Please note:

Further details are provided in the Final Report on Site Selection Process (doc ref: 7.05) that can be found on the Thames Tideway Tunnel section of the Planning Inspectorate’s web site.
Site suitability report
S03EG

Acton Park Industrial Estate
# Thames Tunnel

## Site suitability report S03EG

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List of abbreviations

- AOD: above Ordnance Datum
- BAP: biodiversity action plan
- BT: British Telecom
- CPO: compulsory purchase order
- CSO: combined sewer overflow
- DLR: Docklands Light Railway
- EA: Environment Agency
- GLA: Greater London Authority
- HGV: heavy goods vehicle
- LNR: local nature reserve
- LPA: local planning authority
- LU: London Underground
- m: metre/metres
- MOL: Metropolitan Open Land
- ONS: Office of National Statistics
- ORN: Olympic Route Network
- PLA: Port of London Authority
- POS: public open space
- PTAL: public transport accessibility level
- SAM: scheduled ancient monument
- SINC: site of importance for nature conservation
- SNCI: site(s) of nature conservation importance
- SSR: site suitability report
- SSSI: site(s) of special scientific interest
- SUDS: sustainable urban drainage systems
- TfL: Transport for London
- TD: tunnel datum
<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>TLRN</td>
<td>Transport for London Road Network</td>
</tr>
<tr>
<td>TPA</td>
<td>Thames Policy Area</td>
</tr>
<tr>
<td>UDP</td>
<td>unitary development plan</td>
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<tr>
<td>UXO</td>
<td>unexploded ordnance</td>
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1 Introduction

1.1 Purpose and structure of the report

1.1.1 The Site selection methodology paper (May 2009 and revised August 2011)\(^a\) outlines the process to be used to create the preferred list of main tunnel sites, and this process also applies to CSO sites. Paragraph 2.3.31 lists the type of general considerations that will be addressed in each site suitability report. Whether a consideration is relevant to the assessment of a site will depend on available information and professional judgement.

1.1.2 This report was prepared through the assessment of information from the perspective of a number of technical disciplines: engineering, planning, environment, property and community. The reports have been prepared on the basis of the information listed in Appendix 1 and this level of information is considered to be appropriate to this stage of assessment.

1.1.3 The Site selection background technical paper provides information on the requirements for different types of sites, their sizes and typical activities/facilities within the sites.

1.1.4 Each site suitability report considers a particular site on its own merits. In addition, an Engineering options report was produced, which relates to main tunnel and connection tunnel options. Information from both of these reports will feed into the technical assessment of how well the site may fit in with tunnel design options, ensuring combinations of sites spread across the length of the tunnel route provide a reasonable spatial distribution of sites (that will best assist with the construction of the tunnel, operation and maintenance). The outcomes are reported in the Phase two scheme development report.

1.2 Background

1.2.1 The process for selecting sites is set out in the Site selection methodology paper. All sites have previously passed through the following parts of Stage 1:

- Part 1A – Creation of the long list of potential main tunnel (and CSO) sites

- Part 1B – Creation of a short list of potential main tunnel (and CSO) sites
  - Table 2.2: Long list of main tunnel (and CSO) sites – an assessment against set considerations and values
  - Table 2.3: Draft short list of main tunnel (and CSO) sites – assessment against a list of more detailed considerations
  - Workshops to consider each site to arrive at a short list of sites.

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\(^a\) The amendments made in August 2011 do not change the site selection methodology process. The amendments only related to the introduction of a second phase of consultation (paragraphs 2.3.13-2.4.15) and minor factual updates.
1.2.2 The final part of Stage 1 includes this report. The following is an overall summary of all elements that apply to all the sites on the final short list:

- Part 1C – Creation of the preferred list of main tunnel (and CSO) sites – site data, site visits, site suitability reports, engineering options report and optioneering workshops that are reported in the Phase two scheme development report.

1.2.3 The Site selection methodology paper also contains a provision for a back-check process in paragraph 2.5.6 that states:

“If any sites for any of the main tunnel sites or intermediate sites (or CSO site) are eliminated for any reason, if there are significant changes of circumstances in relation to existing sites or combinations of sites, if new or replacement sites are required or found or if the engineering design develops in unexpected ways then a targeted repeat of stages 1-3 will need to be undertaken in order to fill in any site gaps.”

1.3 Consultation

1.3.1 Thames Water’s approach to engagement and consultation for the Thames Tunnel project is outlined in the Statement of Community Consultation and the accompanying Community Consultation Strategy. Thames Water has engaged regularly with all potentially affected London local authorities, other stakeholders and interested parties on sites and the project.

1.3.2 Phase one consultation has been completed for all the preferred and shortlisted sites along with the three main tunnel route options. The analysis of the consultation responses is set out in the Report on phase one consultation and Interim engagement report. Any relevant site comments were considered at the post phase one consultation optioneering workshops. The outcomes of these workshops are reported in the Phase two scheme development report. After the workshops, engagement on sites has continued with key stakeholders, and the engineering design for sites has also continued in parallel. In autumn 2011, phase two consultation will provide another opportunity for people to comment on sites.

2 Site information

2.1 Site and surroundings

2.1.1 This site is one of the shortlisted main tunnel sites. This section provides an overview of all the site information that will be used by one or more disciplines to assess the site in sections 3 to 9 of this report.

2.1.2 The proposed site is located within Acton Park Industrial Estate, which fronts onto Stanley Gardens and The Vale in the London Borough of Ealing. The site is currently occupied by industrial units and backs onto residential gardens to the south, in Hatfield Road. A site location plan is attached as Appendix 2.

2.1.3 The site is near the boundary of the London Borough of Hammersmith and Fulham which runs along Warple Way.
2.1.4 The surrounding area is predominantly industrial in character, with industrial units to the east, southeast and southwest of the site. The southern site boundary backs onto residential garden space from properties along Hatfield Road. Part of the site is close to Southfield Playing Fields to the southwest and is in proximity to Acton Park to the north, beyond The Vale.

2.1.5 The site is located within a major employment location (London Borough of Ealing, UPD Policy 6.1), and all the mapped designations are shown on the planning and environment plans in Appendix 3.

2.1.6 Photographs of the site and surroundings, together with an aerial photograph of the site, are attached as Appendix 4.

2.1.7 A number of preliminary transport plans for the site are attached as Appendix 5.

2.1.8 Third-party assets and significant utilities are listed below and are shown on the services and geology plan in Appendix 6:

**Acton Park Industrial Estate (main tunnel reception site)**
- 1.8m diameter sewer adjacent to the site in Stanley Gardens
- 1.8m by 1.1m culvert sewer within the site adjacent to the south-western boundary
- 1.2m diameter sewer within the site adjacent to the south-western boundary.

**Acton Storm Tanks (CSO)**
- Thames Water operational site occupied by six uncovered storm tanks, a pumping station and associated infrastructure
- 1.8m diameter Acton Storm Relief sewer (CSO connection is to this sewer)
- A number of additional sewers are located within the Storm Tanks site.

2.1.9 A number of additional sewers are located within the Storm Tanks site. The locations of other third-party assets, such as BT and fibre optic communication cables, are to be confirmed by further studies and utility searches and may not be shown on the services and geology plan.

2.1.10 Information on the geology specific to this site is unavailable. It is considered that geological conditions on this site will be similar to those found at the Acton Storm Tanks, which lie to the southwest. Information on the geology specific to the Acton Storm Tanks can be found within the services and geology plan, which is in Appendix 6. This plan shows that both shafts would be founded in London Clay.

2.2 Type of site

2.2.1 The site S03EG is being considered as a main tunnel reception site with a CSO interception of the Acton Storm Relief Sewer (CS01X).
2.2.2 The location of the Acton Storm Relief Sewer would be remote from site S03EG. The development of site S03EG as a main tunnel reception site would still require a separate CSO site at C01YC Acton Storm Tanks and a probable tunnelled connection culvert between C01YC and S03EG.

3 Proposed use of site – construction phase

3.1.1 The proposed construction phase layout for the main tunnel site is located in Appendix 7 – Construction phase layout, and is based on a preliminary assessment.

3.1.2 The construction phase layout drawing is illustrative and shows:
- a main tunnel reception site on S03EG, CSO interception of the Acton Storm Relief Sewer (CS01X) on site C01YC and tunnelled connection culvert linking C01YC to S03EG
- potential access points.

3.1.3 This drawing provides an initial preliminary schematic layout that has not been optimised. If the site proceeds to the next stage as a preferred site, construction phase layouts would be optimised to minimise impacts.

3.1.4 Drawings identifying typical construction activities associated with the shaft construction phase are provided in Appendix 7. Potential above-ground construction features (dependent on shaft type) include:
- approximately 3m high hoarding around the site boundary
- welfare facilities, temporary structures, approximately 3m high.
- grout plant, approximately 3m to 5m high, including silos
- mobile crane, approximately 30m high (maximum and not for full construction duration).

