13 Falconbrook Pumping Station

13.1 Introduction

13.1.1 This section of the non-technical summary presents the preliminary environmental assessment for the Thames Tunnel project at Falconbrook Pumping Station.

13.1.2 At this site it is proposed that the existing Falconbrook Pumping Station combined sewer overflow would be linked to the proposed Thames Tunnel through a shaft and an underground connection tunnel. Currently the combined sewer overflow discharges approximately 40 times a year. The total volume is approximately 708,900m³ each year.

13.1.3 In the following section a description of the existing site is given. This is followed by a description of the development proposed at this site.

13.1.4 The environmental topics which have been assessed for this site are listed in the ‘Assessment’ section (13.4). Preliminary assessment findings are then presented topic by topic.

13.2 Site context

13.2.1 The site is shown as site number 8 on Figure 28.1.

13.2.2 The site is located within the London Borough of Wandsworth (Figure 13.1). It is also close to the London Borough of Hammersmith and Fulham.

Figure 13.1 Falconbrook Pumping Station site location
13.2.3 The site is located on the western side of York Gardens, and includes the existing Thames Water Falconbrook Pumping Station, a disused toilet block and an area of hard surfaced public realm. Approximately 0.4 hectares is required for the temporary construction works. This is indicated by the red line shown on Figure 13.2. The area of land required for the permanent works would be substantially smaller than that required for construction.

13.2.4 The site is bounded to the north by York Gardens Adventure Playground. York Gardens sits to the east and south of the site, with York Gardens Library and Community Centre located to the south.

13.2.5 There is existing vehicular access to the east through York Gardens via an access road.

Figure 13.2 Aerial photograph of Falconbrook Pumping Station*

*Note: The red line boundary is approximate in this image

13.3 Proposed development

13.3.1 The proposal is to intercept the existing combined sewer overflow. With the Thames Tunnel in place, instead of untreated sewage discharging at current volumes directly into the River Thames, flows would be diverted into the proposed Thames Tunnel. For a typical year, this would reduce flows from the combined sewer overflow to an average of approximately 56,200 m³, over four spill events a year.

13.3.2 In order for this interception to be achieved, construction works at this site would take approximately three years. Trees and landscaping along the boundary line with York Road would be removed and also a disused toilet block and a building within the pumping station compound.
13.3.3 A shaft with an internal diameter of approximately 9m and approximately 40 metres deep would be constructed. From the base of this shaft there would be an underground connection tunnel which would join up with the main tunnel. Through an interception chamber, flows from the existing Falconbrook Pumping Station combined sewer overflow would be diverted into the connection tunnel and into the main tunnel, located deep under the Thames.

13.3.4 Most of the construction would take place from 8am to 6pm, Monday to Friday. Limited works may be required beyond these hours.

13.3.5 Two temporary vehicle access points off York Road are proposed during construction. This would avoid construction traffic accessing the site via the residential roads located to the east.

13.3.6 In order to manage and mitigate effects on the environment during construction, a Code of Construction Practice has been drafted. This sets out measures to be adhered to during the process of construction works.

13.3.7 Figure 13.3 shows an indicative plan of the construction works.

**Figure 13.3 Indicative plan of construction works for Falconbrook Pumping Station**

13.3.8 Once the works at this site have been built, a number of permanent features would remain (Figure 13.4). There would be an area of hardstanding to enable access into the shaft and tunnel for inspection and maintenance purposes. This would be publicly accessible, except during times of maintenance when it would be temporarily fenced off. Access for maintenance would be required every three to six months. Once every ten years more substantial maintenance work would be required. Access
would be via York Gardens. This frequency of maintenance would be in addition to that already associated with the existing pumping station.

13.3.9 The shaft and other below ground structures would be finished either at, or above, existing ground levels and localised landscaping would integrate levels across the site and create an area of public realm.

13.3.10 In terms of structures visible above ground, there would be a 4m high ventilation column within the publicly accessible space linked to the shaft. Most of the time, air would be drawn into the shaft and tunnel via the ventilation column and through louvres, to ensure that the air within the main tunnel is continuously circulated. From time to time when the tunnel is filling up, air may be expelled via odour filters and out through the ventilation column. The louvres and filters would be housed inside a vent structure inside the Pumping Station grounds, which would be 2.5 metres high.

13.3.11 The interception chamber would be vented through a vent column, approximately 6m high, located within the pumping station compound.

13.3.12 A chamber housing valve equipment to regulate flows within the tunnel would be finished approximately 1.5 metres above existing ground levels within the pumping station compound, and would be concrete clad. There would also be a kiosk housing control equipment, located within the existing pumping station building.

