed in the *CoCP* is embedded within the project design to seek to minimise adverse impacts from noise. The measures include operating in accordance with best practice, selection of the most quiet, cost effective plant available, and optimising plant layout to minimise noise emissions.
- L.5.86 The *CoCP* Part B sets out further site-specific requirements for real time monitoring of noise, 3.6m hoarding (rather than the standard 2.4m), and the gates to the site shall remain closed as far as reasonably practical and be made solid with overlapping sections and minimal gaps at bottom and edges. Barge loading and movements would be restricted to 8am to 6pm. This would be extended to 10pm subject to agreement of the Royal Borough of Kensington and Chelsea. However, no further practicable noise mitigation can be adopted above those methods identified in the *CoCP*.
- L.5.87 The *Environmental Statement* (Vol 12, Section 9) states that adverse impacts from construction activities would likely remain at Station House on Lots Road and at the proposed mid- and high-rise residential buildings overlooking the site as part of the Lots Road Power Station development. Residents of these properties may be eligible to apply for compensation through the Thames Tideway Tunnel compensation programme.
- L.5.88 The NPS advises that in situations where other forms of noise mitigation have been exhausted, noise insulation to dwellings or, in extreme cases, compulsory purchase of affected properties may be considered in order to gain consent for what might otherwise be an unacceptable development. In the case of the project, no extreme cases were identified at the date of the submission of the application for development consent which would necessitate the compulsory acquisition of properties due to significant adverse effects. The Thames Tideway Tunnel noise insulation and temporary re-housing policy and the Thames Tideway Tunnel project compensation programme (included within Schedule 2 to the *Statement of Reasons*, which accompanies the application) were developed to offset the effects arising from construction related disturbance. The noise insulation and temporary re-housing policy would be implemented where predicted or measured construction noise levels exceed published trigger levels. The compensation programme was established to address claims of exceptional hardship or disturbance. In relation to construction, eligible works would be directed towards mitigation or other required actions to reasonably reduce disturbance from noise or construction activities. The

noise levels at Station House, and Lots Road Power Station mid-rise building and high rise tower do not exceed the thresholds for noise insulation provided by the Thames Tideway Tunnel noise insulation and temporary re-housing policy.

- L.5.89 Given the nature of the works proposed, no further practicable noise mitigation within the construction site was identified beyond those methods identified in the *CoCP* and the predicted adverse impacts from noise are expected to remain. Thames Water has employed all possible measures to mitigate the effects of noise at the site. The project demonstrates good design and mitigates and minimises adverse impacts on health and quality of life in accordance with NPS paras. 4.9.8 and 4.9.9. Some residual noise effects would remain; however these would be temporary only, during the most intense periods of construction activity.

Historic environment

- L.5.90 The site is located on industrial land on the north bank of the River Thames and comprises the Thames Water Lots Road Pumping Station, which is Grade II listed and the Thames Conservation Area is adjacent to the east. There are no other nationally designated heritage assets within the immediate vicinity of the site.
- L.5.91 The Lots Road Power Station and the Station House are both undesignated assets adjacent to the site which have some local interest and a visual relationship with the Pumping Station. Likewise the 19th century gates to Cremorne Gardens are of local interest and have a similar relationship, though at a greater distance. They would not be negatively affected by the proposed works.
- L.5.92 The NPS recognises that NSIPs are likely to take place in mature urban environments and to have adverse effects on archaeology and cultural heritage (para. 1.4.4). Some possible effects from construction on buried heritage assets would be identified and would be mitigated through a preliminary site-based field evaluation followed by targeted archaeological excavation or a watching brief if required. The works would be covered by the *Overarching Archaeological Written Scheme of Investigation*, which accompanies the application, subject to a Requirement.
- L.5.93 Ground movement was identified as a possible impact to the Grade II listed Lots Road Pumping Station. The building would likely experience some ground settlement as a result of construction works, which would have a moderate negative effect. Towards the rear of the building a maximum of 15mm of settlement is predicted, reducing to 1mm of settlement at the front, which is the more significant and sensitive part of the building. In the area of greatest settlement the damage assessment identifies the risk of cracks of up to 10mm due to settlement, concentrated on existing joints within the walls where the foundations differ. The building would be monitored during the works in accordance with the *CoCP* and any damage to significant features and finishes would be repaired using standard conservation methods to achieve like-for like-repair following the conclusion of the works, which is considered to reduce the effects on the listed building (Clause 21 of the application). The Royal Borough of

Kensington and Chelsea was involved in meetings regarding settlement and Lots Road Pumping Station.

- L.5.94 Works affecting the listed Lots Road Pumping Station would be kept to a minimum and in response to comments by Royal Borough of Kensington and Chelsea, the replacement depot building which would be further set back from the southwestern corner of the listed building in order to allow the elevation of the pumping station to be appreciated (design principle CREWD.02) and the existing vertical concrete ventilation column on the southeastern corner of the Pumping Station, would be improved or replaced (design principle CREWD.09). The provision of equipment within the building is in keeping with its historic use.
- L.5.95 Details of the works to the listed pumping station would be submitted to the Royal Borough of Kensington and Chelsea subject to a Requirement.
- L.5.96 Following completion of the works, the appearance of the site from the river and its role in heritage views would be enhanced, largely due to the improved design of the proposed shed, and there would consequently be a beneficial effect on the setting of the Lots Road Pumping Station, Lots Road Power Station, Chelsea Wharf and the Thames Conservation Area.
- L.5.97 The assessment of impact on heritage assets demonstrates that the development meets the criteria set by the NPS and seeks to minimise any impacts on their significance (paras. 4.10.11 and 4.10.14), minimise impacts on their settings (para. 4.10.17), mitigate any negative impacts (para. 4.10.18), and ensure that the proposals are of a high design quality (Section 3.5).