3.1.5 Preliminary data associated with the construction phase are provided in Table 3.1.

Table 3.1 Construction phase data

<table>
<thead>
<tr>
<th>Activity</th>
<th>Main tunnel reception site with CSO interception</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of construction period</td>
<td>4 to 5 years</td>
</tr>
<tr>
<td>Likely working hours, ie, (night/day/weekend)</td>
<td>12 hrs from 7am to 7pm</td>
</tr>
<tr>
<td>Working days</td>
<td>Mon to Sat</td>
</tr>
<tr>
<td>Primary means of transporting excavated material away from site</td>
<td>Road</td>
</tr>
<tr>
<td>Primary means of transporting materials to site</td>
<td>Road</td>
</tr>
</tbody>
</table>
4 Proposed use of site – operational phase

4.1 Introduction

4.1.1 The indicative operational phase layout for the main tunnel site is located in Appendix 8 – *Operational phase layout*, and is based on a preliminary assessment. Operational phase layouts for the interception works on site C01YC are not illustrated.

4.1.2 The generic elevations of structures shown on the operational phase layout are located in Appendix 8 and provide an illustration of typical examples of the permanent structures which are applicable to main tunnel sites.

4.1.3 The underground infrastructure at this site would likely comprise a shaft, double flap valve chamber, penstock chamber and associated culverts. The interception chamber would be located on site C01YC. It is anticipated that a tunnelled connection culvert would be required between the CSO interception at C01YC and the main shaft at S03EG.

4.1.4 The above-ground infrastructure at this site would likely comprise a ventilation column and a ventilation building.

4.1.5 The top structures to the shaft and flap valve chamber would be finished at a level of approximately 106mATD (6mAOD), approximately equal to the existing ground level. The top structure is to provide access and egress into the shaft. For further information on the generic layout of this top structure, refer to Appendix 8.

4.1.6 Top structures would be surrounded by hardstanding. The area would be fenced.

4.1.7 Preliminary data associated with the operational phase are provided in Table 4.1.

<table>
<thead>
<tr>
<th>Table 4.1 Operational phase data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of inspections and maintenance and likely working hours, ie, (night/day/weekend) – frequency of visits</strong></td>
</tr>
<tr>
<td><strong>No. of traffic movements</strong></td>
</tr>
</tbody>
</table>
4.2 Restoration and after-use

4.2.1 The portion of the site not occupied by the permanent works would be restored to its original condition on completion of the construction works. If any buildings were demolished, these would not be reinstated unless required.

5 Engineering assessment

5.1 Access

5.1.1 This section should be read in conjunction with Section 7.2.

Road

5.1.2 Existing road access to the site is via two access points directly off Stanley Gardens. This is a 7.5m-wide, one-way road which allows northbound vehicle movements towards the A4020. Traffic accessing the site travels southbound along Warple Way prior to using either Canham Road or Bradford Road to access Stanley Gardens. Traffic exiting the site uses Stanley Gardens to return to the A4020. The roads are of restricted width and have high levels of on-street parking on both sides. They are fronted primarily by business and light industrial premises.

5.1.3 A section of Warple Way and Stanley Gardens are currently one-way roads, with Warple Way allowing vehicles in a southbound direction (as far as the junction with Canham Road) and Stanley Gardens allowing traffic flow in a northbound direction.

5.1.4 Alternative access from the A4020 is currently available via the residential and traffic calmed Larden Road and either Cobbold Road or Valetta Road.

5.1.5 Construction site access and egress would be via two temporary accesses onto Stanley Gardens in the vicinity of the two existing accesses to the industrial area.

5.1.6 The access and egress route from/to the TLRN (A40) would use Old Oak Road and The Vale (A4020). The access route would then use Warple Way, Bradford Road and Stanley Gardens to access the site. Warple Way between The Vale and Bradford Road is one-way southbound, is approximately 7.5 metres wide and features parking on both sides, reducing the effective width to 3.5m. To enable one-way access by HGVs, some on-street parking would require removal. A tight bend is situated at the junction of Warple Way and Bradford Road. Large HGVs such as articulated vehicles may be unable to manoeuvre around this bend. Therefore, some widening works may be required in the north-western corner of the Acton Storm Tanks site to enable large HGVs to egress the site. Both Canham Road and Stanley Gardens feature on-street parking. Canham Road features parking on one-side, while Stanley Gardens features parking on both sides. On both roads, this reduces the effective carriageway width to 3.5 metres. Some on-street parking would therefore require removal to enable one-way access by HGVs. Access route via Warple Way/Stanley Gardens is 1.8km.
5.1.7 Permanent access to the site would be off Stanley Gardens, utilising the existing one-way system. Access would be via the existing emergency access gate to the industrial estate.

5.1.8 The use of site S03EG for a main tunnel site would still require the use of site C01YC for CSO interception works. It is anticipated that site S03EG would act as the main tunnel site, with C01YC being a smaller CSO site.

5.1.9 Road access for the CSO site at C01YC would be via new vehicular access points off Warple Way, in close proximity to the junction with Cobbald Road. Vehicles accessing site C01YC would travel southbound along Warple Way before turning into the site. Vehicles exiting the C01YC site would travel northbound along Warple Way, prior to utilising the existing one-way system in Canham Road and Stanley Gardens to transfer to either site S03EG or the A4020.

5.1.10 Further details about the site access requirements for the CSO interception works is contained within Site suitability report C01YC, Acton Storm Tanks.

5.1.11 There would be no rail network local to this site. Acton Central railway and tube station would be approximately 1km away from the site.

5.1.12 The site would be more than 1.5km from the river, so there would be no river access and jetty/wharfage facilities.

5.2 Construction works considerations

5.2.1 The site is occupied by a number of approximately two- to six-storey structures of varying construction type and age. The area required for construction purposes is occupied by a number of light industrial units of approximately two storeys. Site clearance works would require demolition of all structures within the construction boundary.

5.2.2 The CSO interception chamber and connection culvert would both be situated outside the site, on site C01YC, and would require a tunnelled connection culvert to connect C01YC to S03EG. This may have construction programming implications on either S03EG or C01YC.

5.2.3 This split site arrangement would have the main construction activities occurring at S03EG, and C01YC acting as a satellite CSO site. The splitting of the construction activities would potentially require doubling the handling of some materials and reduce the construction efficiency. Although the splitting of construction activities is not ideal, it is considered that this would be manageable.

5.2.4 It is anticipated that a tunnelled connection culvert would be required to convey CSO flows from the interception location at site C01YC to the shaft location at S03EG. The route of this tunnelled connection may be required to pass beneath either the existing storm tanks or the pumping
station located within site C01YC. The route of the connection would also be required to pass beneath third-party buildings.

5.2.5 Data available on third-party assets and significant utilities show that the only items of concern in this area would be the three sewers adjacent to or within the site. Construction methods would be adopted, as appropriate, to mitigate potential settlement of these assets.

5.2.6 Further detail about the site requirements for the CSO interception works is contained within Site suitability report C01YC, Acton Storm Tanks.

5.2.7 It is likely that the proposed works can be constructed within the overall construction programme.

5.3 Permanent works considerations

5.3.1 The top structures in S03EG and C01YC would be flush with existing ground levels.

5.3.2 Further detail about the permanent works considerations for the CSO interception works is contained within Site suitability report C01YC, Acton Storm Tanks.

5.4 Health and safety

5.4.1 Consideration would have to be given to enable the safe demolition of the structures which currently occupy the site.

5.4.2 Care would be required when working near the open storm tanks when conducting the interception works at site C01YC.

5.4.3 There are no unusual health and safety issues with this site.

6 Planning assessment

6.1 Introduction

6.1.1 The planning assessment builds on the advantages and disadvantages reported in Table 2.3 and covers the following areas:

- Planning applications and permissions
- Planning context
- Planning comments.

6.2 Planning applications and permissions

6.2.1 An initial desktop search of the London Borough of Ealing online planning applications database did not identify any significant planning applications submitted for the site within the last five years that were inconsistent with the existing employment use.

6.2.2 However, there have been a number of planning permissions granted to change the use of commercial units nearby to non-employment use classes. These are:
• Units 1 and 2 Bradford Road, application granted June 2007 (ref 2007/1926) for use as a high-tech resource/study centre, museum of Asian music, housing of digital archives, interactive multimedia displays, space for workshops and recitals, and ancillary administrative office.

• Power House, 74 Stanley Gardens, Lawful Development Certificate for existing use of building for the teaching of vocals, keyboards, drums and guitars (Use Class D1) (ref 2010/1168), deemed permitted development, June 2010.

• Unit 1c, Long Island House, application granted for change of use from offices (Use Class B1a) to a centre for prayer and meditation (Use Class D1) in June 2011 (ref 2011/0105).

• 29 Warple Way to change of use from B1 to mixed B1 and D1 (educational centre) (ref 2004/4032)

• Certificate of Lawfulness (ref 2010/0978) for the use of 41 Warple Way for the teaching of music (Use Class D1).

6.3 Planning context

6.3.1 The following is a summary of the relevant local planning policies and designations affecting the site, taken from the current statutory development plans for the London Borough of Ealing, as well as the neighbouring London Borough of Hammersmith and Fulham. The local plans comprise the policies from the Ealing Unitary Development Plan, adopted in October 2004, and the Hammersmith and Fulham Unitary Development Plan, adopted in 2003.

6.3.2 The London Borough of Ealing submitted its Development (or Core) Strategy to the Secretary of State on 21 July 2011. Following review of the submitted documents, we consider the relevant policies to be of material weight.