Figure 13.4 Falconbrook Pumping Station indicative plan of built development
13.4 **Assessment**

13.4.1 Based on the existing site and the works proposed, the following environmental topics have been included in the scope of this preliminary environmental assessment:

- a. Air quality and odour
- b. Ecology – aquatic and terrestrial
- c. Historic environment
- d. Land quality
- e. Noise and vibration
- f. Socio-economics
- g. Townscape and visual
- h. Transport
- i. Water resources (ground and surface)
- j. Flood risk

13.4.2 In the following sections, information about the preliminary assessment of each of these topics is presented.

13.4.3 As part of the assessment process, consideration has been given to known major developments that may change future environmental conditions. For this site consideration includes the Bridges Court Car Park residential development opposite the site, which it is assumed will be under construction during Thames Tunnel construction.

13.4.4 Further information on the topic specific methodology for conducting the assessment is given in section 4 of this non-technical summary.

13.5 **Air quality and odour**

13.5.1 The site is located within the London Borough of Wandsworth Air Quality Management Area. Local monitoring data indicates that there are currently exceedences of the air quality standards in the vicinity of the site. The nearest people who may be sensitive to the development are occupiers of nearby residential dwellings to the east and south of the site and future occupiers of the new residential development on the current Bridges Court Car Park. Other sensitive groups include users of York Gardens Library and Community Centre, York Gardens Adventure Playground, Battersea Chapel and Thames Christian College, and the occupiers of the commercial/office premises to the west of the site on York Road.

13.5.2 Based on this preliminary assessment, the overall effect on local air quality from construction road traffic and construction plant is likely to be minor adverse at the residential properties, Thames Christian College, York Gardens Library and Community Centre and Battersea Chapel, and negligible at the commercial/office premises, York Gardens and playground. In terms of construction dust, this is likely to have a minor adverse effect at York Gardens and the Library and Community Centre.
(within 10 metres of the site), and a negligible effect elsewhere, taking account of the dust control measures in the Code of Construction Practice.

13.5.3 Preliminary assessment findings indicate that the effect of odour due to release of air from the ventilation structure, which may occur from time to time when the tunnel is filling, is likely to be negligible.

13.5.4 Based on this assessment, it is considered that mitigation measures are not required.

13.6 Ecology – aquatic

13.6.1 The Falconbrook Pumping Station combined sewer overflow currently discharges into the reaches of the designated River Thames and Tidal Tributaries Site of Metropolitan Importance (Figure 13.5). Several important freshwater fish species are present but invertebrate diversity is limited.

13.6.2 There would be no ‘in river’ works associated with this site. No assessment of the impacts associated with construction has therefore been undertaken for aquatic ecology.

13.6.3 During operation, the reduction in fish mortality that would result from improved oxygenation of the water is considered to be a moderate beneficial effect. There would also be a minor beneficial effect, rising to moderate beneficial in the longer term through increased distribution of rare and/or pollution sensitive fish species. There would also be minor beneficial on invertebrates. Effects on mammals would be negligible.

13.6.4 No mitigation is required at this site because no adverse effects are anticipated.

Figure 13.5 Foreshore close to the Combined Sewer Overflow outfall for Falconbrook Pumping Station
13.7 Ecology – terrestrial

13.7.1 The site comprises buildings and hardstanding with a small area of tall plants typical of disturbed habitats, shrubs and occasional scattered trees. The site is of value to a small number of common breeding birds and invertebrates. The site may also be of value to bats. Surveys for these species are ongoing. There are no ecologically designated sites of relevance to the terrestrial ecology assessment within 500 metres of the site (aquatic ecology effects are considered in section 13.6).

13.7.2 Preliminary assessment findings indicate that the loss of habitat and disturbance could give rise to a local level adverse effect on bats. This will be confirmed following completion of surveys. All other effects resulting from site clearance on habitats, breeding birds and invertebrates would be adverse at the site level.

13.7.3 Operational activity would be limited to occasional maintenance work, which is considered unlikely to have significant effects on terrestrial ecology.

13.7.4 In addition to measures included within the Code of Construction Practice, replacement planting and additional measures to minimise disturbance on bats (if found to be present) and breeding birds may be required. With these measures in place the effects are unlikely to be significant.

