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25 OAKHILL AVENUE, LONDON, NW3 7RD

Structural Engineer's Desk Study Report

March 2023

P2 - Planning

Status	Revision	Issued For	Date	Author
PRELIMINARY	P1	PLANNING	17.10.2022	AZ
PRELIMINARY	P2	PLANNING	28.03.2023	AZ

CONTENTS

1 PREAMBLE

This report has been prepared by Michael Barclay Partnership LLP (MBP) on the instructions of, and for the sole use and benefit of the Client.

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2 TERMS OF REFERENCE

MBP has been appointed by the client and owners of 25 Oakhill Avenue to undertake a Desk Study and assess the feasibility of undertaking structural works including the existing structure alteration, and a new basement construction.

3 INTRODUCTION

MBP has been appointed by the client and owners of 25 Oakhill Avenue to provide design for structural alterations including general refurbishment, levelling of the existing floors, replacing of the rear extension with new partly glazed and creating the new basement under the rear section of the house.

The aim of this Desk Study is to identify issues that might impact the structural design and construction of the proposed works. Particular attention is paid to ground conditions and to identifying features below ground that could impact the development.

4 THE SITE

No 25 Oakhill Avenue is part of the Royal Borough of Camden at the postcode NW3 7ED and is located on the south-east side of Oakhill Avenue, a two-way road which runs in between Redington Road and Bracknell Gardens. The existing property is Grade II listed building and was constructed in 1909. It is two-storey above ground floor, constructed of red brick with rusticated brick quoins and tiled double gabled roof with upswept other eaves to the main façade and hipped to the rear. No 25 forms with No 27 to the south-west a pair of symmetrical semi-detached houses as shown on the cover picture above and location plan Figure 4.1 and 4.2.

4.1 Adjoining Buildings

No 25 Oakhill Avenue forms with No 27 a symmetrical semi-detached house of the same style. A planning permission was granted for No 27 in 2014 for new single storey basement extension, which will be consider during the design process. No 25 Oakhill Avenue abuts the side passage with No 23 to north-east side. There are fence walls at the front and to the side with No 23. Rear garden fence is shared with both No 10B Greenway Gardens and 28 Bracknell Gardens (refer to Figure 4.1 and 4.2).

Figures 4.1 & 4.2: Maps showing the location and surrounding areas of the property (Extract from Location Plan and Google Maps)

5 SITE HISTORY

Historical maps show that the area around Oakhill Avenue was not developed until early 20th century. Maps given in Figures 5.1, 5.2 illustrate this.

