COCHRANE CONSTRUCTION CONSULTANTS

161 ARLINGTON ROAD, LONDON NW1 7ET

DESK STUDY REPORT

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A. REVISION HISTORY

Revision	Date	Purpose /Status	Author	Reviewed
00	08/04/2024	Initial Issue	BC	
01	11/11/2024	Updated for resubmission for planning	BC	
02	26/11/2024	Formatting of appendix titles corrected	BC	

B. AUTHOR

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February 2024

C. NON TECHNICAL SUMMARY

This Desk Study Report looks at the site of 161 Arlington Road in relation to the planning application for the proposed refurbishment of the property. These proposed works include demolition and construction of an enlarged rear extension, which involves enlargement of the existing basement built c1992. Under Camden's Basement CPG the latter works require a Basement Impact Assessment, for which this document forms an initial part.

The property lies within London Borough of Camden, Camden Town ward. It lies within LBC's Camden Town Conservation Area and is a Grade II listed. The site postcode is NW1 7ET, National Grid reference TQ288837.

The site lies on the higher ground on the western slopes to valley of the former River Fleet which drained the Hampstead Heights. The Fleet is one of London's Lost Rivers and has been culverted in Camden since 1812 and incorporated into London's sewer system.

The ground strata to the area is London Clay, this is overlain by a thin layer of made ground of variable depth. No ground water was encountered in any of the nearby boreholes reviewed. The site does not lie within a Groundwater Source Protection Zone.

The building was constructed c1830 as part of a terrace, comprising Nos155-169, on the west side of Arlington Road just south of the junction with Parkway. The remaining buildings on the west side of Arlington Road south of this block were constructed in the 1840s.

The properties along the western side of Arlington Road are typically three storey over basement and have lightwells front and back to provide natural light and ventilation to the basement rooms. The buildings are of traditional construction with the original buildings having London butterfly roofs, replaced on many properties, including No161, by mansard extensions.

The properties in the northern terrace, now comprising Nos155-161, differ from those further south in having only a single window on each upper floor – the properties further south having two. No161 differs from the adjacent properties in that it has a shop front at ground floor level which appears historic. In addition, refurbishment works c1992 added a mansard extension, and constructed a rear basement extension with a conservatory at ground floor with terrace at first floor.

As is the case for most properties of this period in London, the front elevation of both the house and terrace have retained an ordered character whilst the rear of the properties are more eclectic due to the addition of rear extensions at different times.

The topography of the site locality is a very gentle downward slope to the northeast (Fleet River valley) with a slope of approximately 1.4 degrees. There are no steep slopes in the vicinity (apart from lightwells which have an engineering support and the railway cuttings to the southwest) and therefore there is no risk of slope instability.

The site is within Flood Zone 1, has an approximate area of 0.1 hectare and has no history of flooding. Therefore, as the site is less than one hectare, no Flood Risk Assessment is required.

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1 INTRODUCTION

This report details the Desk Study carried out by Cochrane Construction Consultants Limited (CCC) for 161 Arlington Road Camden, London NW1 7ET (the 'site'), on behalf of our clients, Asli and Taylan Karagul, and it should not be relied upon by any other party without the explicit written permission of CCC.

This Desk Study provides the information:

i) The history of the area.
ii) The age of the property, and its construction.
iii) The nature of the adjacent properties and likely construction
iv) The topography of the area around the site.
v) The geology and ground conditions –using information obtained from the site investigation and local boreholes from British Geological Society and records.
vi) Hydrology and Geo of the site, including rivers and watercourses whether existing or old.
vii) The surface water and ground water regimes.
viii) Underground infrastructure, particularly London Underground Limited and other tunnels
ix) Thames Water assets, main drains and utilities, and other services.
x) Flood risk issues.

All parties to this report do not intend any of the terms of the Contracts (Right of Third Parties Act 1999) to apply to this report. This report does not purport to provide definitive legal advice, nor does it demonstrate that the site will never flood in the future.