6.3.3 The London Borough of Hammersmith and Fulham Core Strategy is subject to a binding Inspector’s report and anticipated for formal adoption by the council in October 2011. Following review of the submitted documents, we consider the relevant policies to be of material weight.

London Borough of Ealing

6.3.4 The site is located within a major employment location. UDP Policy 6.1, Supply of Land and Property for Business Use, and UDP Policy 6.4, Industry and Warehousing in Major Employment Locations, supports industry as the preferred use. UDP Policy 6.5, Ancillary Development in Major Employment Locations, seeks to maximise or retain employment potential and enhance the attractiveness of major employment locations. The council will seek to retain an appropriate land supply for industrial and warehousing units in these locations. Relocation of existing businesses to appropriate alternative premises may be required.

6.3.5 The Acton Park Industrial Estate is adjacent to a wider strategic residential area designation. UDP Policy 1.1 encourages housing and other uses
serving local residents in these residential areas. Planning should also have regard to other such uses essential for sustainable residential communities, such as open space, retail and employment-giving uses. Ealing’s emerging Development (or Core) Strategy identifies the site within the wider Uxbridge Road/Crossrail Corridor. Policy 2.1, Realising the potential of the Uxbridge Road/Crossrail Corridor, supports the sensitive development management of this area.

6.3.6 The site boundary backs onto residential garden space from properties along Hatfield Road. UPD policies 4.11 and 4.12 seek to protect the amenity of residential areas from the effects of noise, vibration and light pollution. Within the emerging Development (or Core) Strategy, Policy 1.1, Spatial Vision for Ealing 2026, environmental impacts of activities within the borough should be reduced, with air quality and ambient noise levels protected and improved, to create a clean and healthy environment for all.

6.3.7 Ealing’s Acton Park Conservation Area is located opposite the site, across The Vale and the Bedford Park Conservation Area, approximately 265m to the south of the site. According to UDP Policy 4.8, Conservation Areas, the council will preserve or enhance the character and appearance of conservation areas and their settings.

6.3.8 Part of the site is close to Southfield Playing Fields to the southwest and is in proximity to Acton Park to the north, beyond The Vale. UDP Policy 3.4, Public and Community Open Space, states that development on adjoining land to open space should preserve or enhance the open character. UDP Policy 3.1, Major Open Areas, is also applicable since Acton Park is designated MOL and adjacent development should not prejudice its purpose, sense of openness or environmental character.

6.3.9 The site is in close proximity to a local nature conservation site, located within Southfield Playing Fields, to the southwest. UDP Policy 3.8, Biodiversity and Nature Conservation, and Policy 3.9, Wildlife Protection, promotes conservation and enhancement and will not permit development and other land use changes that will have an adverse effect on protected or priority species.

London Borough of Hammersmith and Fulham

6.3.10 In the Hammersmith and Fulham Unitary Development Plan, Policy EN21, Environmental Nuisance, seeks to ensure that no undue detriment occurs to general amenities.

6.3.11 Hammersmith and Fulham’s Ravenscourt and Starch Green Conservation Area is situated approximately 330m to the southeast of the site, close to the boundary of the Acton Storm Tanks and a further 460m to the east if the site along Cobbold Road. Hammersmith and Fulham’s UDP Policy EN2B, Effect of Development on the Setting of Conservation Areas and Views into and out of them, only permits development, including development outside conservation areas, which will preserve or enhance the character or appearance of the conservation area. The emerging Hammersmith and Fulham Core Strategy also supports the need to
protect the quality and character of the borough’s conservation areas within Policy BE1, Built Environment.

6.4 Planning comments

6.4.1 There are few planning designations that are applicable both on and adjacent to the site. These designations have been identified and described in Section 6.3, and those relating to employment uses and residential amenity are of most relevance to the proposed development.

6.4.2 The site is located within a major employment location, and associated policies support industry and warehouse uses, and seek to maximise or retain employment potential. The council may require the temporary relocation of existing businesses to appropriate alternative premises within the local designated area, in accordance with these policies. However, it is worth noting that a number of non-employment uses have recently been granted for change of use on nearby sites, also within the designated area. This may indicate that other uses, such as the construction works associated with a main tunnel reception site, may also be acceptable in this location, particularly given that this use would be temporary and the area of works could be returned back to employment land once completed. The use of the site for the project and the potential conflict with employment policies would require further investigation and discussions with the local authority.

6.4.3 The site is located in close proximity to residential properties, and protecting the amenity of the local residents is a significant consideration. The nearest residents are located on Hatfield Road, with the garden space backing onto the site. It is considered that due to the close proximity of the nearby residential properties to the site, noise, dust and traffic movements are likely to impact on residential amenity in the surrounding area. Appropriate mitigation measures would be required to reduce potential impacts and to protect amenity. The site layout could also be configured in order to locate the nosier construction activities further away from residential properties.

6.4.4 A Scout hut is also located in close proximity to the site and is regularly used by a mums and toddlers group, and there are a number of other noise-sensitive uses, such as an educational music facility and a prayer and meditation centre. Again, appropriate mitigation would be required to reduce potential construction impacts on these community facilities and to safely manage construction traffic in the surrounding area.

6.4.5 The site is in close proximity to Ealing’s Acton Park Conservation Area, separated by The Vale. Use of the site is not considered to have an unacceptable impact on the setting or appearance of this conservation area, given the existing context and potential for mitigation.

6.4.6 Part of the site is adjacent to Southfield Playing Fields to the southwest and is in close proximity to Acton Park to the north, beyond The Vale. Mitigation may be required to avoid potential amenity impacts arising from the construction works, in accordance with UDP Policy 3.4. Acton Park is also designated MOL, and mitigation may be required to reduce potential impact from the permanent works on openness and setting.
6.4.7 A local nature conservation site is located within Southfield Park, which is situated to the southwest of the site. Mitigation may be required to avoid potential impacts arising from the construction works on the designated area.

6.4.8 A further assessment of heritage and environmental considerations is made in section 7.

7 **Environmental appraisal**

7.1 **Introduction**

7.1.1 The following sections summarise specialist assessments which are provided in Appendix 9 – *Environmental appraisal tables*.

7.2 **Transport**

7.2.1 The site is considered suitable as a main tunnel reception site (a number of preliminary transport plans for the site are attached as Appendix 5).

7.2.2 Despite the access route being constrained, the site is only likely to generate a small amount of HGV movements. The use of rail may not be feasible due to the small quantities of excavated material produced by a reception site. Should the quantities be sufficient for rail transport, the potential for construction of rail sidings at Barnes Bridge would require further investigation. In order to enable road access for construction vehicles, some on-street parking will need to be removed. There is limited potential for the workforce to access the site by public transport, although some onsite parking would potentially be available.

7.3 **Archaeology**

7.3.1 On the basis of the information currently available, the site is suitable as a main tunnel reception site as the archaeological risk is likely to be low to medium. No records of archaeological receptors within the site have been identified at this stage, and the site has been subjected to disturbance by modern development. Available geotechnical information suggests that deeply stratified deposits and waterlogged deposits are unlikely to be present. A further desk-based assessment would be required to confirm the above, should this site be progressed.

7.4 **Built heritage and townscape**

7.4.1 This site is considered suitable as a main tunnel reception site as the impact on built heritage receptors is likely to be minimal, and the industrial nature of the site means that it is judged to be of relatively low sensitivity. There are two receptors of medium importance (Bedford Park and Ravenscourt and Starch Green conservation areas) that may potentially be indirectly impacted on. Mitigation in the form of a high-quality scheme design, landscape design and screening would reduce any adverse impacts arising from the scheme.

7.4.2 In terms of townscape impacts, the site is considered to be suitable as a main tunnel reception site, as its existing character is industrial and open.
During construction, the potential loss of vegetation and buildings, and the presence and operation of machinery, materials stores and buildings onsite would impact on the character of the site and local views. Permanent elements are likely to be incorporated into the industrial estate and will only have a minimal impact.

7.5 Water resources – hydrogeology and surface water

7.5.1 In terms of hydrogeology, this site is considered suitable as a main tunnel reception site because the shaft would be constructed in London Clay (unproductive strata). No impact on the Chalk aquifer is expected. The superficial deposits at the site are Langley Silt, which is classified as unproductive strata at the site. Therefore, no impact is expected at shallow depth.

7.5.2 In terms of surface water resources, this site is considered suitable as a main tunnel reception site because there is no direct pathway for pollution to the River Thames. However, standard mitigation would be required.

7.6 Ecology

7.6.1 This site is suitable as a main tunnel reception site and may require only basic ecological surveys if selected. Should notable or protected species be present, it is likely that some limited habitat mitigation or compensation would be required.

7.7 Flood risk

7.7.1 This site is suitable as a main tunnel reception site because although there may be constraints on SUDS due to space and suitability for infiltration, the site lies in Flood Zone 1 (greater than one in 1,000-year flood extent).

7.8 Air quality

7.8.1 This site is suitable for use as a main tunnel reception site. There is a low potential for fugitive emissions of dust during construction to have a perceptible impact at residential receptors closest to the site. However, these impacts can be minimised with standard dust control measures. There is potential for HGV movements on the local road network to cause localised air quality impacts. However, this can be somewhat mitigated by minimising the movement of HGVs during peak hours.