Figure 5.1: Extract from London II.98 – OS London Town Plan 1894-96

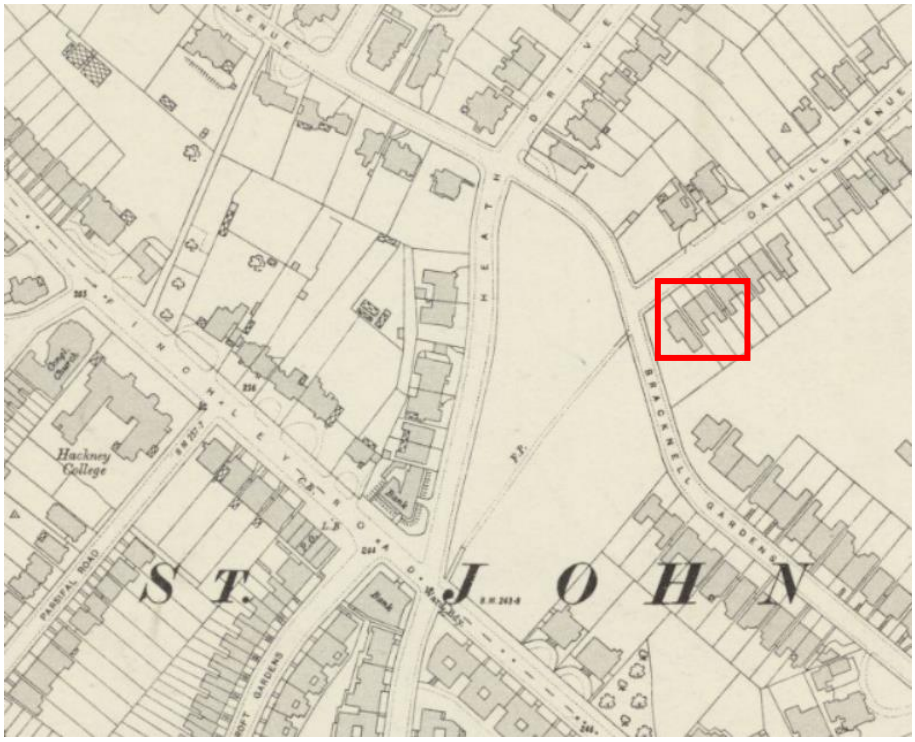


Figure 5.2: Extract from Ordnance survey 1915

The *Booth Poverty Map of 1898-1899* in figure 5.3 shows that the general condition of the inhabitants in the area ranged from 'Middle Class to Upper Middle and Upper class'.

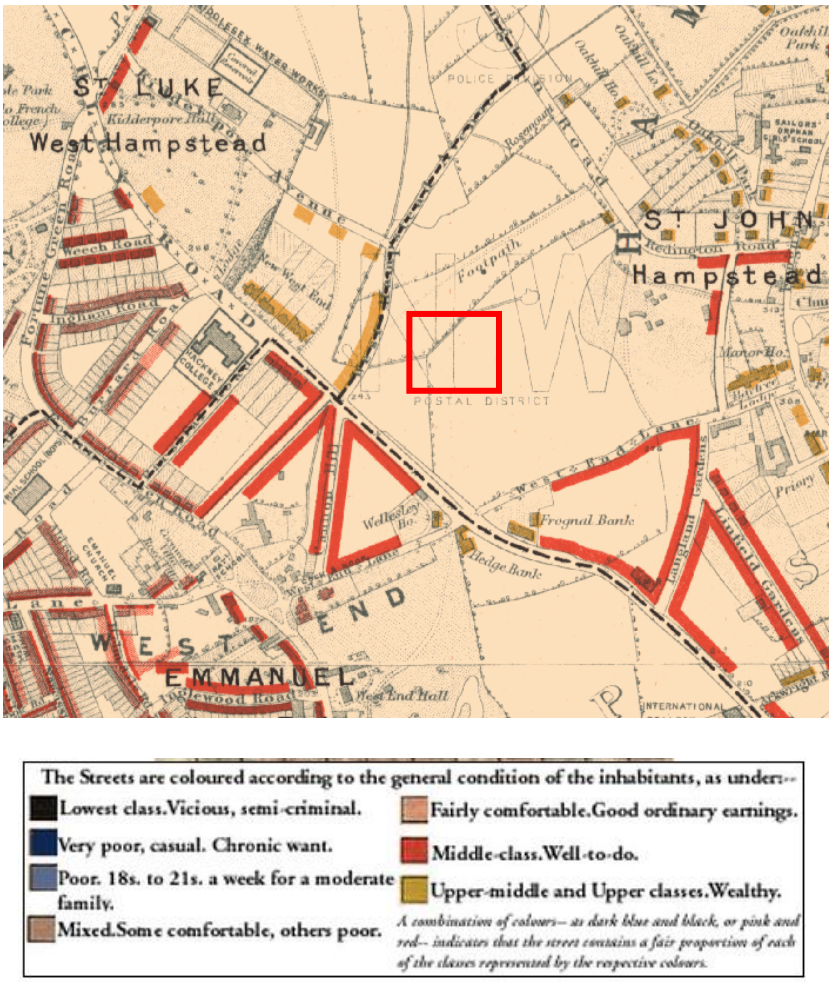


Figure 5.3: The Booth Poverty Map of 1898- 1899 (https://booth.lse.ac.uk/map)

Figure 5.4 below shows the extent of the damage from enemy action during WWII. This map indicates that 25 Oakhill Avenue and the adjacent area were not damaged during the attacks. This suggests that the current building at is original, built at the beginning of the 20th century.

Figure 5.4: Extract of Bomb Damage Map

25 Oakhill Avenue is Grade II listed building as shown on Figure 5.5 and it's located within the Frognal Conservation Area. The building was design by CHB Quennel and build by WJ King.