Light

- L.5.98 The *Daylight/Sunlight Assessment*, which accompanies the application, assessed the potential impact that project structures would have on the sunlight and daylight amenity of the properties surrounding the proposed sites. No impact during construction is anticipated and once the site is operational the proposed illustrative replacement depot building is no bigger than the existing building and would not have impacts on sunlight or daylight.
- L.5.99 For practicality and safety reasons tunnel construction needs to take place over extended periods of time, including working on a 24-hour, seven days a week basis. A short period (approximately six months) of below ground 24 hour working would be required at this site. During this period, the working would mainly take place below ground but artificial lighting would be required for the supporting activity at ground level for extended periods during the tunnel construction and secondary lining phases. Measures are included within the *CoCP* to ensure that all reasonable steps would be taken to minimise detrimental impact on amenity resulting from artificial light. For example, site lighting during construction would be capped and directional to ensure minimal light spill and lighting only used when necessary and as such there would be no unreasonable effect on residential properties during the construction period.
- L.5.100 No assessment of lighting effects on night time character was carried out at this site during construction on the basis that the site would generally

only be lit in the early evening during winter. There would be minimal spill from site lighting into the wider area due to the measures set out in the *CoCP*, and the surrounding area is lit in the early evening by street lighting and by light spill from surrounding buildings.

L.5.101 No operational lighting that would affect residential amenity or ecology is proposed at Cremorne Wharf Depot as a result of the project works. In the event a new depot building is constructed, lighting would only be provided for operational health and safety reasons (design principle CREWD.07).

L.5.102 In line with the criteria of NPS para. 4.12.7, there would be no light pollution effects on local amenity and nature conservation arising from construction or operation of the site.

Traffic and transport

L.5.103 The site has moderate public transport accessibility and it is located within proximity of a number of local bus service routes and the London Overground station Imperial Wharf is approximately 640m to the southwest of the site. The closest London Underground station is Fulham Broadway, approximately 1.4km to the west.

L.5.104 The *Environmental Statement* (Vol 12, Section 12) and *Transport Assessment* (Vol 10) provide an assessment of the likely significant transport effects at this site in regards to our proposals during both construction and operational phases. The *Transport Strategy* sets out the overarching transport strategy for the project.

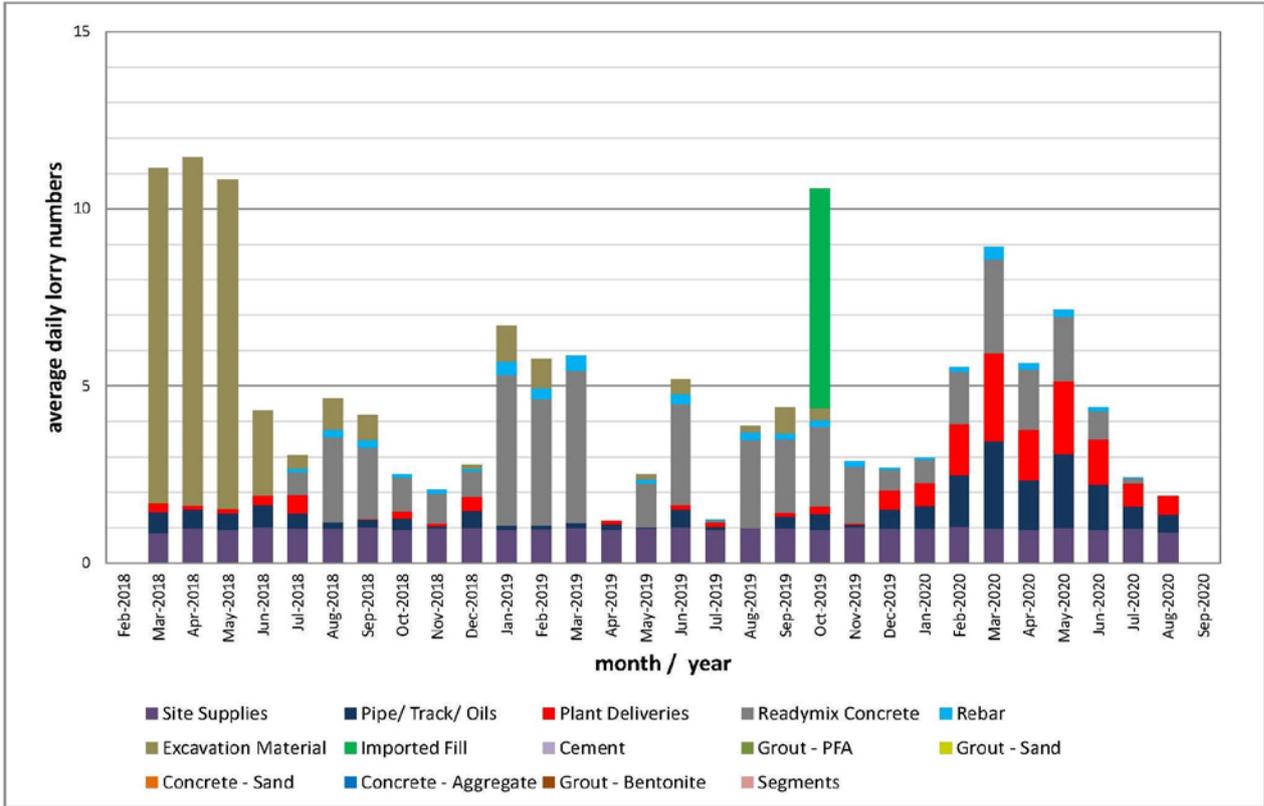
L.5.105 A site-specific construction workforce travel plan would be submitted to the local authority for approval before works at Cremorne Wharf Depot commence, subject to a Requirement. There would be no parking provided in the site boundary for workers and it is highly unlikely that any workers would travel to the site by car (*Transport Assessment*, Section 10).