13.8 Historic environment

13.8.1 The site contains no nationally designated heritage assets, nor are there any in the immediate vicinity. The site includes no above ground features of historic significance. The site lies within a locally designated Archaeological Priority Area and the main potential for buried heritage is in the form of palaeoenvironmental remains e.g. organic remains such as pollens or plant fossils, which would be of low heritage asset significance, and for the remains of post-medieval 19th-century footings and/or cellars of terraced houses (of low heritage asset significance). York Road, which forms the western site boundary, has medieval origins and there may have been a bridge and small settlement where it crossed the Falconbrook. The site therefore has a moderate potential for the remains of later medieval settlement (of medium heritage asset significance). A historic map of the site is shown in Figure 13.6.

13.8.2 Preliminary assessment findings indicate that the construction works would entail deep excavations which would remove any buried assets within the footprint of each excavation. This would be a minor adverse effect on palaeoenvironmental and post-medieval remains, and a moderate adverse effect for later medieval remains, if present. No operational effects are anticipated.
13.8.3 The desk-based study suggests that no heritage assets of very high significance are anticipated that might merit a mitigation strategy of permanent preservation in situ. The adverse effects could be successfully mitigated by a suitable programme of archaeological investigation before and/or during construction, drawing on a range of techniques. This would include subsequent dissemination of the results and so achieve preservation by record.

13.9 Land quality

13.9.1 A search of historical and environmental data indicates that the only on-site contaminative uses since mapped sources began are the existing sewage pumping station and electrical substation. Historically the surrounding area was industrial in nature to the west of the site and a mix of residential and community uses to the east. There is no ground investigation data available for the area. Desk based surveys have identified a low to medium risk from unexploded ordnance.

13.9.2 Based on preliminary assessment findings, there could be a slight adverse effect on construction workers due to the potential for exposure to contaminated soils or other materials, although any exposure risk would be short-term and limited to the construction period. There is likely to be a negligible effect on the built environment as it is considered unlikely that contaminants contained in subsurface materials would affect buried structures, including those of the existing pumping station.
13.9.3 During operation there would be negligible effect on future users and the built environment.

13.9.4 Given the slight and negligible effects predicted, no mitigation is required during the construction or operational phases.

13.10 **Noise and vibration**

13.10.1 Noise conditions around the site are dominated by road traffic and rail noise. The nearest locations to the site which are sensitive to noise and vibration are residential dwellings at Pennethorne House to the east and Arthur Newton House to the southeast, and buildings such as York Road community centre to the south and a children’s centre and adventure playground to the north.

13.10.2 Based on the preliminary assessment, significant noise effects arising from construction activities are predicted at residential properties at Pennethorne House, Arthur Newton House, 100 York Road apartments (proposed development) and at the York Gardens community centre, children’s centre and adventure playground. Significant vibration effects arising from construction activities are predicted at Pennethorne House, 100 York Road apartments (proposed development) and the children’s centre and adventure playground. No significant noise or vibration effects as a result of the operation of the development are predicted.

13.10.3 During construction activities, the contractor would be required to follow best practice as set out in the Code of Construction Practice at all times to reduce the noise and vibration effects upon the local community, for example through suitable siting of equipment on site.

13.10.4 In order to mitigate the significant effects predicted, further measures might include the use of localised screens and enclosures to reduce noise from particularly noisy, static operations.

13.10.5 The next stage of the assessment will profile the variation in construction noise levels across the programme of work with the aim of refining mitigation design and seeking to reduce the significant effects of construction noise and vibration. Further details of mitigation measures will be provided in the Environmental Statement including the significance of residual effects once mitigation has been taken into account.

13.11 **Socio-economics**

13.11.1 During construction, there would be moderate adverse amenity effects to users of the York Gardens Adventure Playground, York Gardens Library and Community Centre (Figure 13.7), and residents. Amenity effects on users of York Gardens public open space are considered to be minor adverse. Effects of disruption to commercial, office and retail premises would be negligible. No operational effects are predicted.

13.11.2 In completing the assessment, there is scope for further construction phase mitigation measures to be incorporated in the design with the aim of seeking to reduce significant adverse amenity effects which have been identified in this preliminary assessment.

13.11.3 No operational mitigation is required.
13.12 Townscape and visual

13.12.1 The surrounding townscape is predominately residential with a number of high rise buildings to the east and south. The condition of the townscape within the site is generally fair to poor.

13.12.2 Based on preliminary assessment findings, during the construction phase as a result of site clearance works and the intensity of construction activity, there is likely to be a moderate adverse effect on the character of the site and York Gardens character area. There is likely to be a minor adverse townscape effect on Thameside, Battersea, York Gardens and Hope Street residential areas due to the presence of cranes. Once operational negligible effects on all townscape areas are likely.