The Executive Summary contains an overview of key findings and conclusions. However, no reliance should be placed on it without the whole report having been read as other sections of the report may contain information which puts into context the conclusions noted within the Executive Summary.

2 PROPOSED WORKS

The current proposals for 161 Arlington Road include:

i) General refurbishment of the property
ii) Demolishing the existing and rebuilding a new rear extension at basement and ground floor levels
iii) Extending the basement extension at the rear to occupy the footprint of the extension at ground
iv) Lowering the basement floor level approximately 400mm and underpinning of existing walls

The proposed works involve the lowering of the existing floor level by 400mm and rebuilding the existing rear extension over the enlarged basement. Lowering the basement floor will require an excavation of approximately 700m below the existing floor level, this allows for the drop in floor level, finishes to basement and construction depth.

Lowering the basement floor means that the existing foundations, except the church wall, will require shallow underpinning (800mm Therefore based on the assumption that there not a major groundwater issue, it is only rainfall which will need to be dealt with in the temporary condition. Allowing for excavation and the rear of the roof (the existing RWP from the roof will need to be picked up) an anticipated flow rate under storm conditions of 30l /min will apply. This is within the range of submersible dewatering pumps.deep). The proposed formation will still lie within the London Clay, and below any made ground, the same strata as the existing foundations.

The existing rear extension is to be extended full width and by approximately 1.3m into the rear garden to form a lightwell to the basement rooms.

The existing site is approximately 150m2 (0.015 hectare) in area.

Figure 1)Existing Rear Garden Finishes

3 SOURCES OF INFORMATION

The report has been based upon a variety of information sources as listed below:

- London Borough of Camden Planning website
- Arup report Camden geological, hydrogeological, and hydrological study - Guidance for subterranean development, dated November 2010.
- London Borough of Camden - Strategic Flood Risk Assessment
- London Borough of Camden Planning Guidance – Basements, dated January 2021.
- London Borough of Camden - Camden Town Conservation Area Appraisal and Management Strategy, dated 2007
- London Borough of Camden - Strategic Flood Risk Assessment, dated July 2014
- Historic England - The National Heritage List for England
- Transport for London - Property Asset Register Public Map
- British Geological Survey records.
- CCC records
- Gov.uk websites for flooding (Flood map for planning & Long-term flood risk)
- Thames Water sewer asset plans.
- Internet searches and mapping.

4 LEGISLATIVE STATUS OF PROPERTY

Arlington Road lies within Camden Town ward in the London Borough of Camden.

The property, along with the adjacent buildings at 157 and 159, is Grade II listed (List Entry Number: 1272258).

The site lies within LBC's Camden Town Conservation Area.

The property shares a party wall with No 159 Arlington Road. The arrangement on the church side is more complex, with a double wall structure to the front four storey building but a party wall in two storey link section between the front building and the main hall.

Refer to Figure 6 in Appendix A.

5 THE SITE

5.1 SITE LOCATION

Arlington Road is in the London Borough of Camden, situated to the east of Primrose Hill at the northeast corner of Regent's Park. Arlington Road is situated on the west side of Camden High Street, to which it runs parallel, from Mornington Crescent in the south to Jamestown Road (adjacent the Regents Canal) in the north.