L.5.106 A condition of the consented use as a waste management site is to have no more than 150 HGV movements a day. The project would require significantly less than that currently approved during construction and operation.

L.5.107 During construction typical vehicle movements would take place in accordance with the Royal Borough of Kensington and Chelsea normal working hours on weekdays between 8am to 6.30pm and on Saturdays from 8am to 1.30pm. Mobilisation is permitted from 7.30am to 8am for staff arrival and briefing only, unless agreed with the local authority. In exceptional circumstances HGV and abnormal load movements could occur up to 10pm for large concrete pours and later at night on agreement with the borough.

L.5.108 The peak construction traffic would occur during Site Year 1 when there would be 24 movements per day (12 two-way vehicle trips). Lorry movements are shown graphically in Figure L.7 overleaf.

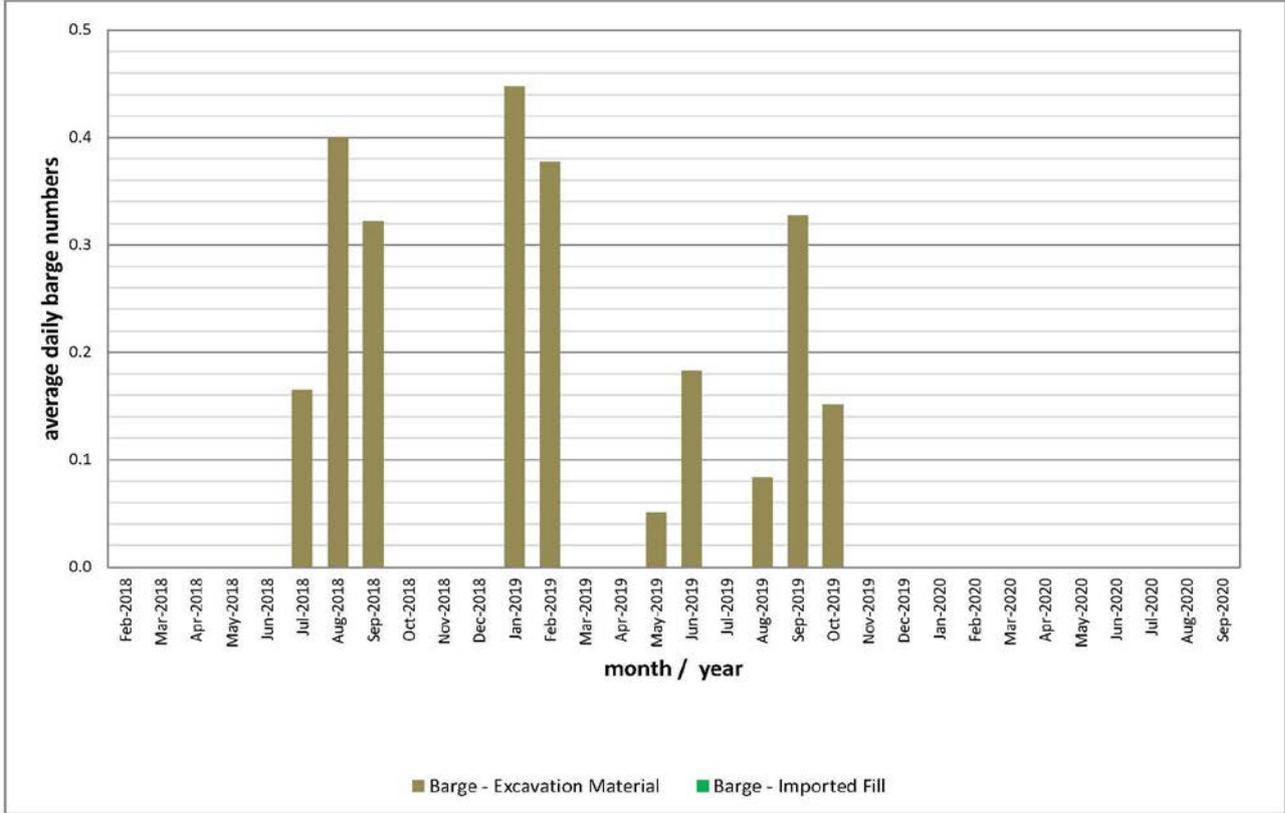
Figure L.7 Cremorne Wharf Depot: Lorry movements



L.5.109 During construction 90 per cent of the shaft excavated and ‘other’ excavated material (export) would be transported by barge and all other material by road. This is in accordance with NPS para. 4.13.10 which seeks water-borne transport over road transport where cost-effective.

L.5.110 The peak number of barge movements is within Site Year 1 of construction with a daily average of two barge movements a day (one two-way trip of a tug pulling one or more barges). A *Navigational Issues and Preliminary Risk Assessment* was carried out and due to the low number of barges arriving at the site it is anticipated that there would be no major impact on river navigation in the vicinity of the site. Barge movements are shown graphically in Figure L.8 overleaf.

Figure L.8 Cremorne Wharf Depot: Barge movements



L.5.111 Measures incorporated into the *CoCP* Part A to reduce transport effects include HGV management and control measures such as designated vehicle routes to sites for construction vehicles. The implementation of these measures was assumed for the assessment of construction effects.

L.5.112 In addition to the above general transport measures within the *CoCP* Part A, the following transport measures are incorporated into the *CoCP* Part B relating to the Cremorne Wharf Depot site:

- a. operation of a one-way system in and out of the site with the access from the east end of the site and egress from the west
- b. the eastern site access would be left turn in only and the western site access would be right turn out only
- c. where practical HGVs would access and egress the site between 9:30am and 3pm to avoid school traffic outside these hours
- d. all vehicles would access and egress the site from Cremorne Road/Cheyne Walk (A3220) and Lots Road junction from the east
- e. suspension of a number of parking spaces on Lots Road.