13.12.3 In terms of visual amenity, preliminary findings indicate that during the construction phase major adverse effects on views from Pennethorne House and the centre of York Gardens are likely. This is as a result of the visibility of cranes, hoardings and construction activity. There would be moderate adverse effects on viewpoints including Fairchild Close, Canley Court, Newcomen Road and three viewpoints within York Gardens (Figure 13.8). Minor adverse visual effects are likely on viewpoints including Lavender Road, Bridges Court and York Road due to the background visibility of cranes. Once operational there would be minor beneficial effects at Newcomen Road and the centre of York Gardens due to the visibility of new public realm created within York Gardens.

13.12.4 Mitigation measures to be employed during the construction phase are being incorporated into the proposals, for example, through use of capped and directional lighting when required. In terms of operation, a process of iterative design and assessment is being employed to reduce adverse effects and promote beneficial effects. It is likely that there would be no significant adverse effects during operation and therefore no further mitigation is proposed.
13.13 Transport

13.13.1 The Falconbrook Pumping Station site has good public transport accessibility being located within close proximity of bus stops with regular services and within 650 metres of Clapham Junction National Rail station. The site is on the east side of York Road (A3205) and construction vehicle access is proposed via Wandsworth Bridge Gyratory in the west and the Vauxhall Cross in the east, with construction site access directly off York Road. Operational site access would revert to the existing route via York Gardens.

13.13.2 During construction, the number of heavy goods vehicle movements would be comparatively low. The nature of the construction site layout at this location (which would require some highway layout changes) is considered likely to result in a minor adverse effect on road network operation and delay. Effects on pedestrian and cyclist amenity and safety are expected to be minor adverse. A minor adverse effect is expected on bus services (due to the relocation of the bus stop) whilst a negligible effect is expected for other public transport. During the operational phase there would be very occasional vehicle trips to and from the site for maintenance activities, which would have a negligible effect on the surrounding transport networks.

13.13.3 The project is being designed to limit the effects on the transport networks as far as possible. At this location, mitigation measures during the construction phase are likely to be required and would take the form of safe pedestrian crossing points, a road safety audit, and the possible provision of traffic marshalls to assist with certain vehicle movements at the site access points on York Road. Mitigation is not required for the operational phase.
13.14 Water resources - ground water

13.14.1 The proposed shaft would pass through the upper aquifer, which is defined as being of medium value and into the underlying London Clay (which is not an aquifer). The shaft would not penetrate the lower chalk aquifer beneath. Associated interception infrastructure would be located within the upper aquifer and extend into the London Clay.

13.14.2 Construction and operational effects on the upper aquifer would be limited to physical obstruction to groundwater flow and this is anticipated to be negligible.

13.14.3 No soil or groundwater contamination has been identified on site to date but should any be encountered, the risks would be assessed and appropriate remediation would be undertaken. The effect on groundwater quality is considered to be negligible.

13.14.4 Monitoring of groundwater levels and quality would be carried out before and during construction.

13.15 Water resources – surface water

13.15.1 The site is located approximately 200 metres east of the River Thames.

13.15.2 The River Thames closest to the site is classified as being of ‘moderate’ status in terms of quality, with a status objective of ‘good’ by 2027. There are no water dependent designated conservation sites within 2 kilometres of the site.

13.15.3 Construction effects would be managed via the Code of Construction Practice. With the Code in place effects on surface water resources from surface water runoff and potential contamination of the drainage system are not expected to be significant. Therefore no mitigation would be required during construction.

13.15.4 Once operational, the scheme would reduce the number of discharges from the Falconbrook Pumping Station combined sewer overflow to a predicted level of four spills in a typical year, once the tunnel is in place. This reduction would give rise to a beneficial effect on water quality. The number of risk days for river users being exposed to pathogens would be reduced by up to 152 days per year. In addition, the tonnage of sewage derived litter could be expected to be reduced from approximately 180 tonnes to 14 tonnes per year.
13.16 **Flood risk**

13.16.1 The main source of flood risk to the site is from the tidal River Thames and the site is located within the 'high probability' flood zone. However, it is protected by flood defences which run along the river bank.

13.16.2 The site may also be at risk of localised surface water ponding. Though not in the immediate vicinity of the site, the route of the connection tunnel from Falconbrook Pumping Station to the main Thames Tunnel passes beneath the Thames tidal flood defences approximately 200m to the west of the site. The works required to construct the tunnel could affect the local flood defences, and further studies are being completed to assess these potential effects.

13.17 **Further information**

13.17.1 Further information regarding preliminary assessment findings for Falconbrook Pumping Station can be found in Volume 14 of the Preliminary Environmental Information Report.