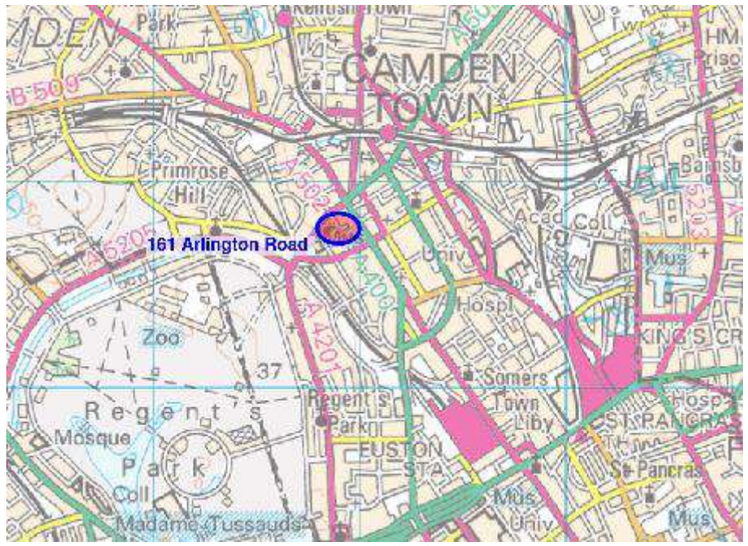


Figure 2: Site Location

Figure 3: Aerial View of Site

The property at 161 Arlington Road lies on the west side of Arlington Road just south of the junction of with Parkway. It is approximately 160m southwest of Camden Town tube station and approximately 330m northeast of Regent's Park.

No161 lies at the north end of a terrace of residential properties running towards Parkway, with The Lady of Hal Church adjacent on the north side. The residential properties are typically three storey over basement, and many, including No161, have had mansard extensions added.

The site covers an approximate area of 0.01 Hectares.

The following aerial photograph shows the location of the property, with Parkway on the right-hand side of the photo (See Figures 4 and 5 in Appendix A).

The site postcode NW1 7ET, National Grid reference TQ288837.

5.2 SITE TOPOGRAPHY

Reference to the OS map and topography map indicates that the site lies on the eastern slope of the high ground from Hampstead to Primrose Hill with a fall to the north-east. Ordnance Survey levels gives the street level adjacent the site to be 29.4mOD.

The area falls into a valley to the northeast. This is the former route of the River Fleet, one of London's Lost Rivers which runs southeast from Hampstead towards Blackfriars, passing north of Camden Town tube station before following the route of St Pancras Way. Since Victorian times the River Fleet has been culverted and is now incorporated into London's sewer system.

From OS data the slope falls to the northeast, with an average slope in the area of the site of 1.4 degrees, defined as a 'very gentle slope'. This is significantly less than the slope of 7degrees as set by Arup in the CGHHS as maximum angle for slope stability in London Clay where groundwater is close to the surface.

Therefore, Slope Instability is not an issue for the site locality.

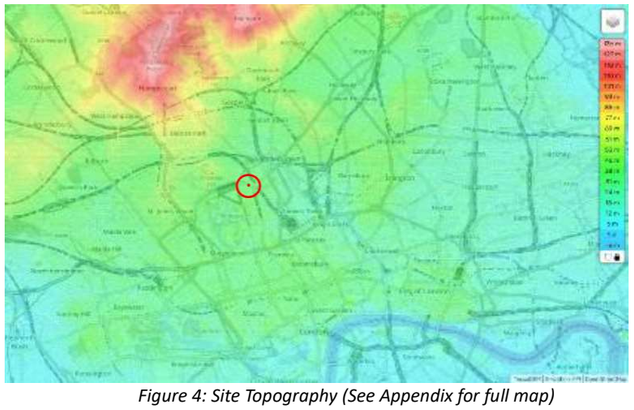


Figure 4: Site Topography (See Appendix for full map)

Refer to Figures 7 -11 in Appendix A, give the LBC contour map, site topography, LBC Camden Slope map and topographical sections through the site.

5.3 SITE GEOLOGY

The British Geological Survey map (Geology Map Sheet TQ28SE – Solid & Drift Edition) for the area confirms the site is underlain by the London Clay Formation. Local boreholes indicates that a layer of made ground is present on top of the London Clay.

Figure 5: BGS Geological Map Showing Site

BGS well log TQ28SE1491 at Camden Town station (c1946) gives the overall geology to depth as:

- Made ground, variable depth and is dependent on previous development,
- London Clay, to 33m bgl,
- Lambeth Group (Woolwich & Reading Beds), to 49m bgl,
- Thanet Sands, to 56m bgl
- Chalk, to depth.
- Rest Level of water at 85m bgl (in Thanet Sands)

The immediate surface strata have been confirmed by local boreholes. The made ground is of variable depth ranging from 0.2m to 3m. The latter appearing where original basements have been backfilled.

