Thames Tideway Tunnel
Thames Water Utilities Limited

Application for Development Consent

Application Reference Number: WWO10001

Sustainability Statement

Doc Ref: **7.07**

Appendix B.8

Falconbrook Pumping Station

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

Hard copy available in

Box **48** Folder **B**
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Thames Tideway Tunnel

Creating a cleaner, healthier River Thames

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Appendix B: Site-specific appraisal

B.8 Falconbrook Pumping Station

Type of site:	CSO site, short connection tunnel drive site
Description of proposals:	The site is located within the London Borough of Wandsworth, east of York Road and west of Lavender Road and would intercept and divert flows from the Falconbrook Pumping Station CSO.

Water quality
Maintain and enhance river water quality

Appraisal
The proposals would support the objective. Particular issues of relevance to the site appraisal include:

- The site does not lie within a source protection zone. The shaft would penetrate the upper aquifer but would not extend into the lower aquifer. As no dewatering of the aquifer would be required no pollution pathway would be created through efflux discharge.
- In accordance with the *CoCP*, adequate site drainage would prevent contamination through surface run off during construction. No in-river works that could influence river water quality during construction are proposed. The water quality of the tidal Thames would therefore be maintained during construction.
- Once operational the interception of overflow discharge at Falconbrook Pumping Station CSO would lead to a reduction of spill frequency from 42 to 4 spills per annum. The yearly discharge volume would be reduced from 709,000m^3 to 45,000m^3 consequently leading to a reduction in sewage derived litter from 180t to 12t. The proposals would support the objective by enhancing the water quality in operation.

In summary, the proposals would support the objective during the construction and operation period by maintaining and enhancing water quality respectively.

Further details can be found in the *Environmental Statement* and the *CoCP*.

Biodiversity
Maintain and enhance biodiversity

Appraisal
The proposals would support the objective. Particular issues of relevance to the site appraisal include:

- The site is located within the York Gardens SINC of local importance. The integrity of the site would not be reduced through the temporary reduction of area.
- Hard standing, buildings and vegetation (scattered trees, dense scrub, tall ruderal vegetation and introduced shrub) would be removed from the site. Planting would

be in place and would improve habitat quality during operation.

- There would be a temporary loss of habitat associated with the proposed bus stop. This would be associated with removal of mature scattered trees and would consequently not support the objective.
- The temporary and permanent loss of habitat is not anticipated to affected populations of notable species. Provision of bat boxes would be beneficial to bat populations.
- Aquatic biodiversity would be maintained during operation as no in-river works are proposed.
- Once operational there would be direct positive effects on aquatic biodiversity due to the reduced amount of sewage and sewage derived litter entering the ecosystem. This reduction would lead to increased concentrations of dissolved oxygen s and reduced sediment nutrient levels, consequently improving the quality of aquatic habitats and enhancing biodiversity.

In summary, the proposals would maintain terrestrial biodiversity and enhance bat populations through provision of bat boxes. Aquatic biodiversity would be maintained during construction as no in-river works are proposed. Improved water quality would lead to an enhancement of aquatic biodiversity during construction.

Further details can be found in the *Environmental Statement* and the *CoCP*.

Climate change mitigation

Maximise energy efficiency and minimise the carbon footprint of the project

Appraisal

This objective is most appropriately appraised at the project level, as opposed to the site level. This is because whilst there are variations in energy and CO_2 emissions between sites, in general, these are representative of the different types of site proposed (eg, drive site, CSO interception). The individual sites do not provide an appropriate measure of how far this sustainability objective has been achieved. This is detailed within the *Energy and Carbon Footprint report*.

Procedures to maximise energy efficiency and minimise the carbon footprint of the scheme would be implemented through project-wide initiatives, and not specifically at the site level. Energy Management Plans would be implemented through the *CoCP*, which, alongside Thames Water's proposals to account for carbon emissions throughout the construction process, would assist in the management of emissions arising from the sites.

Energy and emissions are discussed in the thematic appraisal within the climate change mitigation section (see Appendix A). Additional details are also provided within the *Energy and Carbon Footprint report*.

Whilst predominantly addressed at the project-wide level, at the site level it is anticipated that the proposals would broadly support the objective. The following broad issues are anticipated to arise at the site:

- Greenhouse gas emissions resulting from construction materials at the site would be approximately 4,700t CO_2e. During the construction phase approximately 150t CO_2e and 540t CO_2e would result from logistics and construction (TBM, plant and machinery operation, lighting and welfare facilities) respectively.
- The site would make use of passive ventilation in operation. Energy requirements

for venting would be minimised and efficiency of ventilations points maximised.

In summary, the proposals would support the objective as they minimise energy requirements and maximise energy efficiency.