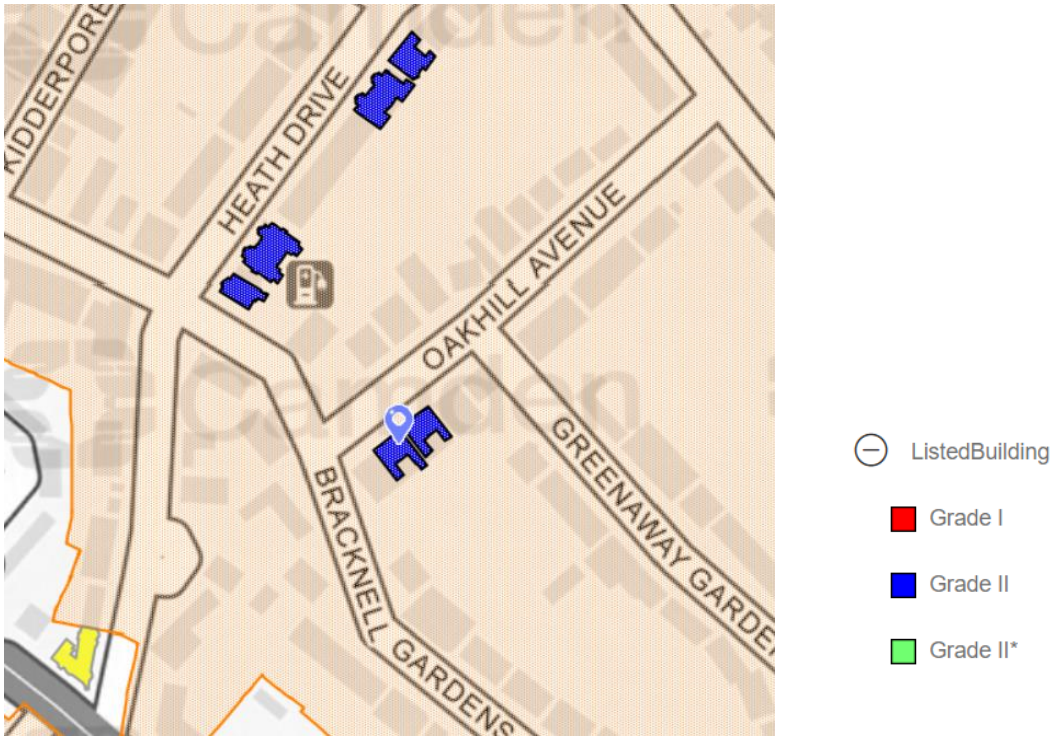


Figure 5.5: Extract Camden Listed Buildings Map

6 UNDERGROUND FEATURES

6.1 London's underground rivers

There are numerous 'lost' rivers running below the ground in London. Figure 6.1 is an extract from a map showing the site location encircled in red and its surrounding area. The map shows small stream, which run on the north west side of the Oakhill Avenue and it is a one of the tributaries of the Westbourne River. Stream is not close enough to be consider during the further site investigation.