The local boreholes did not encounter any groundwater (maximum borehole depth 9.95m).

The London Clay is of high to very high plasticity and as such generally have a low permeability and a high susceptibility to shrinkage and swelling movements with changes in moisture content, as defined by the NHBC Standards, Chapter 4.2. Plasticity Index values are typically between 42% and 45%, meaning that the soil is high swelling and shrinkage potential.

Based on sulphate content of the soil all concrete in contact with the soil should be Class DS-4 in accordance with BRE Special Digest1, 2005.

Refer to Figures 12-19in Appendix A which give the Geology map and local borehole records.

A site specific borehole, 5m deep, has been carried out in January 2024 which has confirmed the soil strata on site to compise:

- 450mm topdoil
- mid brown CLAY

Standing water was found in the borehole at 4.9m below ground level

5.4 GROUND CONTAMINATION

The historical development of the site, it was pasture before 161 Arlington Road was built in the 1830s, indicates that there is a negligible risk of contamination from the site.

If contaminants are present, then a pathway to humans is required to permit the risk to occur. However, no such pathway exists as the rear garden is largely paved and will remain so. This blocks any pathway and prevents contamination being an issue.

5.5 SITE HYDROLOGY & HYDROGEOLOGY

5.5.1 SITE PERMEABILITY

In general, the surrounding locality is highly developed with over 90% of surface covered by hardstanding (highways, buildings, and paved areas).

The 161 Arlington Road site, approximately 110m2 in area, is largely impermeable with the front lightwell having a concrete slab, and the existing garden to the largely paved. An area of planting, approximately 10m2, exists around the rear of the garden and is to remain largely as existing.

Any run-off is collected, via the existing RWP's and gullies to the rear of the house and runs via the existing drains running under the building to a manhole in the front lightwell before being discharged into the main Thames Water sewer in Arlington Road (1524x910 sewer). Adjacent properties are similar with manholes evident in the front lightwells.

The proposed scheme does not alter the permeability of the site with the increased rear extension and lightwell replaces existing concrete paving in the garden. The runoff surface water collected in the proposed scheme will be disposed via the sewer system as currently happens in the existing building.

5.5.2 SURFACE WATER

There are no natural surface water features within 100m of the site. The nearest surface water features are:

- the man-made The Regent's Canal 400m to the north,
- Regents Park Boating Lake 1.3 km to the west,

- Parliament Hill Fields Lido 2.1km to the north, and
- and The Hampstead Ponda 2.6km northwest.

The courses of two 'Lost Rivers' run near the site. The River Fleet ran in the valley to the east of the site, from its headwaters on Hampstead, passing north of Camden Town tube station before following the line of Lyme Street and St Pancras Way on its way to the Thames at Blackfriars. At its nearest its course is 420m from the site. The river has been culverted and incorporated into London's drainage infrastructure since c1812.

To the west, the Tyburn runs through the west side of Regents Park, where it supplies the boating pond, 1.3km from the site.

Refer to Figures 20-22 which show the lost rivers and, surface water features and Hampstead Heath catchment areas.

5.5.3 GROUNDWATER

The site sits on London Clay, which The Environment Agency (EA) classifies as 'Unproductive Strata' due to its negligible permeability no significant groundwater flow is expected to occur beneath the site. There may be a porewater pressure differential, but this will naturally dissipate down the slope.

Local boreholes or monitoring standpipes did not encounter groundwater near the surface. The deeper borehole at Camden Town borehole (BGS) reported water at 91m below ground level in the chalk – the lower aquifer).

Refer to Figure 23 which shows the EA's Aquifer Designation map.