7.9 Noise

7.9.1 This site is suitable as a main tunnel reception site. Although residential receptors are located close to the site, existing buildings should provide shielding from most construction works. However, the number of vehicles associated with the construction phase and their access routes (close to residential areas) has the potential to cause disturbance to properties lining those access routes. If possible, other access routes for vehicles to the site should be investigated.
7.10  **Land quality**

7.10.1 The site is less suitable as a main tunnel reception site based on the high potential for contamination to have occurred from the onsite engineering works and industrial estate, and from offsite activities to have impacted shallow groundwater which may have migrated beneath the site. The identified sources of contamination may impact on site workers and adjacent human receptors through direct contact/vapour inhalation exposure pathways.

8  **Socio-economic and community assessment**

8.1  **Introduction**

8.1.1 The socio-economic and community assessment builds on the advantages and disadvantages reported in Table 2.3 and covers the following areas:

- Socio-economic profile
- Socio-economic and community issues and impacts.

8.2  **Socio-economic profile**

8.2.1 The site is in the Southfield ward of the London Borough of Ealing. Statistics from the Office of National Statistics (ONS) 2001 Census data show the following relevant indicators for the ward, in comparison to the rest of Ealing, London and England as a whole:

- The ward has a mixed population, with a lower percentage of white British people than the average for England.
- The ward has an unemployment rate just lower than the national average, and a high percentage of high-level qualifications.

8.3  **Issues and impacts**

8.3.1 Due to the proposed location of the works for a main tunnel reception site, it is likely that the greatest impact on the local community will be caused by the requirement to relocate a number of existing businesses operating out of premises on the eastern edge of the Acton Park Estate. It appears likely that around five commercial units will need to be demolished to provide the space required for a main tunnel reception site.

8.3.2 There is also a block of residential flats, located opposite the north-eastern corner of the site, opposite the site access and in close proximity to the proposed shaft, which appear likely to be impacted. Due to their close proximity to the works, it may be difficult to effectively mitigate the impact of construction activities on these properties.

8.3.3 There are further homes in the vicinity to the northeast, east, south and west. However, these appear likely to be at a sufficient distance from the proposed works that it should be possible to mitigate the effects of construction-related impacts.
8.3.4 There are a large number of commercial properties, opposite the site to the west on the Acton Park Estate and to the east of the site, which may be affected by its use.

8.3.5 There are a number of community facilities located to the south of the site, including a Scout hut which is regularly used by a mums and toddlers group, an educational music facility, and a prayer and meditation centre.

8.3.6 Given the requirement to use road transport to remove excavated materials from this site, the use of this location for a main tunnel reception site may cause some further impacts on the local community due to increased road traffic in the area.

8.3.7 In addition to the works on the Acton Park Estate site, a separate worksite will also be required on the Acton Storm Tanks site to intercept the CSO, and a connection culvert would need to be created to link the interception chamber to the main tunnel reception site. There are a large number of residential properties opposite and overlooking the eastern side of the Acton Storm Tanks site, and further properties in close proximity to the south and west. These properties may be impacted by the CSO interception works.

8.3.8 As it appears likely that around five business premises will be lost due to the construction and operational site requirements, a number of commercial businesses may need to be permanently relocated. This may impact on the business owners, employees and the local community. Given the commercial/industrial nature of much of the surrounding area, the need to locate a ventilation building and column on site should not impact on the local community.

9 Property assessment

9.1 Introduction

9.1.1 This report builds on the advantages and disadvantages in Table 2.3 and the assessment provides more up-to-date information.

9.2 Crown land and special land comments

9.2.1 We believe the land to be privately owned by an investor and let to a number of occupiers as office/business units, and therefore appears to be neither Crown nor special land. There should therefore be no procedural difficulty in acquiring the land, using compulsory purchase powers.

9.3 Land to be acquired

9.3.1 The site comprises an area known as the Acton Park Industrial Estate.

9.4 Property valuation comments

9.4.1 The units at Acton Park are let to a variety of occupiers and will provide a significant investment income to the freeholder, which would ultimately be reflected in a capital value for acquisition cost. Leaseholders may hold a lease commanding a value, depending on the nature of terms.
9.5 **Disturbance compensation comments**

9.5.1 As identified, the site contains a variety of business units and from this, we anticipate claims for business relocation and possible extinguishment. There is a risk that disturbance claims could be significant, although further investigation should be undertaken to fully understand the various business operations.

9.6 **Discretionary purchase costs comments**

9.6.1 The site is close to a residential area. However, the fact that work would be within normal working hours should significantly limit the potential for discretionary purchases.

9.7 **Offsite statutory compensation comments**

9.7.1 There should be limited potential for offsite statutory compensation under S.10 of the *Compulsory Purchase Act 1965*, as there is unlikely to be any physical interference with public or private rights.

9.7.2 There should also be limited potential for claims under the *Land Compensation Act 1973 Part 1*, as the completed works are unlikely to result in diminution in value.

9.8 **Site acquisition cost assessment**

9.8.1 The site acquisition costs are likely to be acceptable but at risk of being high, depending on lease terms and the nature of occupiers.

10 **Site conclusions by discipline**

10.1 **Introduction**

10.1.1 The conclusions presented in this section are drawn from each discipline’s assessment, and are designed to inform the workshop where a final conclusion is reached on whether the site can be taken forward as a potential preferred site, subject to its fit with possible drive strategies in the case of main tunnel sites.

10.2 **Engineering**

10.2.1 Site S03EG is considered **suitable** as a main tunnel reception site, as it would be of sufficient size and would have suitable access arrangements.

10.2.2 Site enabling works would require the demolition of the existing structures which currently occupy the site. CSO interception would be outside the site and would require a secondary satellite CSO site at C01YC Acton Storm Tanks. It is anticipated that a tunneled connection culvert would be required to convey flows from C01YC to S03EG.

10.3 **Planning**

10.3.1 This site is considered **less suitable** for use as a main tunnel reception site.
10.3.2 The site is within or in proximity to a number of planning and environmental policy designated areas and sensitive uses, such as residential properties, community facilities and public open spaces. Further investigation would be required to determine if the temporary loss of designated employment land and the relocation of a number of existing businesses would be acceptable. Appropriate mitigation to protect the amenity of residential dwellings and other sensitive community uses from construction impacts would be required.

10.4 Environment

10.4.1 Overall, the site is considered to be suitable as a main tunnel reception site, although mitigation would be required.

10.4.2 Based on current information, the site is considered suitable as a main tunnel reception site from the perspective of transport, archaeology, built heritage, townscape, water resources (hydrogeology and surface water), ecology, flood risk, air quality and noise.

10.4.3 The site is considered less suitable from the perspective of land quality.

10.4.4 Overall, the site is considered suitable, subject to further investigation of whether land quality impacts can be adequately mitigated. Likely mitigation considerations would include the following:

- Land quality – any required remediation of contamination (at this high risk site) and/or measures to ensure no mobilisation of contaminants retained in situ.

10.5 Socio-economic and community

10.5.1 The site appears less suitable from a community impacts perspective for use as a main tunnel reception site. The use of the site appears likely to require the demolition of around five commercial units, which could affect owners, employees and the local community. Also, a number of further business premises and residential properties within proximity to the site may also be affected by works in this area. There are also a number of residential properties in close proximity to the proposed CSO interception works.

10.5.2 Appropriate mitigation will be required for noise and visual disruption during construction to reduce the potential impacts on the neighbouring commercial and residential properties.

10.6 Property

10.6.1 This site is less suitable.

10.6.2 The advantages of the site are as follows:

- Limited advantages from a property perspective.

10.6.3 The disadvantages of the site are as follows:

- A large number of business occupiers that would be displaced
- Site adjoins residential properties.
10.7 **Next steps in the site selection process**

10.7.1 It should be noted at this point that the above conclusions do not represent an overall recommendation on the suitability of a site. The disciplines discuss their site suitability report conclusions at optioneering workshops, along with main tunnel drive strategy options. Main tunnel sites need to link together to form possible drive options for construction of the main tunnel. Therefore, a preferred site can only be identified through a series of main tunnel drive option comparisons. The outcome of this two-step process (sites and then drive option comparisons) is set out in the *Phase two scheme development report.*
Appendices
Appendix 1 – Sources of information

Engineering

- Traffic Management and Access Roads/Rail – URS Scott Wilson
- Services (Utilities) and Third Party Assets – Thames Tunnel and utility companies
- Geology – British Geological Society and Thames Tunnel
- Construction and Operational Layout Template – Thames Tunnel
- Site selection background technical paper – Thames Tunnel

Planning

- London Borough of Ealing online planning applications database
- Saved policies in the Ealing Unitary Development Plan, adopted in 2004
- Saved policies in the Hammersmith and Fulham Unitary Development Plan, adopted in 2003
- Ealing Development (or Core) Strategy, submission document, July 2011
- Hammersmith and Fulham Core Strategy, post submission amendments arising during examination, published May 2011