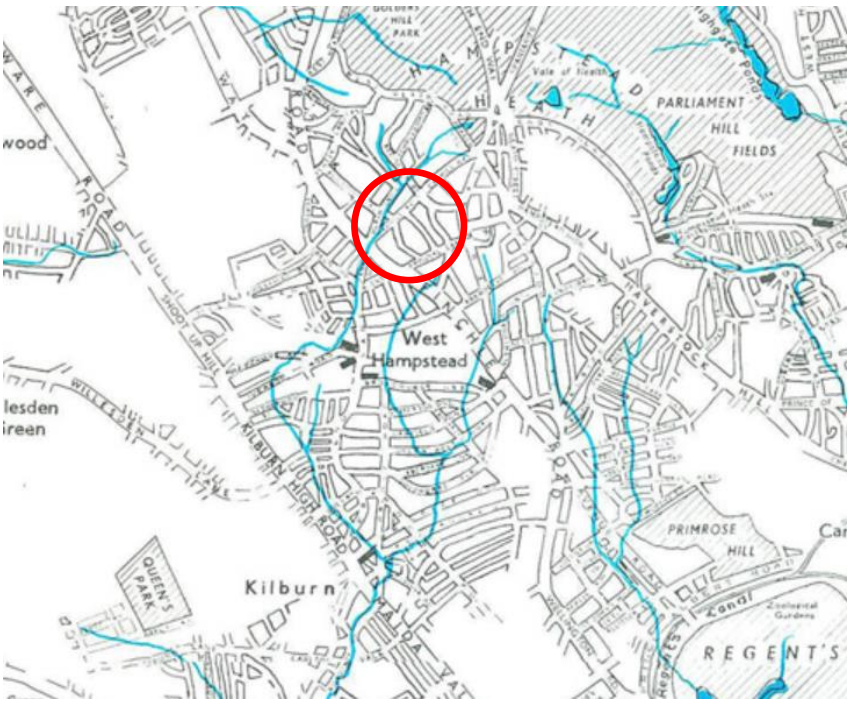


Figure 6.1: Extract from *Lost Rivers of London* by Nicholas Barton, 1982

6.2 London's underground tunnels

Figure 6.2 shows that none of the London Underground lines run in close proximity to the site and therefore will not have an effect on the proposed development, and neither does the property fall within the Crossrail 2 Safeguarding Limits.

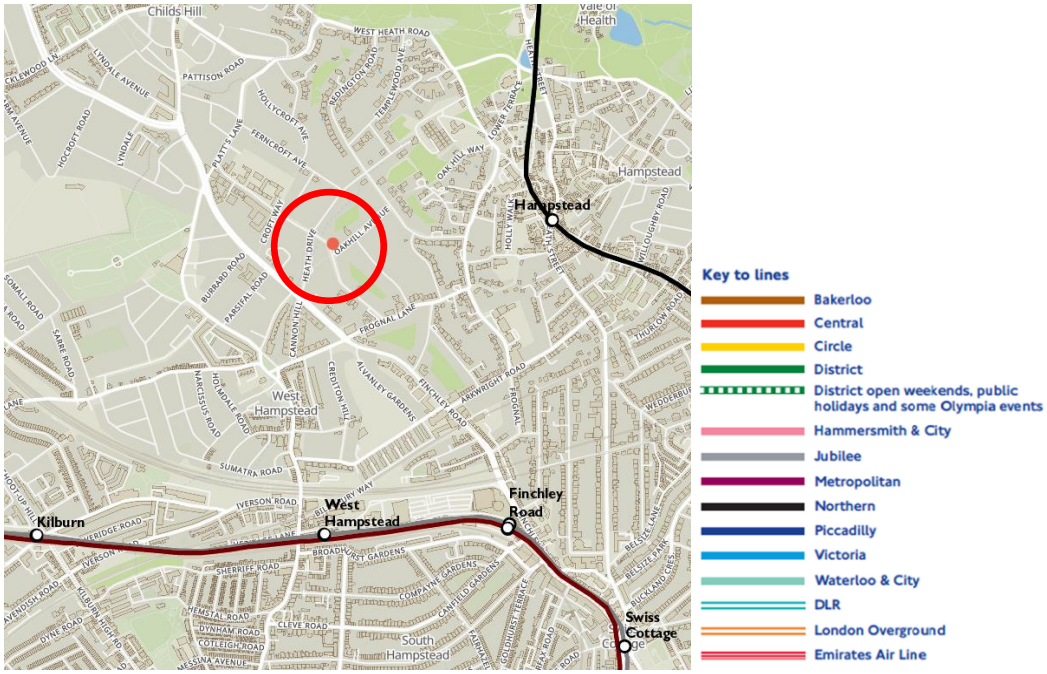


Figure 6.2: London Underground Lines

7 SITE GEOLOGY

The information from the British Geological Survey are shown in Figure 7.1 below. The survey indicates the site to be underlay by London Clay Formation with posible silt and sand deposit.