5.5.4 AQUIFER & GROUNDWATER VULNERABILITY

The Environment Agency (EA) uses aquifer designation that are consistent with the Water Framework Directive and reflects the importance of aquifers as a resource (water supply) and in supporting surface water flows. There are two main water bearing aquifers in the London Basin separated by the relatively impermeable London Clay – the Upper Aquifer (River Terrace Deposits) and the Lower Aquifer (Thanet Sands and Chalk)

The EA 's Aquifer Designation map shows the Bedrock geology underlying the site as London Clay, confirmed by the geology and boreholes, which is classified as Unproductive Strata with low permeability that have negligible significance for water supply or river base flow.

The EA's Groundwater Vulnerability Map and Figure 8 in Arup's 'Camden geological, hydrogeological and hydrological study', indicates that the site is not located within a Groundwater Source Protection Zone, a Zone II (Outer) source protection zone is located 1km west of the site. It should be noted that this inner source protection zone relates to the Barrow Hill site which ceased abstraction in 2012.

Refer to Figures 23-25 in Appendix A which give the aquifer designations by LBC and the EA, and the Groundwater Vulnerability map.

5.5.5 WATER WELLS

From BGS Geoindex map of well locations, the nearest well to the site is located at 25 Carol Steet, 260m from the site. Thie well at Carol Street is 109m deep and draws water from the chalk lower aquifer beneath the London Clay.

See Figure 18.

6 HISTORICAL DEVELOPMENT OF THE SITE

The historical maps included with this report show the historical development of the area around the site.

For ease of reference modern street names have been used in the following description.

During the Middle Ages development in the area is limited to a series of small hamlets along the road to Hampstead, an Angle Saxon village, around Camden Town and the end of Crowndale Road. The area of the site is shown as pasture.

Development in Camden was initially a slow process, starting in 1791 when Sir Charles Pratt the then Earl of Camden, granted leases to build 1400 houses. Early building was focused along Camden High Street and in the land to the east, where The Veterinary College was built, opened 1792. The pace of growth increased after 1800 with the arrival of Regents Canal which opened 1820, and the branch to the Cumberland Basin near Euston which served Cumberland Market, opened early 1820s, and the London and Birmingham Railway, Euston opened 1837, and the construction of the Goods Yards to the north on the site of the present-day Camden Market.

On the west of Camden High Street, owned by Earl Southampton, development was slower with growth initially limited to industrial and commercial expansion accessed from Camden High Street, which gives rise to the present-day passages linking through to Arlington Road.

By the 1830s Parkway, then Park Street, was developed and Arlington Road had been set out, called Grove Street to the north and Arlington Street to the south. A terrace on Arlington Road, south of Parkway, which includes No 161 is shown on maps from 1830 and 1834. The terrace is absent from Cary's 1837 map, this is due to the use of a 1816 map as the base of this postal zones map.

This agrees with the fenestration of houses along this part of Arlington Road, with Nos 155-161 having a single window on each floor, while further south the properties have two windows on each floor.

During the 1840s the area between Arlington Road and the railway lines to the west was developed, until in the late 1850s the street plan matches that of the present day.

Bombing during the Second World War did not significantly impact the buildings around No161 Arlington Road, with only minor bomb/blast damage indicated (LCC Bomb Maps describe damage as 'blast damage-minor in nature') to nearby buildings, and no damage shown to 161 Arlington Road or buildings adjacent.

Figure 6: LCC WW2 Bomb Damage Maps

The absence of heavy bombing in the area indicates a low risk of unexploded bombs on the site.

See Figures 26-46 for historical maps showing the development of the area, including the LCC Bomb Damage map..

6.1 EXISTING BUILDING

The house at 161 Arlington Road was originally built c1830 as a mid-terrace property on the west side of Arlington Road just south of the junction with Parkway. This original terrace comprised Nos155-169 Arlington Road and ran up to the rear of the Parkway properties to the north and included a public house at 163/165 Arlington Road.