Environment

Transport

- Map of Transport for London Road Network (TLRN) – www.tfl.gov.uk
- Bus Route Maps: North-east, north-west, south-west, south-east – www.tfl.gov.uk
- Crossrail Plans – www.crossrail.co.uk/crossrail-bill-documents
- PTAL scores – Obtained from Table 2.3 information
- Thames Path map – www.walklondon.org.uk
- Capital Ring – www.walklondon.org.uk
- Cycle Routes – www.sustrans.org.uk and Local Cycling Guides 1-14
- Design Manual for Roads and Bridge TD 42/95, Highways Agency

Archaeology

- Historic Environment data from Greater London Archaeology Advisory Service (GLAAS)
- National Monuments Record – for some additional information regarding registered historic parks and gardens
- London Archaeological Archive and Research Centre (LAARC)
- Local authority websites
- Bing maps

**Built heritage and townscape**
- Local authority lists of Locally Listed Buildings
- National Monuments Record – for some additional information regarding registered historic parks and gardens
- Unitary development plan and DPDs
- Local authority websites
- Bing maps

**Water resources – hydrogeology and surface water**
- Local authority details of unlicensed abstractors
- Environment Agency abstraction licence details
- Environment Agency groundwater levels and contour maps (2009-11)
- Environment Agency water quality (surface water and groundwater)
- Environment Agency Groundwater Source Protection Zones
- Envirocheck
- British Geological Survey (BGS) logs
- BGS 1:50,000 Geological Sheets – Solid and Drift Editions (England and Wales)
- BGS Geology of London – Special Memoir for 1:50,000 Geological sheets 256 (North London), 257 (Romford), 270 (South London) and 271 (Dartford) (England and Wales)
- Crossrail (2005) – Assessment of Water Impacts Technical Report: Appendix C – Baseline Data. Figure C.4: Extent of Saline Intrusion based on 177 mg/l *5mmol/l) Isochlor

**Ecology**
- Multi-Agency Geographic Information for the Countryside (MAGIC) – www.magic.gov.uk - statutory designated sites
- London Wildweb – wildweb.london.gov.uk - non-statutory site of importance for nature conservation
• National Biodiversity Network – http://searchnbn.net - distribution of protected species
• Google Maps – aerial views of habitat features
• BAP habitats – www.natureonthemap.org.uk
• Priority habitats and species on national and local scales – www.ukbap.org.uk

Flood risk
• Environment Agency Flood Map – www.environment-agency.gov.uk
• Environment Agency National Flood and Coastal Defence Database
• Envirocheck

Air quality
• Local authority websites
• London Air Quality Network – www.londonair.org.uk
• Defra UK-AIR, air quality information resource – www.airquality.co.uk
• Defra Air Quality Management Areas – http://aqma.defra.gov.uk
• Defra Local Air Quality Management – http://laqm.defra.gov.uk

Noise
• Envirocheck – Identification of receptors
• Promap – Calculation of distances between site and receptors
• Multimap – Aerial photography – www.multimap.co.uk
• Defra noise maps – Identification of existing noise levels

Land quality
• Google Maps/Earth
• Site walkover information
• Envirocheck Data Sheets provided as a GIS Database
• British Geological Survey (BGS) logs

Socio-economic and community
• Statistics from the Office of National Statistics 2001 Census data
• Ealing Community Network www.ealingnetwork.org.uk/index.php?nuc=eweb&id=34
Property

- Promap, Ordnance Survey and A-Z mapping
- Multimap/Google Earth aerial/satellite photographs
- Mouchel referencing
Appendix 2 – Site location plan
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
Appendix 3 – Planning and environment plans
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
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Appendix 4 – Photographs of the site and surroundings
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
Acton Park Industrial Estate, looking north across the site.

Looking across the site to the west. The industrial units are located to the bottom of the image.
View looking north from the southern boundary of the Acton Storm Tanks site.
Appendix 5 – Transport plan
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.

Title: APPENDIX 5
TRANSPORT PLAN
S03EG SITE
Appendix 6 – Services and geology plan
Appendix 7 – Construction phase layout
SITE SUITABILITY REPORT

The Point, 7th Floor,

BASED ON PRELIMINARY ASSESSMENT.

SHOULD NOT BE TAKEN TO MEAN THAT SUCH SITE WILL BE SHORTLIST OF CONSTRUCTION SITES FOR THE PROPOSED STAKEHOLDERS, MAY BE CONFIRMED AS BEING ON THE RIGHT 2011. ALL RIGHTS RESERVED ORDNANCE SURVEY LICENCE 1:5000

SITE SUITABILITY REPORT

CONSTRUCTION PHASE LAYOUT:

S03EG - MAIN RECEPTION SITE WITH CSO

CURRICLE

DRAWING

THAMES TUNNEL

SITES SUITABILITY REPORT

CONSTRUCTION PHASE LAYOUT:

S03EG - CIVIC - MAIN RECEPTION SITE WITH CSO

100-DL-PNC-S03EG-140102 7.100 A1
Appendix 8 – Operational phase layout
The Point, 7th Floor,
37 North Wharf Road,
Paddington, London W2 1AF

VENTILATION BUILDING (SHAFTS)

VENTILATION TOWER (SHAFTS)

DIAGRAMMATIC REPRESENTATION OF TOP STRUCTURE ABOVE MAIN AND INTERMEDIATE SHAFTS.
### Transport

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to road network</td>
<td>Construction site access and egress located on Stanley Gardens, utilising existing emergency accesses to the Acton Park Industrial Estate. The access and egress route from/to the TLRN (A40) would use Old Oak Road and The Vale (A4020). The access route would then use Warple Way, Canham Road and Stanley Gardens to access the site. Warple Way between The Vale and Canham Road is one-way southbound, is approximately 7.5 metres wide and features parking on both sides, reducing the effective width to 3.5m. To enable one-way access by HGVs, some on-street parking will require removal. A tight bend is located at the junction of Canham Road and Stanley Gardens. Large HGVs such as articulated vehicles may be unable to manoeuvre around this bend. Therefore, some widening works may be required in the north-western corner of the Storm Tanks site to enable large HGVs to egress the site. Both Canham Road and Stanley Gardens feature on-street parking. Canham Road features parking on one-side, while Stanley Gardens features parking on both sides. On both roads, this reduces the effective carriageway width to 3.5 metres. Some on-street parking would therefore require removal to enable one-way access by HGVs. Access route via Warple Way/Stanley Gardens is 1.8km. Permanent access to the site is via an existing emergency access on Stanley Gardens. A preliminary transport access plan is attached as Appendix 5.</td>
<td>Construction site access and egress located on Stanley Gardens. Access route via Warple Way and Stanley Gardens. Parking would require removal on Warple Way, Canham Road and Stanley Gardens to enable access. Some localised widening may be required at the western end of Canham Road to enable access for HGVs.</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Access to river</td>
<td>River access is not essential as excavated material will be transported to a main site by road.</td>
<td>River access is not essential as excavated material will be transported to a main site by road.</td>
</tr>
<tr>
<td>Access to rail</td>
<td>Use of rail is unlikely to be feasible due to the small quantities of excavated material produced. Route to rail access point at Barnes Bridge uses the route to The Vale, then continues west along The Vale to Gunnersby Lane (A4000) before joining the North Circular (A406). The route then uses the A4 and the A316. The route then follows a narrow, traffic-calmed (speed humps) road, requiring the removal of speed humps for construction vehicle use. Creation of a siding by Barnes Bridge would require further investigation. Distance is 9.3km to rail access point from the site.</td>
<td>Access from site to TLRN restricted, as discussed above. No restrictions on TLRN. Creation of a rail siding at Barnes Bridge is possible. However, further investigation is required.</td>
</tr>
<tr>
<td>Parking</td>
<td>Parking is potentially available on site. No parking available on Stanley Gardens as some of the spaces will require removal to enable access, which puts further demand on the remaining parking.</td>
<td>Limited parking available on site and no parking off site.</td>
</tr>
<tr>
<td>Public transport accessibility</td>
<td>PTAL 1-2 (low), as identified within Table 2.3.</td>
<td>PTAL least suitable. Public transport access issues for workforce. Workforce transport could be provided.</td>
</tr>
<tr>
<td>Traffic management</td>
<td>To enable access parking on Warple Way, Canham Road and Stanley Gardens will require partial removal. A preliminary transport management plan is attached as Appendix 5.</td>
<td>Parking on Warple Way, Canham Road and Stanley Gardens requires removal.</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

**Summary:** The site is considered suitable as a main tunnel reception site. Despite the access route being constrained, the site is only likely to generate a small amount of HGV movements. The use of rail may not be feasible due to the small quantities of excavated material produced by a reception site. Should the quantities be sufficient for rail transport, the potential for the construction of rail sidings at Barnes Bridge would require further investigation. In order to enable road access for construction vehicles, some parking will require removal on Warple Way, Canham Road and Stanley Gardens. Some localised widening at the western end of Canham Road may also be required. There is limited potential for the workforce to access the site by public transport, although some onsite parking would potentially be available.
## Archaeology