L.5.113 The existing access and egress points to the Lots Road Pumping Station would be widened to accommodate 16.5m articulated vehicles turning into and out of the site as part of the works. No demolition works would be required other than the alterations to the kerbs.

- L.5.114 The transport demands created by the development in the operational phase would be low and limited to occasional maintenance visits every three to six months, with certain instances where larger cranes may be required for access to the shaft and tunnel every ten years. It is not considered that there would be any significant transport effects during the operational phase given the infrequent requirement for use of vehicles and mitigation would not be required.
- L.5.115 The outcomes of the *Transport Assessment* (Section 10) indicate that with the mitigation measures in place the changes to be expected in the transport networks are not adverse and therefore no additional measures are required for the construction or operational phases
- L.5.116 The project was designed to limit the effects on the transport networks as far as possible and no further mitigation is proposed at this site. The design of the site during construction and the proposed mitigation measures within the *CoCP* are sufficient and meet the criteria in the NPS (para. 4.3.16)

Waste management

- L.5.117 The Waste Strategy was developed to provide a framework for the management of materials and waste that would be produced throughout the construction and operational phases of the project. This would satisfy the criteria set out in NPS para. 4.14.6.
- L.5.118 There are no particular site-specific waste issues associated with the use of this site.

Socio-economic

- L.5.119 Section 8 of the *Planning Statement* details the potential effects of construction and operation of the project on socio-economic issues at a project-wide level.
- L.5.120 The council has agreed that Thames Water could use the depot site. The waste management activities ceased in March 2011 and it is understood that salt (for highways maintenance), opera sets (for Holland Park Opera) and street cleaners' equipment are currently stored at the depot. Fronting the site is the Thames Path and a national cycle route running along Lots Road.
- L.5.121 During construction, users of the Thames Path and the national cycle route are unlikely to experience a reduction of amenity (*Environmental Statement*, Vol 12, Section 10). The *CoCP* Part B identifies that the southern footway (Thames Path) on Lots Road would only be closed to construct the crossovers for site access and would otherwise remain open and unobstructed, meeting the criteria set in the NPS (para. 4.8.24).
- L.5.122 Site-specific measures, which are incorporated to reduce the possibility of socio-economic effects and particularly amenity effects, are incorporated into the *CoCP* Part B. For example Lots Road is identified a minor residential road and where practical, HGVs accessing and egressing the site would be between 9.30am and 3pm to avoid school traffic outside these hours.

- L.5.123 The Royal Borough of Kensington and Chelsea raised concerns regarding disruption for the Cremorne Riverside Activities Centre. Thames Water will continue to discuss the works in the river with the Port of London Authority and a *Navigational Issues and Preliminary Risk Assessment* accompanies the application, which identifies the activities and assessment undertaken to identify navigational issues, risk and mitigation measures. If the works proceed, contractors would provide detailed method statements and navigational risk assessments to be agreed with the Port of London Authority prior to commencement of the works.
- L.5.124 This site is expected to require a maximum workforce of 65 workers. These jobs and training opportunities would provide a stimulus to the local economy.
- L.5.125 There are no anticipated operational effects as a result of the works at Cremorne Wharf Depot. The benefits of the works at Cremorne Wharf Depot and the project outweigh any socio-economic impacts identified.

L.6 Overall conclusions

- L.6.1 The need for the project is established at the national level in the NPS. The Environment Agency identified the Lots Road Pumping Station CSO as one of the 34 CSOs that require control through the project. In an average year, the Lots Road Pumping Station CSO discharges approximately 1,140,000m³ of untreated sewage into the River Thames in front of Cremorne Wharf Depot. The capture of the Lots Road Pumping Station CSO discharges within the main tunnel would substantially reduce the flows of untreated sewage into the River Thames in this location making a contribution to meeting the wider need for the project identified in the NPS.
- L.6.2 This assessment presented an analysis of the key planning considerations associated with the proposed works at Cremorne Wharf Depot, in accordance with the factors identified in the NPS. The potential impacts of the construction and operation of the project in this location were carefully considered throughout design development and consultation as reported in the *Consultation Report, Design and Access Statement* and *Environmental Statement*.
- L.6.3 Given the site's location, in a restricted urban site close to sensitive receptors, it is inevitable there would be some disturbance to sensitive receptors during the three year construction period. While Thames Water sought to minimise any disturbance that would be experienced through sensitive design and mitigation, some adverse effects are likely to remain. These comprise noise effects at residential properties on Lots Road and the proposed Lots Road Power Station development.
- L.6.4 The construction effects are discussed further in Section 7 of the *Planning Statement*. For each of these construction effects, the project design was refined and all practicable mitigation applied and it is considered that the remaining adverse impacts are an unavoidable consequence of intercepting the CSO in a dense urban environment.

- L.6.5 The proposals at Cremorne Wharf Depot would also give rise to a number of significant beneficial effects, comprising:
- a. Once operational the site would enhance the settings of the listed Lots Road Pumping Station and Thames Conservation Area.
 - b. As supported by the Design Council CABI and the Royal Borough of Kensington and Chelsea, provision was made to enable the Thames Path to be installed along the riverside if compatible with the future use.
- L.6.6 The proposed works at the Cremorne Wharf Depot site, and the mitigation measures developed and advanced as part of the application for development consent, directly accord with the approach required by the NPS. Adverse effects have been minimised as far as possible and opportunities have been taken to enhance the local environment and to leave a positive legacy.
- L.6.7 Sections 7 and 9 of the *Planning Statement* consider the implications of the local effects of the works at Cremorne Wharf Depot and the other sites, and describe the overall balance between impacts and benefits associated with the project as a whole, against the guidance in the NPS. It concludes that the works at Cremorne Wharf Depot, and the project as a whole, are compliant with the NPS and that development consent should be granted.