The original buildings to the terrace, like those built later to the south, were typically three storey over basement, with lightwells to the front and back. The front elevations were of London Stock brick, rendered up to first floor level and exposed above. Unlike the later buildings to the south, the houses at No155-161 only have a single window on each floor - those further south have two windows.

Figure 7: Arlington Road Elevation showing No161 (white building)

The construction of the buildings was traditional in nature with timber joists spanning front to back between the external masonry walls and the central spine wall, brick at basement and timber stud over. The original roof structure appears to have been a butterfly roof set behind the front parapet wall with a central valley supported by a beam running front to back.

To the front of the building there are two arched brick vaults extending under the pavement/ road and accessed from the front lightwell. These have limited headroom but appear generally sound.

The properties at the northern end of the terrace were demolished to allow construction of the adjacent church. With Nos 163-165 demolished in the late 1920s to allow construction of The Lady of Hal Church, and those at Nos167-169 demolished later, the two houses are still shown on the 1952 map, for construction of the associated Presbytery.

To the south No155 was altered in the mid 1991s as part of the conversion and refurbishment of Nos147-155 into flats, including mansard extension and construction of an access stair to the rear.

The island site behind No 161 was occupied by Park Chapel School from the 1870s until after WWII, when the site was occupied by Curry and Paxton's optical works. The site was redeveloped c1972 to office use (Ort House) and has remained so until present day.

No 161 Arlington is also unusual in that it has a projecting shop window at ground floor (on the right looking from street) and door set off centre, the entrances on Nos157 and 159 are set to the left.

Figure 8: No161 Front ground floor shop-front.

A historic photograph from The London Picture Archive shows the shop front to No161 Arlington Road in 1977 largely as it exists today, except the separate door to the flat above is present, the front lightwell is covered and the present-day railings at the front are absent.

Figure 9: No161 Shop Front c1977

Planning records indicate the property was converted to a single residential property c1987 (from shop and separate flat over) and in c1992 a rear extension and mansard level were added. It is likely that the alterations

from the 1977 photograph were undertaken as part of the 1987 works.

This generally appears to agree with the extent of the building today.

No 161, along with Nos 157 and 159, are Grade II listed buildings, having been added to the National Heritage List for England in 1999. The listing appears to relate only to the streetscape

The Historic England List Entry (Ref 1272258) describes the three properties as:

> *Terrace of 3 houses at end of row, one with contemporary shopfront. c1840. Nos 157 and 159 stock brick with renewed parapets concealing slate roofs. No.161 rendered with raised mansard not of special interest.*
>
> *One window wide with doors at left; 3 storeys and basements. All windows small-pane glazing bar sashes, those to Nos 157 and 159 under gauged brick heads and those to No.157 with margin lights.*
>
> *Ground floor windows to Nos 157 and 159 with round-arched ground floor windows and doorcases having moulded surrounds, panelled doors and toplights, No.159 with round-arched small paned glazing and margin lights to upper sash. No.161 with shopfront with moulded pilasters, narrow panes and fascia with dentil cornice.*
>
> *INTERIORS not inspected.*
>
> *SUBSIDIARY FEATURES: all have area railings, those to No.157 with thistle-head finials.*

The full listing is included in the appendices to this report.

From our inspections the refurbishments, 1987 and 1992, appear to have largely replaced the original structure within the building as the areas inspected the flooring is largely chipboard and the joists modern sawn timber (and the floors are level).

Consequently, little of the original structure apart for the main external walls remain, and no original features are visible internally.

6.2 ADJACENT BUILDINGS

The following plan shows 161 Arlington Road and the adjacent properties.

Figure 10: Site Plan Showing Adjacent Buildings

6.2.1 159 ARLINGTON ROAD.

Located to the south of 159, this property is part of the original terrace and appears largely as built, still three storey over basement with the hipped roof still present. From initial observation this building appears to be largely original, with Butterfly roof still in place.