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designations, including archaeological priority areas</td>
<td>No designations within the site boundary.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Summary of historical uses</td>
<td>During the late 1800s, the site was occupied by an orchard to the south and probable farm buildings located immediately to the north and west. In 1896, a NNW-SSE orientated street of terraced housing (Stanley Gardens) was established. The proposed shaft site is located where the buildings were located. These may have been cellared, the construction of which is likely to have disturbed any earlier remains. By 1910, a large factory had been built on the east side of Stanley Street, and to the west, a large factory labelled ‘Motor Car Engineering Works’. The site is currently occupied by car parking for a modern factory building.</td>
<td>A detailed desk-based assessment is required to sufficiently understand the archaeological resource and define risk to potential development.</td>
</tr>
<tr>
<td>Potential receptors of very high or high value with the potential to be directly affected</td>
<td>No archaeological receptors are recorded within the area of the site. This does not preclude the possibility of unrecorded archaeological receptors of high value being present.</td>
<td>A detailed desk-based assessment is required to sufficiently understand the archaeological resource and define risk to potential development.</td>
</tr>
<tr>
<td>Potential receptors of medium value with the potential to be directly affected</td>
<td>No archaeological receptors are recorded within the area of the site. This does not preclude the possibility of unrecorded archaeological receptors of medium value being present within the site.</td>
<td>A detailed desk-based assessment is required to assess development impacts.</td>
</tr>
<tr>
<td>Other receptors with the potential to be directly affected</td>
<td>The dewatering of adjacent waterlogged deposits is unlikely to be an issue, given the location of the site some distance from the Thames.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>
## Archaeology

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<thead>
<tr>
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<tbody>
<tr>
<td>Extent of existing disturbance (if known)</td>
<td>The construction of the existing factory buildings and former Victorian terracing and associated services is likely to have adversely impacted any in situ archaeological deposits.</td>
<td>A detailed desk-based assessment is required to sufficiently understand the archaeological resource and define risk to potential development.</td>
</tr>
</tbody>
</table>
| Potential issues | Detailed design proposals and an outline method statement will be required to enable initial assessment of development impacts, and to inform mitigation proposals. The information currently available indicates that, due to previous disturbance within the site, the archaeological risk is low. However, further desk-based assessment is required to determine this. | Mitigation methods could include:  
- desk based assessment  
- production of deposits model  
- archaeological monitoring of geotechnical investigations  
- archaeological evaluation  
- archaeological watching brief  
- archaeological excavation. |

**Summary:** On the basis of the information currently available, the site is suitable as a main tunnel reception site as the archaeological risk is likely to be low to medium. No records of archaeological receptors within the site have been identified at this stage, and the site has been subjected to disturbance by modern development. Available geotechnical information suggests that deeply stratified deposits and waterlogged deposits are unlikely to be present. Further desk-based assessment would be required to confirm the above, should this site be progressed.
<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designations including conservation areas, including trees</td>
<td><strong>Listed buildings</strong>&lt;br&gt;There are no listed buildings within 250m.&lt;br&gt;&lt;br&gt;<strong>Locally listed buildings</strong>&lt;br&gt;Although the London Borough of Ealing maintains a list of locally listed buildings, this data was not available at the time of this assessment.&lt;br&gt;There are no locally listed buildings within 250m of the site and within the borough of Ealing.&lt;br&gt;&lt;br&gt;<strong>Conservation areas</strong>&lt;br&gt;Ravenscourt and Starch Green Conservation area, 10m&lt;br&gt;Bedford Park Conservation Area, 146m&lt;br&gt;<strong>Registered historic parks and gardens</strong>&lt;br&gt;There are no registered historic parks and gardens within 250m of the site.&lt;br&gt;<strong>Locally listed parks and gardens</strong>&lt;br&gt;There are no locally listed parks and gardens within 250m of the site.&lt;br&gt;&lt;br&gt;<strong>Protected views</strong>&lt;br&gt;Information on protected views is not currently available for the boroughs of Hammersmith and Fulham, Hounslow or Ealing.</td>
<td>In the case of two conservation areas, a high-quality scheme design and/or adequate screening for the development will be required.&lt;br&gt;A detailed desk-based assessment, in conjunction with archaeology work, may be required to inform likely development impact and to determine more detailed mitigation proposals.</td>
</tr>
<tr>
<td>Potential receptors of medium to very high importance with the potential to be directly affected</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Other receptors of lesser importance with the potential to be <strong>directly</strong> affected</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Potential receptors of medium to very high importance with the potential to be <strong>indirectly</strong> affected</td>
<td>There is potential for two conservation areas to experience an indirect impact on its setting as a result of the development.</td>
<td>There is no visual relationship between the site and the Bedford Park Conservation Area and, as such, no mitigation is required. There is potential for the setting of the Ravenscourt and Starch Green Conservation Area to be impacted by development. As such, adequate screening may be required to mitigate any negative visual impact on the area.</td>
</tr>
<tr>
<td>Other receptors of lesser importance with the potential to be <strong>indirectly</strong> affected</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Sensitive landscape character areas likely to be affected, including trees and TPOs</td>
<td>Site is on part of Acton Park Industrial Estate and consists of warehouse-style industrial buildings, car parks and landscaped areas. The site fronts Stanley Gardens to the east, with semi-mature trees and shrubs lining the road. Buildings are separated from the road by car parking, opening up the streetscape of Stanley Gardens. The industrial estate encloses the site. Beyond the estate to the north is The Vale road and Acton Park area of open space. Residential areas are to the south of the industrial estate off Hatfield Road.</td>
<td>Retention of trees where possible and protection in accordance with BS 5837. Introduction of landscape scheme to include appropriate surface treatments and planting to relate to adjacent buildings of the industrial estate and street frontage. This site is suitable since its character is industrial in nature and relatively open. During construction, the potential loss of vegetation and estate buildings, and the presence and operation of machinery, materials stores and buildings on site would impact the character of the site. The</td>
</tr>
</tbody>
</table>
### Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The presence and operation of machinery, materials stores and buildings would result in temporary, adverse direct impacts on the character of the site and temporary, adverse indirect impacts on neighbouring areas.</td>
<td></td>
<td>careful design of permanent elements could result in it being incorporated into the industrial estate.</td>
</tr>
<tr>
<td>Potential views likely to be affected</td>
<td>Views into the site from Stanley Gardens and adjacent buildings on the industrial estate. The relatively open views through the estate show a mix of warehouse-style buildings, car parking and landscaped areas. The presence and operation of machinery, materials stores and buildings would result in temporary, adverse direct impacts on the views of the site.</td>
<td>During construction, use of hoardings and appropriate lighting to reduce visual intrusion. Design of permanent structures to be given careful consideration to integrate with industrial estate. Adequate new planting to screen permanent plant from Stanley Gardens in order to protect visual amenity. This site is suitable with appropriate mitigation.</td>
</tr>
<tr>
<td>Particular considerations on sites where new permanent structures are required</td>
<td>The indirect impact of permanent structures on the Bedford Park and Ravenscourt and Starch Green conservation areas will need to be carefully considered.</td>
<td>The structures should be of a high-quality design to ensure they do not detract from the character or appearance of the adjacent conservation areas, their setting, or views to and from them.</td>
</tr>
<tr>
<td>Potential issues</td>
<td>There are two built heritage receptors within 250 metres of the development site. The Ravenscourt and Starch Green Conservation Area may experience an indirect impact from the scheme. There is the potential to mitigate any adverse impacts through screening and/or a high-quality scheme design.</td>
<td>Owing to the existing screening, it is unlikely that the Bedford Park Conservation Area will experience a significant impact on its setting. However, in the case of the Ravenscourt and Starch Green Conservation Area, there may be an indirect impact, in which case, adequate screening will be required to mitigate any negative impact on the setting of the area.</td>
</tr>
</tbody>
</table>
## Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
</table>

**Summary:** This site is considered suitable as a main tunnel reception site as the impact on built heritage receptors is likely to be minimal, and the industrial nature of the site means that it is judged to be of relatively low sensitivity. There are two receptors of medium importance (Bedford Park and Ravenscourt and Starch Green conservation areas) that may potentially be indirectly impacted on. Mitigation in the form of a high-quality scheme design, landscape design and screening would reduce any adverse impacts arising from the scheme.

In terms of townscape impacts, the site is considered to be suitable as a main tunnel reception site as its existing character is industrial and open. During construction, the potential loss of vegetation and buildings, and the presence and operation of machinery, materials stores and buildings on site would impact on the character of the site and local views. Permanent elements are likely to be incorporated into the industrial estate and will only have a minimal impact.
## Water resources – hydrogeology and surface water

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
</table>
| Hydrogeological conditions (groundwater) From BGS Geological Model, giving average ground condition profile. Local near surface conditions may vary, particularly within the river. | Geology (thickness)  
- Superficial geology and made ground (2m)  
- London Clay (44m)  
- Lambeth Group (15m)  
- Thanet Sand (9m)  

**Hydrogeology**  
- Piezometric level in Chalk aquifer: ~ -32mAOE (~ 34mbgl) from EA Jan 08 water level contouring.  

**Groundwater monitoring location**  
- EA hydrometry sites:  
  No hydrometry site nearby.  
| | | The main tunnel reception shaft will be constructed to an invert level of approximately 25.8mbgl and therefore the shaft will be founded in the London Clay. Piezometric head in the Chalk is approximately 8.2m below the base of the construction. Therefore, there is no potential issue in terms of geotechnical design. |
| SPZs and groundwater users | SPZ  
- Not located in a source protection zone defined by EA.  