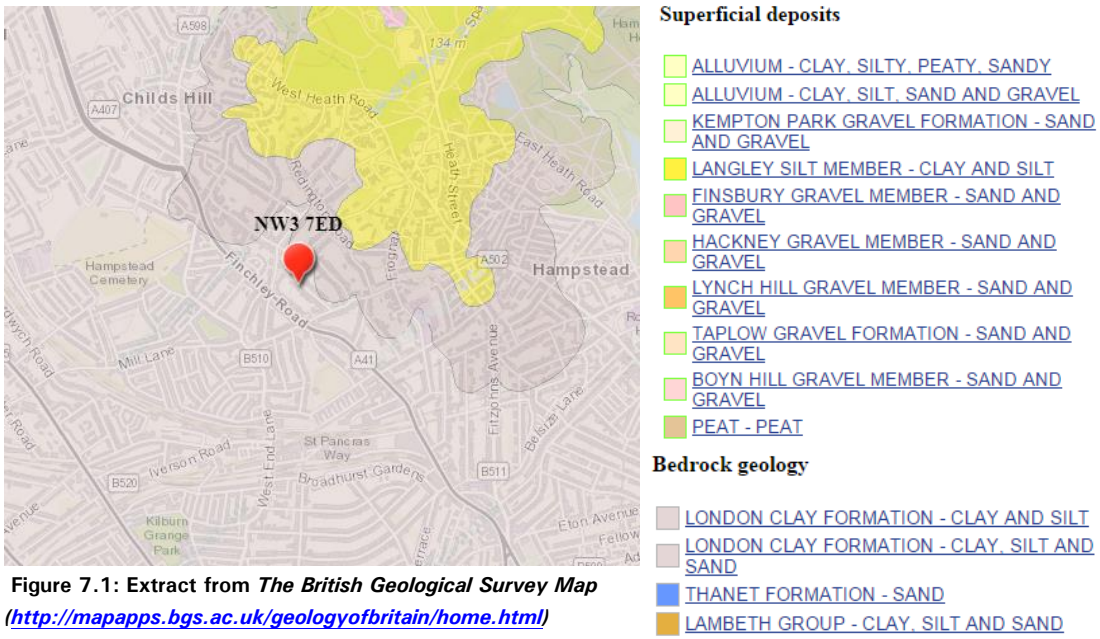


Figure 7.1: Extract from *The British Geological Survey Map* (*http://mapapps.bgs.ac.uk/geologyofbritain/home.html*)

The initial site investigations carried out at 25 Oakhill Avenue by GEA (Figure 7.2, 7.3 and 7.4) confirms the information presented on British Geological Survey map. The borehole report shows a superficial stratum of made ground to a depth of 1m with a Claygate Member encountered between 1 and 2.5m, overlaying London Clay which extend to the full depth of investigation (1.2m – 12m). During site investigation additional 3 window samples were taken to a depth of 2.5m. Groundwater seepage was observed in Borehole No 2, with shallow inflow associated with a high proportion of surface water infiltrating into the shallow soil.