Annex L: Drawings for Cremorne Wharf Depot

List of drawings

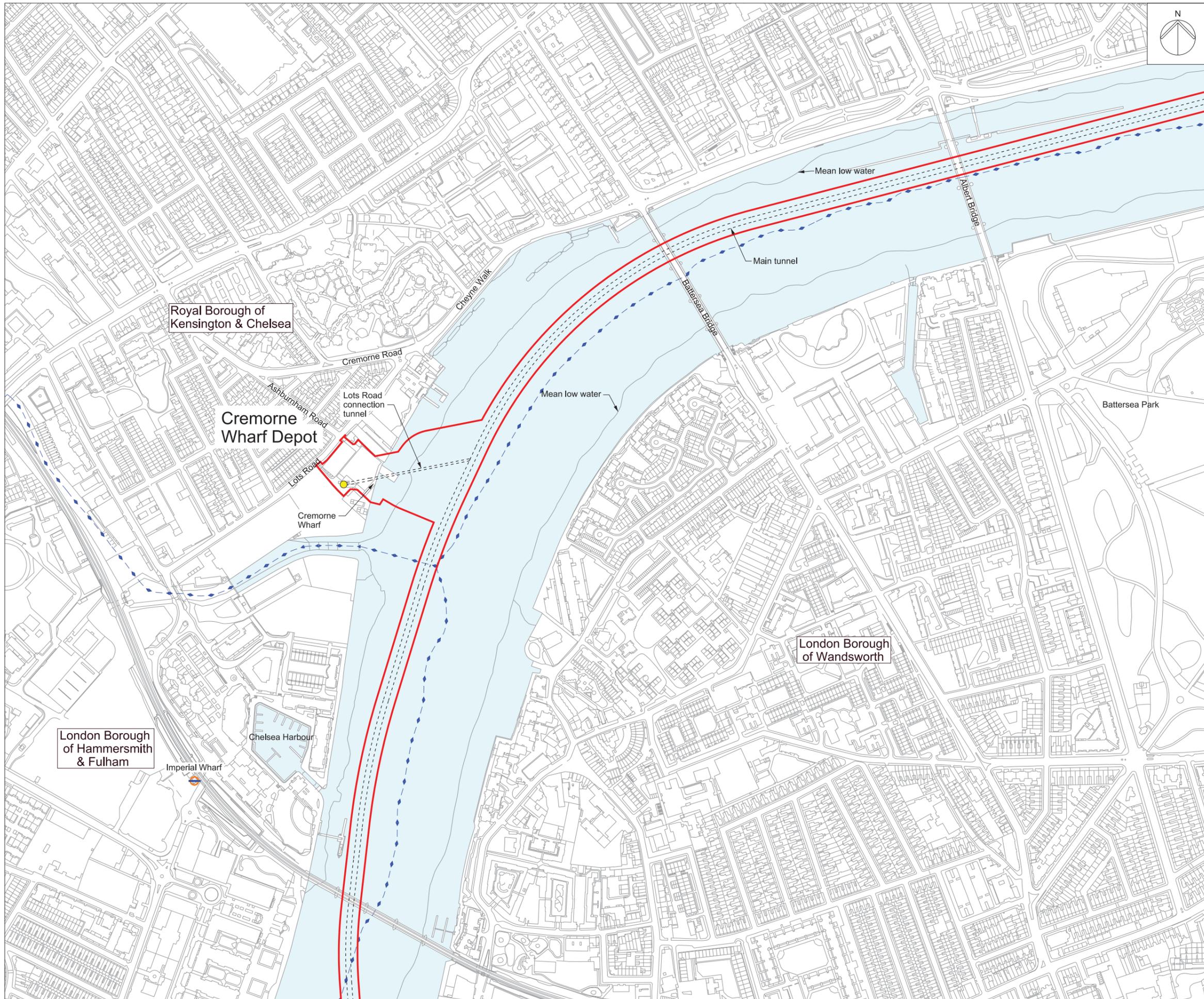
Cremorne Wharf Depot: Location plan

Cremorne Wharf Depot: As existing site features plan

Cremorne Wharf Depot: Construction phases plans

Cremorne Wharf Depot: Land use plan

This page is intentionally blank



Mapping reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown Copyright and Database right 2012. All rights reserved. Ordnance Survey licence number 100019345

Keyplan:



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

Key:

- Local authority boundary
- Order limits
- Tunnel
- Shaft

Notes:

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

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

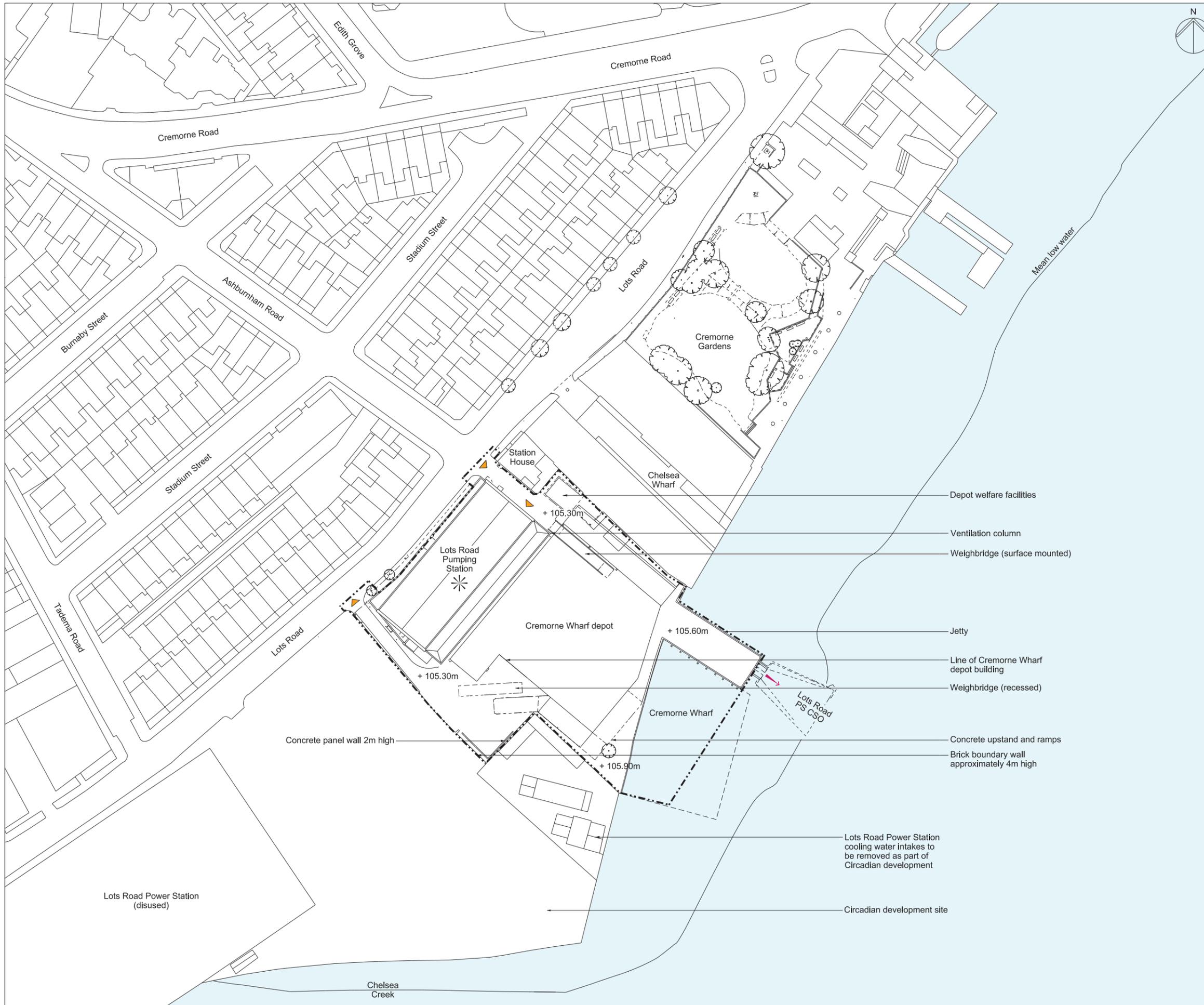
Application for Development Consent

Location plan

Book of plans - section 13
DCO-PP-11X-CREWD-130001
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames





Mapping reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown Copyright and Database right 2012. All rights reserved. Ordnance Survey licence number 100019345



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

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

Notes:

- All dimensions and levels are approximate.
- Any discrepancy between the location of structures and the parameters marked on the drawings are due to differences between the Ordnance Survey base and the topographic survey base, both of which have been used in the preparation of this drawing.

- Depot welfare facilities
- Ventilation column
- Weighbridge (surface mounted)
- Jetty
- Line of Cremorne Wharf depot building
- Weighbridge (recessed)
- Concrete upstand and ramps
- Brick boundary wall approximately 4m high

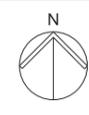
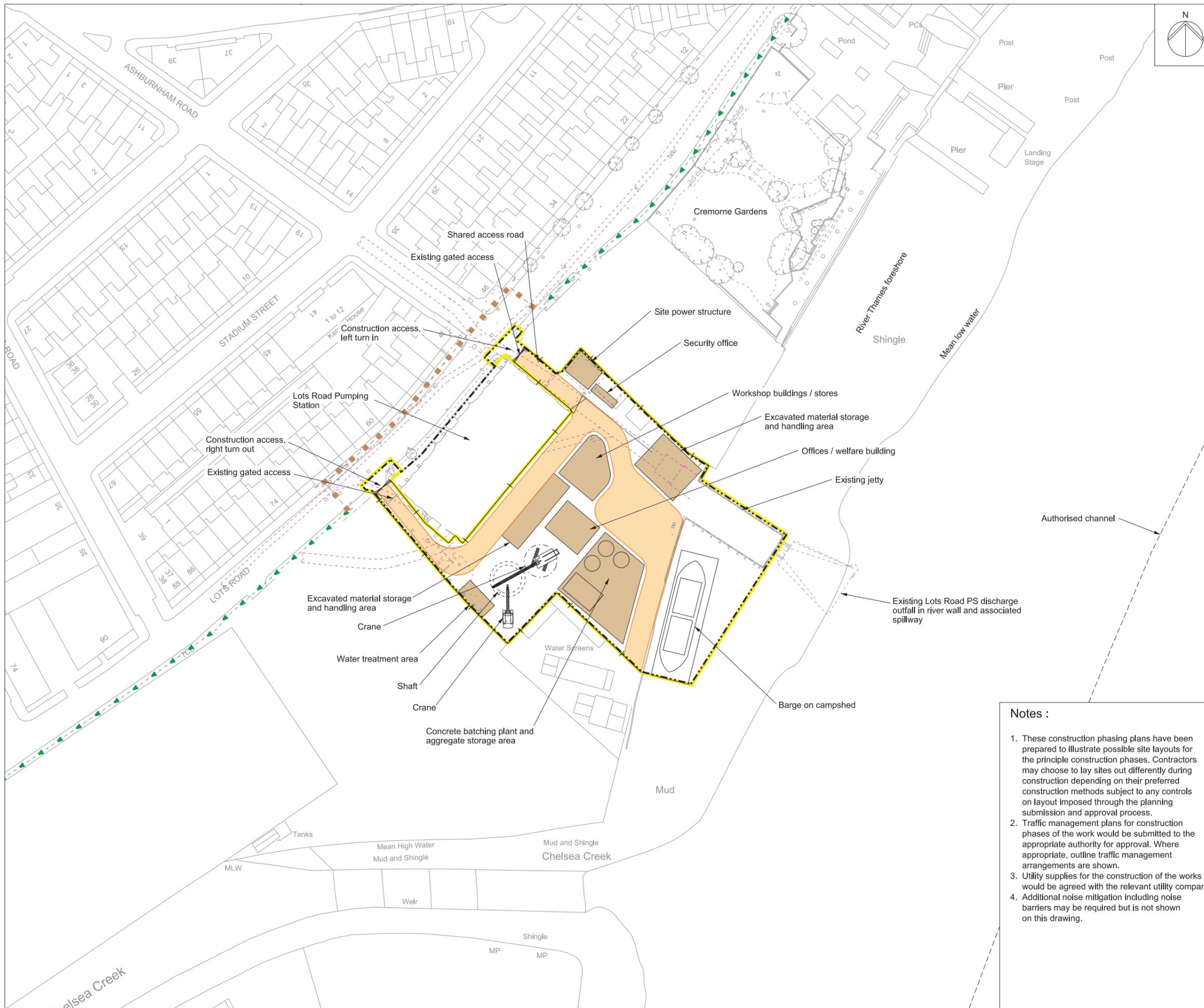


