



Application for Development Consent

Application Reference Number: WWO10001

Written summaries of the cases
put orally at the hearings held
on 19 December 2013

Doc Ref: **APP42.13**



Compulsory acquisition hearings

Day 13 – 19.12.13

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1 Introduction

- 1.1.1 This document contains a written summary of the oral submissions made by Thames Water Utilities Limited ('Thames Water') at the compulsory acquisition hearing held on 19 December 2013, as part of the examination of the application for development consent for the Thames Tideway Tunnel project. The Examining Authority ('ExA') in respect of the application set out the agenda for the compulsory acquisition hearings ('Agenda') by way of a letter, dated 18 November 2013, addressed to interested parties. This written summary of Thames Water's submissions is broadly structured by reference to the items on that Agenda that were addressed at the hearing on 19 December 2013.

2 Old Sun Wharf

2.1 Legal submissions by Michael Humphries QC

- 2.1.1 Representations made by the Old Sun Wharf Freehold and Management Limited (OSWFML) concerning potential settlement at Old Sun Wharf (OSW) were referred to. Thames Water explained that its assessment predicted only 'negligible' damage at OSW. Thames Water also confirmed that it was perfectly happy to offer OSWFML a 'settlement deed', but that a mechanism existed in the *Settlement Information Paper* to protect OSW in any event.
- 2.1.2 Thames Water drew attention to Section 3 of the *Settlement Information Paper* and, in particular:
- a. the offer to carry out 'building surveys' within the settlement 'zone of influence' (para. 3.3.1)
 - b. the requirement to provide a copy of the Record of Condition to the landowner (para. 3.3.2)
 - c. the building owner's right to notify Thames Water that the building owner reasonably believes that the construction of the project has caused damage (para. 3.3.3)
 - d. the requirement then to carry out a second 'building survey' by a surveyor 'jointly instructed' by the parties (reasonable professional fees to be reimbursed by Thames Water) (para. 3.3.4) and
 - e. a comparison of the surveys and an obligation to carry out repair work at the cost of the project (para. 3.3.5).
- 2.1.3 Thames Water also referred to Section 3.5 of the *Settlement Information Paper*, which deals with 'Repair works to buildings'.
- 2.1.4 Thames Water referred to the previous compulsory acquisition hearing where it had referred to the letters written to landowners and, in particular, subsoil landowners, informing them about its proposals in relation to potential settlement.

- 2.1.5 Thames Water stated that it would confirm whether the additional ‘in tunnel’ mitigation measures at para. 3.1.2 of the *Settlement Information Paper* had been assumed in the settlement assessment. Thames Water is able to confirm that these ‘in tunnel’ mitigation measures are not assumed within the settlement assessments for each building and that the assessments are, therefore, conservative.

3 Main tunnel – London Borough of Tower Hamlets

3.1 Submissions by Derek Arnold

Introduction

- 3.1.1 The following documents were referred to:
- a. *Engineering Design Statement* (Doc ref: 7.18)
 - b. *Settlement Information Paper* (Doc ref: 7.21)
 - c. Works plan and section drawing numbers DCO-WP-000-ZZZZZ-010051, 010052, 010053, 010054, 010055
 - d. Land plan drawing numbers DCO-LP-000-ZZZZZ-030040 - Rev 2, 030041 - Rev 2, 030042 - Rev 2, 030043 - Rev 2, 030044 - Rev 2.
- 3.1.2 The principles guiding tunnel alignment are explained in the *Engineering Design Statement* at Section 6.
- 3.1.3 At King Edward Memorial Park Foreshore, the main tunnel is a 7.2 metre internal diameter tunnel with a depth of about 60 metres to invert level.
- 3.1.4 The tunnel between King Edward Memorial Park Foreshore and Abbey Mills Pumping Station varies in depth between 60 metres and 66 metres over a distance of approximately 4.5 kilometres. Our investigations indicated that the tunnel will be built in chalk, but in some areas, the chalk cover becomes very thin above the tunnel, as low as 2 metres. As the tunnel passes along the river and towards the Limehouse Cut, the chalk is about 8 to 10 metres above the tunnel. Then it drops down for about a kilometre once the tunnel is under the Limehouse Cut. The thinner the cover, the more unpredictable the tunnelling conditions become.
- 3.1.5 The tunnel passes in front of a building known as Prospect Wharf, just to the west of the drop shaft. That building has been assessed to have a slight impact based upon our conservative approach to calculating ground movement (refer to the *Settlement Information Paper*).
- 3.1.6 The tunnel then moves eastwards, staying close to the foreshore, but not passing under land. The tunnel passes in front of Free Trade Wharf, which has been assessed to have just very slight damage. Near Narrow Street, the tunnel moves under land.
- 3.1.7 On Narrow Street, the tunnel passes under a building known as Old Sun Wharf, which is a six-storey building, assessed to have negligible impact (the lowest category of impact). It also passes under a building known as

Chinnocks Wharf, which is a seven-storey building, assessed to have a slight impact (damage category two) due to ground movement (please refer to note below). During the hearing, Thames Water corrected the damage impact category for Chinnocks Wharf from slight to moderate. Thames Water can confirm that the moderate impact was the result of an interim assessment, and that the final assessment at this stage of the project is slight (damage category two). The tunnel then passes under some smaller buildings, three- and four-storey buildings, before going under the Limehouse Basin.