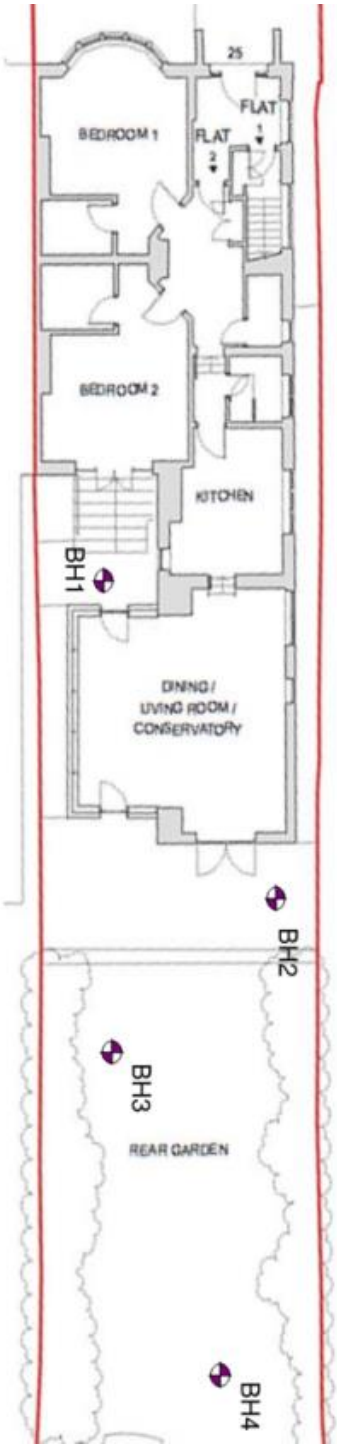


Figure 7.2: Bore hole location log extract from Factual Report by GEA

GEA
Geotechnical & Environmental Associates

Project				BOREHOLE No
25 Oakhill Avenue, London NW3 7RD				BH2
Job No	Date	Ground Level (m OD)	Co-Ordinates ()	
J22040	25-02-22			
Client		Engineer		Sheet
Lauren Shahmoon		Michael Barclay Partnership		1 of 2

SAMPLES & TESTS			Water	STRATA				Instrument / Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
						0.12	Wooden decking	
						0.18	Void	
0.25	D						MADE GROUND (dark brown mottled grey sandy clay with fragments of brick, concrete, flint and carbonaceous material, roots up to 15 mm and rootlets)	
0.50	D					(0.82)		
0.75	D							
1.00	D	M =44				1.00		
							Soft dark grey mottled orange-brown silty sandy CLAY with rootlets	
1.50	D						1.50 ... becoming firm	
						(1.50)		
2.00	D	M =50						
						2.50		
2.50	D						Stiff fissured brown mottled grey silty CLAY with sandy lenses and selenite crystals	
3.00	D	M =50						
3.50	D							
4.00	D	M =50						
4.50	D							
5.00	D	M =50						
							5.20 ... becoming brownish grey	
6.00	D	M =50						
7.00	D	M =50						
						(9.50)		

Report ID: CABLE PERCUSSION | | Project: J22040 - OAKHILL AVENUE.GPJ | | Library: TEMP LIBRARY FOR MACI PROBE.GLB | | Date: 03 March 2022

Boring Progress and Water Observations					
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth

GENERAL REMARKS

Inspection pit dug to 1.00 m
Penetration tests carried out using macintosh probe to provide an indication of soil strength
Groundwater seepage encountered at 6.00 m

All dimensions in metres Scale 1:50	Method/ Plant Used CFA sampling rig	Logged By GC

Figure 7.3: Borehole No2 log extract from Factual Report by GEA
(Continues below)

GEA
Geotechnical & Environmental Associates

Project				BOREHOLE No
25 Oakhill Avenue, London NW3 7RD				BH2
Job No	Date	Ground Level (m OD)	Co-Ordinates ()	
J22040	25-02-22			
Client	Engineer			Sheet
Lauren Shahmoon	Michael Barclay Partnership			2 of 2

SAMPLES & TESTS			Water	STRATA				Instrument / Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
8.00	D						Stiff fissured brown mottled grey silty CLAY with sandy lenses and selenite crystals(continued)	
9.00	D	M =50						
10.00	D							
11.00	D							
						12.00		
12.00	D	M =50						

Boring Progress and Water Observations					
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth

GENERAL REMARKS

Inspection pit dug to 1.00 m
Penetration tests carried out using macintosh probe to provide an indication of soil strength
Groundwater seepage encountered at 6.00 m

All dimensions in metres Scale 1:50	Method/ Plant Used CFA sampling rig	Logged By GC

Report ID: CABLE PERCUSSION || Project: J22040 - OAKHILL AVENUE.GPJ || Library: TEMP LIBRARY FOR MACI PROBE.GLB || Date: 03 March 2022

Figure 7.4: Borehole No2 log extract from Factual Report by GEA
(Continues from above)

8 SITE HYDROLOGY AND FLOOD RISK

The information available from British Geology Survey and from the Flood Risk Summary for the area, provides initial guidance for the identification of site subject to flood risk. A flood risk map shows that there is no risk of flooding from rivers or the sea (Figure 8.1), a very low risk of the surface water flooding (Figure 8.2), together with an indication of the areas with a significant risk of drains surcharge during heavy rainfall periods.