**EA licensed groundwater abstractions and details**  
- No public water supply  
- Five licensed abstraction boreholes within 2km radius.  

Licence numbers:  
1. 28/39/39/0230 (3 boreholes)  
2. 28/39/39/0197 (2 boreholes)  

Locations:  
1. 1.1km northeast of the site  
2. 1.7km southwest of the site  
| | | A simple volumetric approach has been used to calculate the total capture zone of the abstraction borehole. A conservative mean annual recharge of 100mm/year was used to calculate a radius for licensed abstraction boreholes as follows:  
1. 225m  
2. 103m  

As a result, the shaft will not be located within either of these catchment areas. |
## Water resources – hydrogeology and surface water

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. London &amp; Quadrant Housing Trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Chiswick Park Estate Management Ltd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstracted aquifer unit:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Chalk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gravel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstraction purposes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Industrial, commercial and public service (non-evaporative cooling, drinking, cooking, sanitary, washing)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Industrial, commercial and public service (business park – spray irrigation, make-up or top-up water)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstraction quantity (annual):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. 63,500m(^3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. 13,325m(^3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local authorities (LA) unlicensed groundwater abstractions and details</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• No abstraction borehole within 1 km radius.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground source heat pump scheme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• One planning application for GSHP to 250m southeast of the site within 1 km radius.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borehole locations and depths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are no borehole records of historical water wells within a 1 km radius.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Water resources – hydrogeology and surface water

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential impacts on surface water features</td>
<td>The site is located approximately 1.8km away from the Thames. There are roads and buildings between the site and the river so there is no direct overland pathway to the Thames.</td>
<td>Work needs to be undertaken in consideration of Pollution Prevention Guidelines – PPG1, PPG5 and PPS23.</td>
</tr>
<tr>
<td>Potential impacts on groundwater (resources and quality)</td>
<td>No impact on groundwater at depth is likely since the shaft is to be constructed in London Clay (unproductive strata). At shallow depth, the shaft is located in Langley Silt, which is classified as unproductive strata, so no impact is expected.</td>
<td>See below (likely types of mitigation measures that will be required).</td>
</tr>
<tr>
<td>Likely types of mitigation measures that will be required</td>
<td>No mitigation required if groundwater is not impacted.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Potential issues</td>
<td>No further issues.</td>
<td>No mitigation required.</td>
</tr>
</tbody>
</table>

**Summary:** In terms of hydrogeology, this site is considered suitable as a main tunnel reception site because the shaft is to be constructed in London Clay (unproductive strata). No impact on the Chalk aquifer is expected. The superficial deposits at the site are Langley Silt, which is classified as unproductive strata at the site. Therefore, no impact is expected at shallow depth.

In terms of surface water resources, this site is considered suitable as a main tunnel reception site because there is no direct pathway for pollution to the River Thames. However, standard mitigation would be required.
# Ecology (terrestrial and aquatic)

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Statutory designations</strong></td>
<td>There are two local nature reserves (LNRs) within 2km of the site. These are: Wormwood Scrubs located 1.6km northwest at OS grid reference TQ 221 813. Gunnersbury Triangle located 1.85km southwest at OS grid reference TQ 201 786.</td>
<td>None required</td>
</tr>
<tr>
<td><strong>Non-statutory designated wildlife sites</strong></td>
<td>There are two sites of importance for nature conservation within close proximity to the site. These are Southfields Recreation Ground Nature Area and Acton park Nature Conservation Area. These are located within 0.5km of the site.</td>
<td>None required</td>
</tr>
<tr>
<td><strong>BAP priority habitats</strong></td>
<td>There are no BAP habitats within this site. However, the London BAP does note built structures as habitats of interest.</td>
<td>No specific guidance, however the London BAP recommends that developers think about biodiversity when constructing new structures by installing species-friendly features.</td>
</tr>
<tr>
<td><strong>Protected or otherwise notable species within the study area</strong></td>
<td>The site may have the potential to support breeding birds and roosting bats within the existing buildings. Due to the lack of vegetative habitat, the breeding bird issue is largely reduced but species such as redstart may be present, depending on the condition of the buildings. If bat roosts were found to be present, mitigation would be required for any buildings to be affected by works, possibly including offsite provision. Careful placement of lighting to minimise illumination of surrounding habitat is likely to be required. If suitable breeding bird habitat is identified on the site, any clearance works would require a precheck by a suitably qualified ecologist within 24hours prior to clearance.</td>
<td></td>
</tr>
<tr>
<td><strong>Potential issues</strong></td>
<td>No other issues</td>
<td>No other issues</td>
</tr>
</tbody>
</table>
### Ecology (terrestrial and aquatic)

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
</table>

**Summary:** This site is suitable as a main tunnel reception site and may require only basic ecological surveys if selected. Should notable or protected species be present, it is likely that some limited habitat mitigation or compensation would be required.
### Flood risk assessment

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood risk zone</td>
<td>Flood Zone 1 (greater than one in 1,000-year flood extent). Sewage transmission infrastructure is considered to be water compatible according to Table D.2 of PPS25.</td>
<td>An FRA would be required to assess the residual risk of flooding to the site.</td>
</tr>
<tr>
<td>Assessment of conditions for SUDS</td>
<td>There is space on site for SUDS. However, existing buildings on site may cause issues with the use of SUDS. The superficial geology on site is silty clay and, as such, further investigation on site is required to assess the suitability for infiltration SUDS.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Potential issues</td>
<td>No other issues</td>
<td>No other issues</td>
</tr>
</tbody>
</table>

**Summary:** This site is suitable as a main tunnel reception site because although there may be constraints on SUDS due to space and suitability for infiltration, the site lies in Flood Zone 1 (greater than one in 1,000-year flood extent).
### Air quality

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQMA</td>
<td>The air quality objective for NO₂ is exceeded on major roads in the vicinity of the site.</td>
<td>There is a need for more site specific data.</td>
</tr>
<tr>
<td>Sensitive receptors</td>
<td>There are residential properties along the access route to/from the TLRN (A40) along Old Oak Road and The Vale (A4020). There are also residential properties on Warple Way. There are residential properties within 100m of the proposed site on The Vale.</td>
<td>There are relevant air quality sensitive receptors present along the route construction traffic is likely to take and close to the proposed construction works.</td>
</tr>
<tr>
<td>Existing traffic issues</td>
<td>The main traffic issue in this area is exhaust emissions from vehicles along the A40 and A4020 corridors.</td>
<td>Additional vehicle emissions have a low potential to interfere with local air quality action plan policies.</td>
</tr>
<tr>
<td>Existing sources of significant air pollutants</td>
<td>See above</td>
<td>See above</td>
</tr>
<tr>
<td>Notable gaps in existing air quality monitoring</td>
<td>There is no data available at the likely access to A40 and the nearest existing data indicates existing AQLV exceeded.</td>
<td>Collect a minimum of 6 months diffusion tube data at site access to the A40 or other point of access to major road network.</td>
</tr>
<tr>
<td>Potential issues</td>
<td>The risk from additional exhaust emissions from construction HGVs is undefined at present. The risk from dust impacts is low.</td>
<td>Minimise HGV movements on the local road network during the peak hour. Standard dust control measures will minimise the effect of fugitive dust on nearby sensitive receptors.</td>
</tr>
</tbody>
</table>

**Summary:** This site is suitable for use as a main tunnel reception site. There is a low potential for fugitive emissions of dust during construction to have a perceptible impact at residential receptors closest to the site. However, these impacts can be minimised with standard dust control measures. There is potential for HGV movements on the local road network to cause localised air quality impacts. However, this can be somewhat mitigated by minimising the movement of HGVs during peak hours.
## Noise

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise band level (from Defra noise maps)</td>
<td>Information from Defra noise maps indicates daytime noise levels of less than 58dB $L_{Aeq}$ and night-time noise levels of less than 50dB $L_{Aeq}$ at the rear facades of residential properties on The Vale (located to the north), Valetta Road (located to the east) and Hatfield Road (located to the south). Noise levels from the Defra noise maps provide an indication of prevailing noise levels only, and will not be employed in any detailed assessments for chosen sites.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Sensitive receptors</td>
<td>Sensitive receptors located on The Vale to the northeast consist of four-storey buildings, with retail on the ground floor and residential dwellings above. These are located approximately 75m from the site boundary and 75m from the shaft location. Sensitive receptors to the east, on Warple Way/Valetta Road, consist of two-storey dwellings. These are located approximately 135m from the site boundary and 180m from the shaft location. Sensitive receptors to the south on Hatfield Road consist of two-storey residential properties. These are located approximately 135m from the site boundary and 190m from the shaft location. Between the proposed site location and the nearest receptors, there are existing properties which will provide some shielding from construction works. The proposed access route to the site is for vehicles to enter the site from The Vale down Warple Way, Canham Road and Stanley Gardens, and exit the site onto</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
### Noise