Further details can be found in the *Environmental Statement* and the *Energy and Carbon Footprint report.*

Change adaptation and flood risk

Maximise resilience and adaptability to change;
Take account of flood risk in the design of sites

Appraisal
The objective on resilience and adaptability to change is predominantly considered at a project-wide level due to relevant changes in population and climate occurring at regional level rather than specifically at a site level (see Appendix A).

However, at the site level, the proposals would support the objective to maximise resilience and adaptability to change, and take account of flood risk in design. Particular issues of relevance to the site appraisal include:

- The site is at high risk of tidal and fluvial flooding from the tidal Thames. Flood defence are in place and would not be altered through the development and an emergency plan would be in place. There would be no increase in the flood risk due to development.
- Storm sewers and the pumping station would be maintained during construction and operation. Groundwater flood risk at the site is low and would not be affected by the development. Groundwater levels would be maintained during construction and operation. The proposals would not result in an increased flood risk from sewer or groundwater flooding.
- Surface water would be drained in accordance with the *CoCP* during construction. In operation, attenuation would be maximised through installation of brown roofs and surface water would be discharged into the existing onsite drainage network. These measures would help maximise resilience and adaptability to change and to ensure that the flood risk is not increased.
- Whilst the site is within an area deficient of open space, the site is not within a Central Activity Zone. However, there would be no increase in hard standing from the development which would leave the risk of urban heat unchanged.

In summary, the proposals have taken flood risk into consideration and seek to maximise resilience and adaptability to change.

Further details can be found in the *Environmental Statement,* the *Site Selection Report* and the *CoCP*.

Excavated materials and waste management

Minimise waste arisings and its impacts on the environment and communities and to promote re-use, recovery, recycling and beneficial use

Appraisal
The proposals would support the objective. Particular issues of relevance to the site appraisal include:

- A drop shaft with an approximate internal diameter of 9m and a depth of 40m would be excavated at the site. It is estimated that 20,000t of excavated material, consisting predominantly of London clay (16,000t) would be generated. The material would be managed in accordance with the *Excavated material and waste strategy* (see *Environmental Statement* Vol 3 Appendix A) that seeks to maximise beneficial re-use of material.
- An estimated that a total of 720t of construction waste and approximately 8t per year of welfare waste would be generated at the site. This would be managed through measures set out in the *CoCP*, including application of a site waste management plan to maximise re-use, recovery, recycling and beneficial use, in accordance with the waste hierarchy.
- A disused toilet block and a disused pumping station would need to be demolished. There is high potential for asbestos being present. As defined in the *CoCP* and in compliance with the HSSE standard, asbestos would be managed and removed in a manner that would not pose a risk on the local community. The removal of asbestos from the site would be beneficial for the environment and the community as well as for workers on site.
- Operational waste would result from maintenance of the air management unit and would have limited bearing on the objective.

In summary, the proposals would promote re-use, recovery, recycling and beneficial use in accordance with the waste hierarchy. The removal of structures as high risk of containing asbestos would be conducted in a manner that would not pose a risk to the environment and community.

Further details can be found in the *Environmental Statement*, the *Excavated material and waste strategy* (see *Environmental Statement* Vol 3 Appendix A) and the *CoCP*.

Resources and raw materials

Promote the sustainable use of resources

Appraisal

The objective to promote the sustainable use of resources is most appropriately appraised as a project-wide issue, rather than specifically at the site level. Whilst it will be important to work towards the objective through ongoing considerations towards the further design of sites, the major opportunities will arise by taking interventions across the project as a whole.

A significant volume of materials would be required to support construction. The material specification required are central to the durability of the tunnel and therefore the scope for promoting the sustainable use of resources is limited by engineering requirements. A range of measures are proposed at the project level which support the objective and which would assist to promote the sustainable use of resources. Further details are available within the resources and raw materials section (Appendix A).

Whilst addressed predominantly at the project-wide level, specifics at the site level would support the objective. The following considerations are relevant to the sustainability at the site level:

- It is estimated that 30,000L of water would be used every 24 hours during the peak construction period in 2019. This is largely accounted for 20,000L/d for shaft and tunnel grout/concrete and by 7,000L/d for mitigation measures such as washdown and dust suppression. The water requirements are within the available water for

London as estimated in Thames Water's Resource Management Plan. Consequently, the volume of water used is considered to be sustainable.

- The operation of the site is not anticipated to present a large demand for materials with the exception of those required in routine maintenance.

In summary, the proposals would make use of sustainable supplies of water which would support the objective.

Further information can be found in the *Environmental Statement* and the *CoCP*.