FOR INFORMATION

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





Mapping reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown Copyright and Database right 2012. All rights reserved. Ordnance Survey licence number 100019345



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

- Key:**
- Limits of land to be acquired or used (LLAU)
 - Hoarding
 - Maximum extent of working area
 - Existing public right of way
 - 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

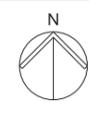
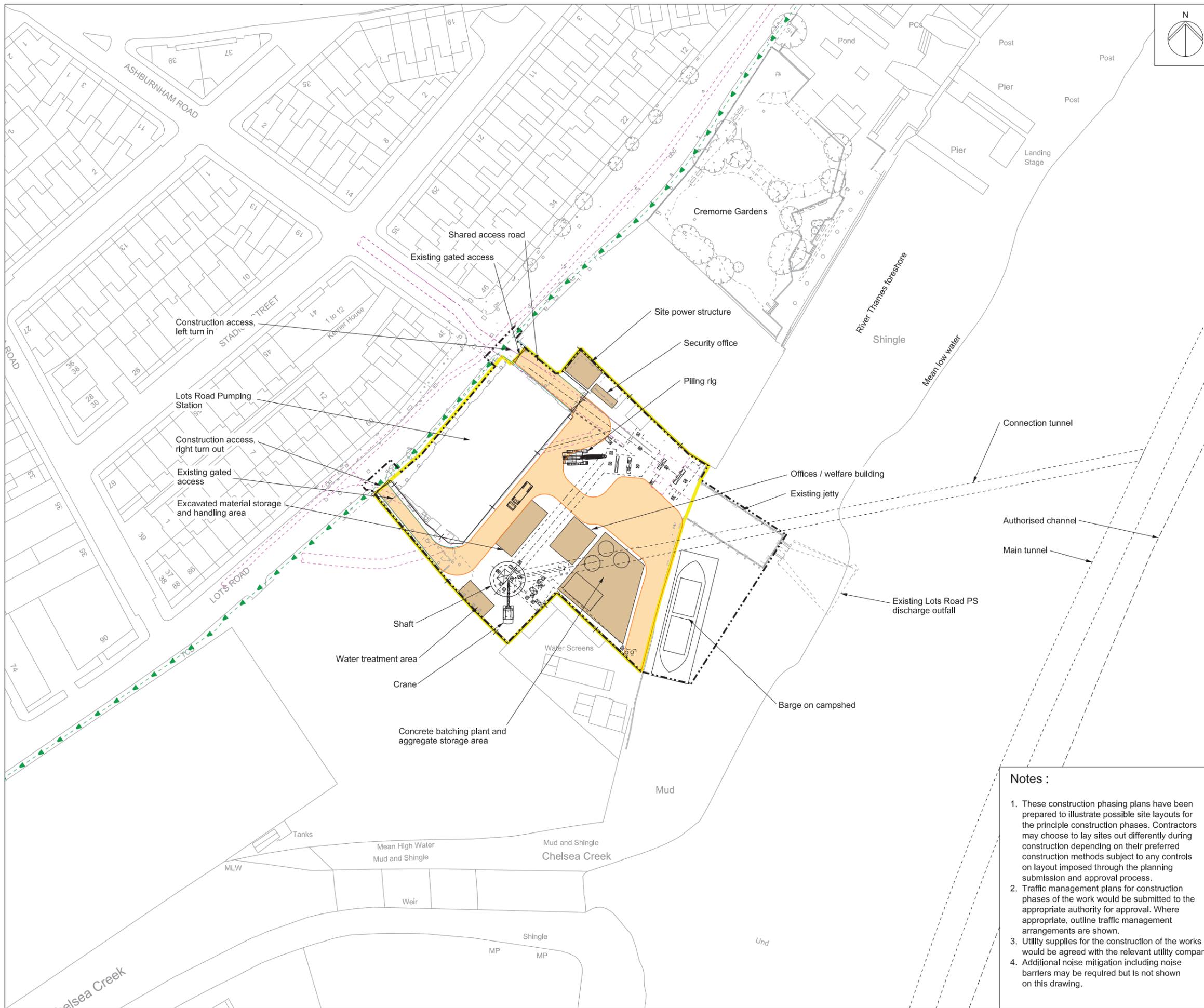
Location
Cremorne Wharf Depot
Royal Borough of Kensington & Chelsea

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



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.