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing traffic issues</strong></td>
<td>Stanley Gardens, onto The Vale. This route contains a number of noise-sensitive properties, and these receptors may be considerably affected by HGV traffic.</td>
<td></td>
</tr>
<tr>
<td><strong>Existing sources of significant noise emissions</strong></td>
<td>Local road traffic, coupled with more distant road traffic on the A4020 to the north, will contribute to the local noise climate in the area.</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Potential issues</strong></td>
<td><strong>Construction:</strong> The construction period is estimated at six to seven years and working hours will be 12 hours a day (7am – 7pm), Monday to Saturday. This has the potential to result in adverse noise impacts on the sensitive receptors surrounding the site; in particular, those located on the access route to the site. A relatively high number of daily HGV movements are anticipated, and this has the potential to result in adverse noise impacts to noise-sensitive properties located along the haul route. The site is relatively large and while the shaft location may be fixed, ancillary plant should be sited as far as is practicable from surrounding sensitive receptors. Proposed 3m site boundary fencing</td>
<td>Adherence to the good site practices provided in BS5228. Siting of noisy equipment and construction activities as far as is practicable from sensitive receptors. Provision of site boundary noise fences.</td>
</tr>
</tbody>
</table>
### Noise

<table>
<thead>
<tr>
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<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>will provide useful noise mitigation to some plant and construction activities. Vibration resulting from general construction works is not anticipated to result in an adverse impact. The nearest receptors to the proposed shaft location are at a distance of approximately 75m, and it is unlikely that vibration levels from shaft sinking will give rise to cosmetic building damage. However, vibration levels may cause annoyance. Vibration from tunnelling should be considered on a case-by-case basis at particular sensitive locations <strong>Operation:</strong> With appropriate attenuation (if necessary), there is no reason why noise from the ventilation column and top chamber should result in adverse noise impacts to nearby sensitive receptors.</td>
<td></td>
</tr>
</tbody>
</table>

**Summary:** This site is suitable as a main tunnel reception site. Although residential receptors are located close to the site, existing buildings should provide shielding from most construction works. However, the number of vehicles associated with the construction phase and their access routes (close to residential areas) has the potential to cause disturbance to properties lining those access routes.
<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Land quality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site location</strong></td>
<td><strong>Grid reference:</strong> 521019, 179940</td>
</tr>
<tr>
<td><strong>Current site use</strong></td>
<td>The site is part of Acton Park Industrial Estate and comprises four industrial units.</td>
</tr>
<tr>
<td><strong>Topography</strong></td>
<td>No site visit has been undertaken by a land quality specialist at this stage.</td>
</tr>
<tr>
<td><strong>Field evidence of contamination (ie, visual/olfactory)</strong></td>
<td>No site visit has been undertaken by a land quality specialist at this stage.</td>
</tr>
</tbody>
</table>
| **Current surrounding land use (immediately adjacent to site)** | Aerial images show:  
  **North:** Acton Park Industrial Estate and beyond Acton Park.  
  **East:** Warehouses and a works.  
  **South:** Acton Park Industrial Estate and beyond residential properties.  
  **West:** Acton Park Industrial Estate. |
| **Geological and hydrogeological information**           |                                                                               |
| **Geological strata**                                    | • Superficial geology and made ground (2m)  
  • London Clay (44m)  
  • Lambeth Group (15m)  
  • Thanet Sand (9m) |
| **Underlying aquifer classes**                           | **Unproductive strata:** London Clay  
  **Secondary Aquifer:** River terrace deposits, Lambeth Group, Thanet Sand  
  **Principal Aquifer:** Chalk |
| **Groundwater vulnerability/Soil classification**        | River terrace deposits – minor aquifer  
  High leaching potential of soils (U)² |
| **Source protection zone details**                       | Not located in a source protection zone defined by EA |
| **Surface water receptor**                               | None |
| **Relevant information within a 250m radius of the site**|                                                                               |
| **Historical potentially contaminating activities**      | **On site**  
  • Open land, 1862-1895  
  • Residential properties (east site boundary), 1896-1976 |
## Site considerations (based on mapping data)

- Motor car engineering works, 1909-1934
- Engineering works, 1932-1972
- Acton Park Industrial Estate, 1976-present
- Electrical substation, present

### Off site

- Store (15m east), 1947-1972
- Soap works (15m east), 1932-1972
- Engineering works (17m southeast), 1932-1947
- Diesel engineering works (17m southeast), 1947-1972
- Electrical substation (closest located 25m north), 1973
- Engineering works (45m southeast), 1909-1920
- Dyes and cleaning works (52m west) 1910–1960
- Motor car repairing works and garage (56m east), 1909-1947
- Motor coach works (63m east), 1932-1947
- Automobile body and pressed steel works (65m east), 1947-1972
- North and southwest junction of the Hammersmith branch railway (95m southeast), 1868-1967
- Corrugated paper works (140m southeast), 1909-1920
- Printing works (180m west), 1947-1972
- Carriage factory (195m east), 1909-1920
- Sewage disposal works/pumping station (205m southeast), 1896-present
- Electrical engineering works (235m southeast), 1947-1972

## Land quality

---

<table>
<thead>
<tr>
<th>Pollution incidents to controlled waters</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landfill sites</td>
<td>None</td>
</tr>
<tr>
<td>Other waste sites</td>
<td>None</td>
</tr>
<tr>
<td>Registered radioactive substances</td>
<td>None</td>
</tr>
</tbody>
</table>
| Fuel stations/depots                    | One fuel station
  - Total, open (75m northwest) |
| Contemporary trade directory entries    | Ten
  - Confectionary manufacturers, active (on site) |
<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Land quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lithographic plate makers, inactive (20m east)</td>
<td></td>
</tr>
<tr>
<td>• T shirt manufacturers, inactive (24m east)</td>
<td></td>
</tr>
<tr>
<td>• Television and video manufacturers and wholesalers, inactive (31m north)</td>
<td></td>
</tr>
<tr>
<td>• Scientific apparatus and instrument manufacture, active (34m west)</td>
<td></td>
</tr>
<tr>
<td>• Engineers – general, inactive (34m west)</td>
<td></td>
</tr>
<tr>
<td>• Commercial cleaning services, inactive (44m northwest)</td>
<td></td>
</tr>
<tr>
<td>• Cleaning services – domestic, inactive (44m northwest)</td>
<td></td>
</tr>
<tr>
<td>• Leisure and sportswear manufacture and wholesalers, inactive (44m northwest)</td>
<td></td>
</tr>
<tr>
<td>• Mortar manufacturers, inactive (59m east)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site classification based on above information</th>
<th>Activity</th>
<th>Distance and direction to site</th>
<th>Contaminants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potential site contaminants derived from surface sources (eg, contaminants in made ground)</strong></td>
<td>1) Some potential for made ground from potential filling operations during development</td>
<td>1) On site and directly adjacent to site</td>
<td>1) Metals, TPH, PAHs</td>
</tr>
<tr>
<td></td>
<td>2) Motor engineering works</td>
<td>2) On site and directly adjacent to site</td>
<td>2) Metals, TPH, PAHs</td>
</tr>
<tr>
<td></td>
<td>3) Engineering works</td>
<td>3) On site and directly adjacent to site</td>
<td>3) Metals, TPH, PAHs</td>
</tr>
<tr>
<td></td>
<td>4) Industrial estate</td>
<td>4) On site and directly adjacent to site</td>
<td>4) Metals, TPH, PAHs</td>
</tr>
<tr>
<td></td>
<td>5) Electrical substation</td>
<td>5) On site</td>
<td>5) PCBs</td>
</tr>
<tr>
<td><strong>Potential site contaminants derived from offsite sources and transported to site</strong></td>
<td>1) Soap works</td>
<td>1) 15m east</td>
<td>1) Metals, TPH, PAHs</td>
</tr>
<tr>
<td></td>
<td>2) Diesel engineering works</td>
<td>2) 17m east</td>
<td>2) Metals, TPH, PAHs</td>
</tr>
<tr>
<td></td>
<td>3) Engineering works</td>
<td>3) 17m east</td>
<td>3) Metals, TPH, PAHs</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Land quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Potential contamination pathways to site (Conceptual Site Model) | Source 1: A1, A2, A3, B4  
Source 2: E1, F7 |
| Contamination category | Category 3 – assessed as high risk |

**Summary:** The site is less suitable as a main tunnel reception site, based on the high potential for contamination to have occurred from the onsite engineering works and industrial estate, and from offsite activities to have impacted shallow groundwater which may have migrated beneath the site. The identified sources of contamination may impact onsite workers and adjacent human receptors through direct contact/vapour inhalation exposure pathways.

**Notes:**
1. From BGS Geological Model, giving average ground condition profile. Local near surface conditions may vary, particularly within the river.
2. Soil information for urban areas is based on fewer observations than elsewhere in the country. Therefore, a worst case vulnerability (H) is assumed until proven otherwise.
3. Refer to schematic Conceptual Site Model for explanation of site-specific source-pathway-receptors.
Contacts

For information about the Thames Tideway Tunnel

Call: 0800 0721 086 Lines are open 24 hours a day
Visit: www.thamestidewaytunnel.co.uk
Email: info@tidewaytunnels.co.uk

For our language interpretation service call 0800 0721 086

For information in Braille or large print call 0800 0721 086

For information about acceptance of our application and the examination process please contact the Planning Inspectorate.

Call: 0303 444 5000
Visit: http://infrastructure.planningportal.gov.uk