Planning records indicate that c 1976 the property was split into a basement flat with a maisonette, with a rear extension built into the rear lightwell c2004 to provide garden access to the ground floor flat.

The existing wall between 159 and 161 is shared and will require a Party Wall Award for any works affecting it.

6.2.2 OUR LADY OF HAL, RC CHURCH

Built in 1933 on the site of the demolished 163-165 Arlington Road, the church was the London home of the Belgium Missionary Fathers of Scheut following World War 1. The presbytery next to the church is a slightly later addition, appears to have been built in the mid 1950s on the sites of Nos167-169.

The Church is fronted by a four-storey block over partial basement on the north side, with the main hall set behind and a two storey link block between. The church has a brick street façade with a gabled centrepiece, with lancet windows over a triple arched porch, flanked by a single bay on each side with the top storey set into the steeply pitched pantile roof with large dormers. The presbytery on the right-hand side of the church, was constructed later has a three storey front elevation with a setback fourth storey.

The party wall arrangement to the church side has two different sections. On the main front building there is a double wall structure between No161 and the taller front building of the church, while at the rear the c1992 extension to No161 enclosed on the wall to the link section.

Works will require a Party Wall Award for any works.

Planning records indicate that only minor works have been carried out to the Church building with a single storey rear extension to the presbytery built c2000, wheelchair access at the front c2000 and alterations to the front railings c2007.

Reference to the 1946 aerial photograph indicate the presence of other extensions on the south side

which may be original or added pre 2000 and not covered by the planning records. These include the side chapel to the rear of No161 and the side extension. These will not be affected by the proposed works.

6.2.3 ORT HOUSE / 126 ALBERT STREET

The island site to the rear of the houses along Arlington Road was originally occupied by Park Chapel School from the 1870s until after WWII, when the site was redeveloped as the Curry and Paxton's optical works. This building was demolished, and the site redeveloped again c1972 to the current office use.

The current building includes a large basement, but this does not extend near No161.

6.3 EXISTING BASEMENTS NEARBY

From visual inspection of the buildings along Arlington Road, the majority have basements as evident in the presence of lightwells. The following table summarises the buildings around 161 Arlington Road with regards to existing basements.

Building	Description	Basement Depth
161 Arlington Road	Existing residential building	Existing basement 2210mm below ground floor/pavement Proposed basement2750mm bgf below ground floor/pavement
Our Lady of Hal	Church built c1933, Presbytery constructed later. Church - partial basement plantroom under centre of front 4 storey building to church. Presbytery has full basement under building.	Plantroom approx. 2700mm below ground floor 2300mm below pavement. As church
159 Arlington Road	Existing residential building	Similar to No161 existing
157 Arlington Road	Existing residential building	Similar to No161 existing
147-155 Arlington Road	Five buildings refurbished c1996. Basement floor lowered.	2600mm below ground floor 2200mm below pavement
140-152 Arlington Road	Building converted from electricity sub-station to community c1979, converted to residential c2018.	Basement 3300mm below ground floor / pavement level
154-160 Arlington Road	Residential building rebuild c2004	Basement 3000mm below ground floor / pavement
128 Albert Road	Warehouse converted into mixed use A3 / residential c1994	Basement 30m from rear wall of No161, 2700mm below ground floor
Ort Centre	Offices built c1972	Basement 21m from rear wall of No161, basement lvl 28.3m, approx. 2.4m below Arlington Road pavement.

7 UTILITIES - SEWERS AND SERVICES

Thames Water record drawings show an existing Thames Water Authority oval sewer running southwards along Arlington Road. TWA records show the sewer dimensions as 1524x940 with an invert level of 7.2m below street level.

Figure 11: Thames Water Sewers

Likewise, the water mains, a 125mm dia pipe runs down Arlington Road, and given the age of the buildings in the area it is likely that other utilities will run within the pavement and roadway.

The Thames Water Ring Main runs to south of the site (between Barrow Hill and Islington, but at a depth of 80m is not affected by the proposed works.