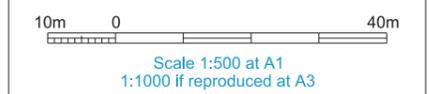


Mapping reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown Copyright and Database right 2012. All rights reserved. Ordnance Survey licence number 100019345



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

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



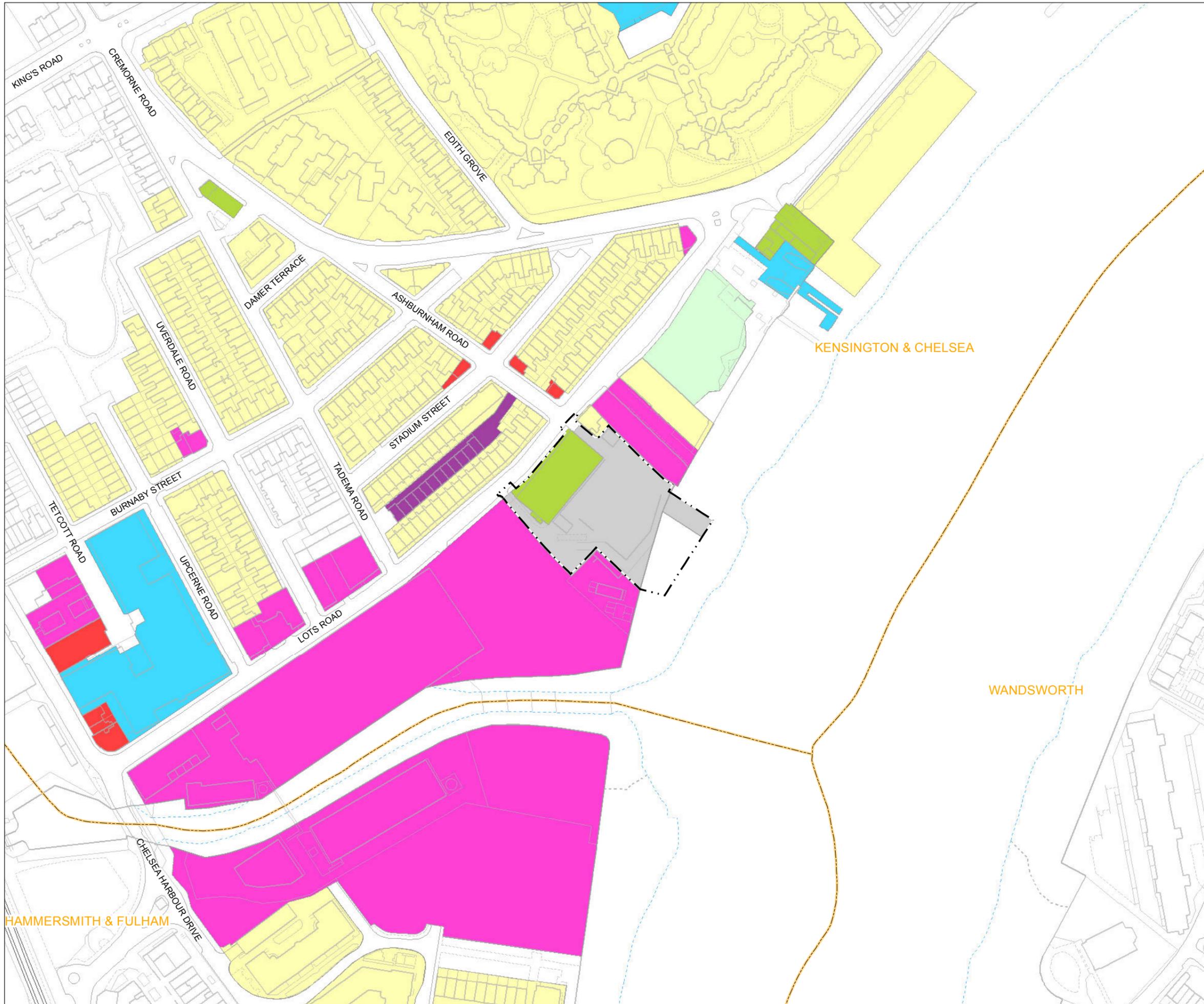
ILLUSTRATIVE

- 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

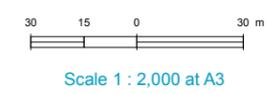




Mapping reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown Copyright and Database right 2012. All rights reserved. Ordnance Survey licence number 100019345



- Key**
- Limits of Land to be Acquired or Used
 - Local Authority Boundary
- Land Use**
- Class A1-A5 (Shops, Financial & Professional Services, Restaurants, Drinking Establishments and Hot Food Takeaways)
 - Class B1 (Business (Offices except A2), Research and Development, Light Industry)
 - Class B2-B8 (General Industrial / Storage or Distribution)
 - Class C3-C4 (Dwelling Houses)
 - Class D1-D2 (Non Residential Institutions (Community Facilities) and Assembly and Leisure)
 - Mixed Use
 - Other
 - Open Space



FOR INFORMATION

Location
Cremorne Wharf Depot
 Royal Borough of Kensington & Chelsea

Document Information
Planning Statement
 Land use

1PL03-MG-00835
 January 2013



HAMMERSMITH & FULHAM

KENSINGTON & CHELSEA

WANDSWORTH

This page is intentionally left blank

This page is intentionally blank

Copyright notice

Copyright © Thames Water Utilities Limited January 2013.
All rights reserved.

Any plans, drawings, designs and materials (materials) submitted by Thames Water Utilities Limited (Thames Water) as part of this application for Development Consent to the Planning Inspectorate are protected by copyright. You may only use this material (including making copies of it) in order to (a) inspect those plans, drawings, designs and materials at a more convenient time or place; or (b) to facilitate the exercise of a right to participate in the pre-examination or examination stages of the application which is available under the Planning Act 2008 and related regulations. Use for any other purpose is prohibited and further copies must not be made without the prior written consent of Thames Water.

Thames Water Utilities Limited

Clearwater Court, Vastern Road, Reading RG1 8DB

The Thames Water logo and Thames Tideway Tunnel logo are © Thames Water Utilities Limited. All rights reserved.

DCO-DT-000-ZZZZ-070100