Population, human health and equality

Ensure health and safety, and support the well-being of communities in which the project operates;
Encourage equality and sustainable communities

Appraisal

The proposals would support the objective. Particular issues of relevance to the site appraisal include:

- Construction would last approximately three years. The surface level work would take place during standard working hours. Continuous working hours would be required during construction of the short connection tunnel (approximately three months).
- Measures set out in the *CoCP* would ensure that health and safety would not be compromised through noise and vibration resulting from the construction at the site.
- The site is located within the London Borough of Wandsworth AQMA. Measures embedded in the proposals would ensure that health and safety of residents would not be affected through emissions and dust from the development.
- A footpath diversion of approximately 15m would be necessary. Appropriate signage and a vehicle marshal would be provided where necessary in order to ensure safety of pedestrians.
- In operation there would be beneficial effects for the community as disused and poorly maintained structures would be removed. The site would be landscaped and would serve as public realm. The green setting of York Gardens would be improved through advance planting. The proposals would support the objective by improving the well-being in the community through provision of public realm.
- The number of days recreational river users are exposed to pathogens would be exposed from 168 days to 18 days per year through interception of the CSO. This would ensure health, safety and well-being of river users.
- Encouraging equality and sustainable communities is predominantly addressed at the project wide level. However, extensive public consultation has been undertaken to take into account the community's views on the proposals at the site. This has been considered in conjunction with engineering, environmental, planning and cost issues to achieve a balance between vying interests. Consequently, it is considered that the proposals would support the objective of equality and sustainable communities.

In summary, health and safety would not be affected throughout construction. There would be beneficial effects on the community during operation. Extensive public consultation ensured that the objective to encourage equality and sustainable communities would be

supported by the proposals.
Further information can be found in the *Environmental Statement* and the *CoCP*.

Economy

Promote a strong and stable economy

Appraisal
The proposals are anticipated to support the objective. Particular issues relevant to the site appraisal include:

- Approximately 40 workers would be employed at any one time during construction. This would support employment and contribute towards the objective during the construction phase.

Further details can be found in *the Environmental Statement*.

Environmental protection and enhancement:

Minimise significant adverse environmental effects relating to air quality, noise and vibration and lighting from construction and operation of the Thames Tideway Tunnel;
Protect and enhance the character of landscapes and townscapes;
Protect and conserve the historic environment.

Appraisal
The proposals would support the objectives. Particular issues relevant to the site appraisal include:

Environmental effects

- There would be no significant adverse environmental effects relating to air quality, noise and vibration and lighting resulting from the development as measures embedded in the proposals would minimise these.

Landscape and townscape

- During construction there would be some changes in the character of the site and the direct surroundings. These would be minimised through advance planting and measures outlined in the *CoCP*. However, temporary changes associated with the presence of construction activity and equipment would remain.
- Disused and poorly maintained structures would be removed during construction and a new area of public realm would be available in operation. Advance planting would enhance the landscape of the site and the surrounding area.
- Consequently, the proposals would support the objective, albeit with some restrictions during the construction period.

Historic environment

- No above ground heritage assets, national designations or local authority designations are within or nearby the site. Consequently the development would have limited bearing on the objective.
- No buried assets of significance are expected on site. Potential adverse effects on buried archaeology would be mitigated against by measures in the *CoCP* such as archaeological investigation and watching brief techniques to form preservation by record, therefore supporting the objective.

In summary, the proposals would support the objectives as significant adverse environmental effects would be mitigated. The setting of the site and the surrounding area would be altered during construction and enhanced in operation. The proposals would have limited bearing on the historic environment and buried heritage assets would be preserved by record if encountered during construction.

Further details can be found in the *Environmental Statement* and the *CoCP*.

Land use

Efficient and sustainable use of land and buildings

Appraisal

The proposals would support the objective. Particular issues of relevance to the site appraisal include:

- The site is located within the Thames Water Falconbrook Pumping Station, mainly consisting of hard standing and buildings. Development on this brownfield site would eliminate the need of undeveloped land. The proposals would make efficient use of land and would support the objective.
- Development on this site would require the demolition of a disused toilet block and a disused pumping station. As there is a high risk of asbestos being present in these structures, no sustainable or efficient use of these would be reasonable. Further, these building would not need to be replaced and therefore the proposals would not affect the objective.

In summary, the proposals would support the objective by making efficient and sustainable use of previously developed land.

Further information can be found in the *Environmental Statement* and the *Site Selection Report*.

Sustainable transport

Minimise the detrimental impacts associated with the transport of construction materials and waste on communities and the environment, by prioritising the use of sustainable transport

Appraisal

The proposals would support the objective. Particular issues of relevance to the site appraisal include:

- Approximately 36 HGV movements per day would be required during the peak construction period which would last 2 months. It is estimated that 10 HGV movements per day would be needed on average over the entire construction period. Detrimental impacts associated with transport would be minimised through measures in the *CoCP* such as provision of a transport management plan.
- The PTAL for the site has been classified as 6b, indicating an excellent level of accessibility via public transport. Measures set out in the *CoCP* seek to promote the use of public transport through measures such as only allowing vehicles necessary for the construction on site.

In summary, the proposals would support the objective as they minimise detrimental impacts and prioritise the use of sustainable transport.

Further information can be found in the *Environmental Statement*.

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