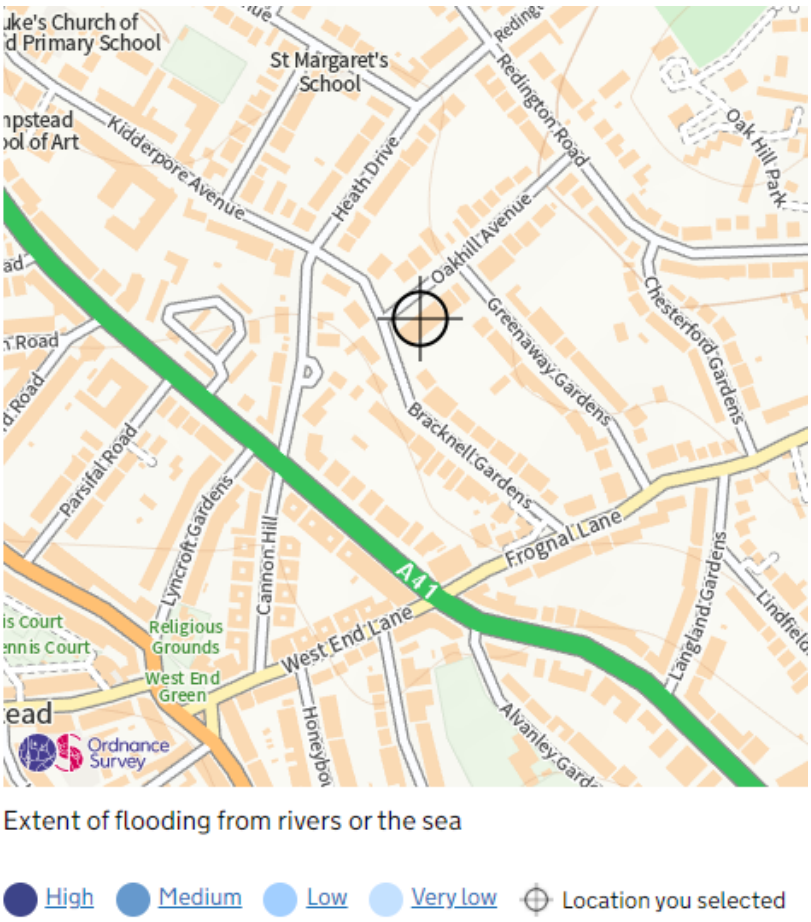


Figure 8.1: Risk of flooding from river and sea

Figure 8.2: Risk of flooding from surface water

The maps in figure 8.1 and 8.2 above show the site outside the risk area, therefore the flood risk of the proposed development is not considered relevant.

The site is considered to be in a low risk critical drainage area. The risk from flooding due to blocked drains will be mitigated by a new drainage system for both rainwater and wastewater that will be designed in accordance with the latest regulations and that will include a 'one way' valve together with a new pumped system with storage in order to reduce the risk of flooding from sewage.

9 PLANNING HISTORY

There are several basements constructed in Oakhill Avenue and nearby areas of Bracknell Gardens and Greenaway Gardens. Below a list of Planning applications with basements constructed in these areas:

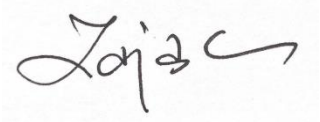
Address	Date of application
8 Oakhill Avenue	2020
9 Oakhill Avenue	2019
27 Oakhill Avenue	2014
10A Oakhill Avenue	2014
10A Greenaway Gardens	2012
25 Bracknell Gardens	2011

10 SUMMARY AND CONCLUSIONS

Based on this report and on previous MBP experience within the area, we anticipate that:

- The site is underlain by London Clay.
- The building is Grade II listed in Frognal Conservation Area.
- The perched water may be encountered during basement excavation however, are likely to be relatively minor.
- The underground river is not in proximity and will not have an impact on ground condition.
- London Underground services and Crossrail 2 plans, as well as underground are far enough from the site and will not have an impact on the proposed works.
- Flood Risk shows that the risk of flooding at 25 Oakhill Avenue is very unlikely.

Report Prepared by:



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Date 28.03.2023