- 3.1.8 The tunnel passes under the Limehouse Link road tunnel, which was built as a 'cut and cover tunnel', not as a bored tunnel (ie, it was excavated down from the surface and then covered over).
- 3.1.9 Then, further to the east, the tunnel passes under the proposed Crossrail tunnels (two railway tunnels) with a separation of about 15 or 16 metres. We have discussed that interface with Crossrail and we have an agreement of no objection from Crossrail to that interface. Our tunnel is considerably deeper than the Crossrail tunnels, and Crossrail had similar challenges in terms of finding the best route through this built-up area. When choosing our alignment, we took into account the potential impact of three tunnels (ours and two Crossrail tunnels) passing under the same buildings.
- 3.1.10 Just to the north of the Limehouse Basin, there are a series of nine- to twelve-storey buildings that the tunnel avoids.
- 3.1.11 The tunnel passes under Commercial Road and then under the Limehouse Cut alignment. There are some listed structures in this area: the old Limehouse District Library (assessed to have no significant effects) and Nelson's Wharf, where the Commercial Road bridge goes over the canal (again, because of the depth of the tunnel, very limited impact is expected).
- 3.1.12 At the end of the Limehouse Cut, the tunnel passes under the Blackwall Tunnel northern approach roads and then under the locks at the junction between the Limehouse Cut and the River Lee. The locks have been assessed and it is understood the Canal & River Trust does not object to the tunnel alignment at that point.

Higgins Homes

- 3.1.13 The ExA raised the objection made by Higgins Homes.
- 3.1.14 Thames Water confirmed that we have met with the engineers who are working for Higgins Homes, and were able to advise them that their piles are a long way above the proposed location of our tunnel and therefore, there would be no physical interface.
- 3.1.15 Post hearing note: To correct the oral evidence, we confirm that there was correspondence between Thames Water and Higgins Homes but not a meeting.

Tunnelling mitigation measures

- 3.1.16 The ExA sought clarification on what proactive ground movement mitigation measures would be taken to minimise the effects.
- 3.1.17 Thames Water advised that, for the main tunnel, with its depth and ground conditions, we would expect to have much less impact than is predicted, using what is a very conservative approach, particularly when the tunnel has good chalk cover. Once the contractors have finalised their construction methods, they would do a full assessment of all of the buildings on the alignment. We would expect them to use what are broadly called in-tunnel measures to minimise ground movement impact on buildings such as Chinnocks Wharf. Those measures can be a tightening up of tunnelling procedures to make sure that the ground movements are small (these measures are described in 3.1.2 of the *Settlement Information Paper*). We believe it is also true to say that the method of predicting ground movements is particularly conservative when the tunnel is so deep and has good chalk cover, because the ground should behave like a soft rock rather than a normal soil structure. We have used a standard approach to look at all of these assessments, but we do not think that, in practice, the predictions will be realised.
- 3.1.18 The ExA sought clarification on what mechanism will be used to ensure that the contractor implements tunnelling procedures to achieve tunnelling mitigation.
- 3.1.19 The overall requirements and procedures to manage and control effects from settlement from the works including tunnelling and shaft construction are detailed in the *Settlement Information Paper*.
- 3.1.20 The *Settlement Information Paper* is to be secured within the unilateral Section 106 undertaking proposed for mitigation policies and procedures. We intend to also review Section 13 of the *Code of Construction Practice Part A* to confirm the key principles.
- 3.1.21 The project's responsibility is to minimise any potential impact from the construction works including from ground movements.
- 3.1.22 As part of its tender requirements, the project has specified in the works information for the contractors high performance TBMs. This requires the TBMs to be designed to ensure volume loss does not exceed 1 per cent. In practice, both the Channel Tunnel Rail Link achieved and Crossrail line 1 are achieving generally less than 0.5 per cent volume loss.
- 3.1.23 The specifications require control of ground movement to a practical minimum and ensure that the risk of damage does not exceed damage category 2, which is 'slight', so assets do not enter the moderate category.
- 3.1.24 The contractors are required to submit a TBM management plan with their tenders for evaluation to demonstrate how they intend to control ground movements. This will be evaluated as part of the tender.

3.2 Submissions by Paul Lidgley

Old Sun Wharf Freehold Management Limited

- 3.2.1 The tunnel alignment east of King Edward Memorial Park Foreshore passes beneath the residential apartment building known as Old Sun Wharf. The freehold interest in that property is held by the management company, and there are 36 apartments held on long leases.
- 3.2.2 Thames Water has met the management company to discuss the effects of the tunnel on the property, and to provide technical information relating to the tunnel route and construction. A settlement deed will be offered to the company.

Higgins Homes plc

- 3.2.3 Higgins Homes plc is the owner and developer of a residential site at the junction of the Limehouse Cut canal and Upper North Street. The tunnel alignment limits of deviation pass beneath part of this site where it fronts the Limehouse Cut. Correspondence has been exchanged between Thames Water and Higgins Homes to clarify the depth of the tunnel relative to the foundations of the residential buildings, and the extent of the subsoil required for the tunnel.

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