Refer to Figure 51 for full TWA asset plan and manhole schedule.

8 INFRASTRUCTURE AND TUNNELS

No known tunnels or other major infrastructure runs within the site boundary of 161 Arlington Road or within 50m of the site.

- The Northern Line tube tunnels run under Camden High Street, approximately 100m to the east of the site.
- The access to the deep level tunnels under the tube lines is located to the rear of the car park accessed from Underhill Street, approximately 60m from the site boundary.
- The main railway lines to Euston run on the surface approximately 210m to the west.

No161 lies outside the Safeguarding zone for the tube and railway.

The following extracts from TFL's Property Asset map shows the approximate extent of existing railway and tube infrastructure in the vicinity of Arlington Road.

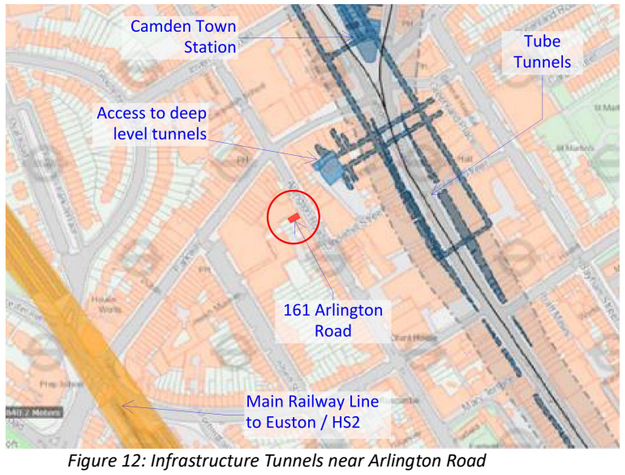


Figure 12: Infrastructure Tunnels near Arlington Road

The Northern Line tube tunnels were originally constructed as part of Charing Cross, Euston and Hampstead Railway running from Charing Cross to Golders Green and Highgate during 1902 and 1907. South of Camden Town the tunnels run under Camden High Street, approximately 100m east of the site, and consist of two pairs of tunnels (Edgware and High Barnet branches) with the northbound tunnels set above the southbound tunnels.

Platform levels are northbound- 14.6m below street level and southbound– 18.3m below street level. The nearest LUL structure is the air shaft in Underhill Street, approximately 50m from site.

The tunnel arrangement south of Camden Town in relation the street plan is shown in the following image.

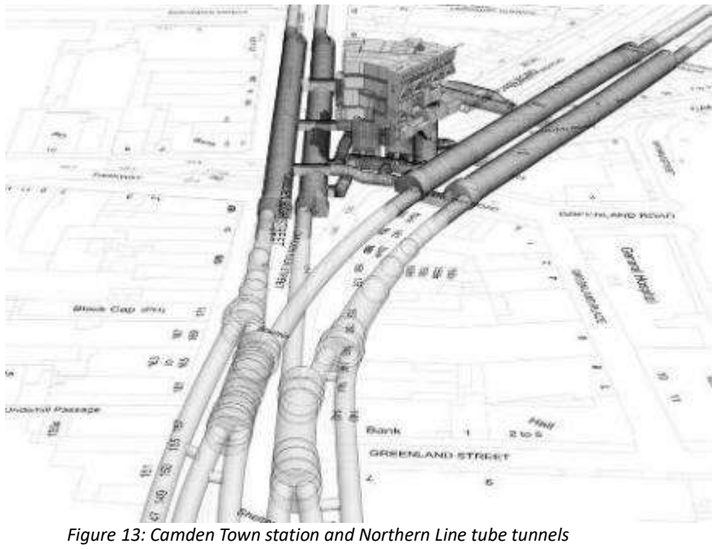


Figure 13: Camden Town station and Northern Line tube tunnels

Deep level tunnels built in 1940-1942 as deep level air raid shelters are also located under Camden Town station, with the two tunnels running beneath the tube tunnels as shown on the following image.

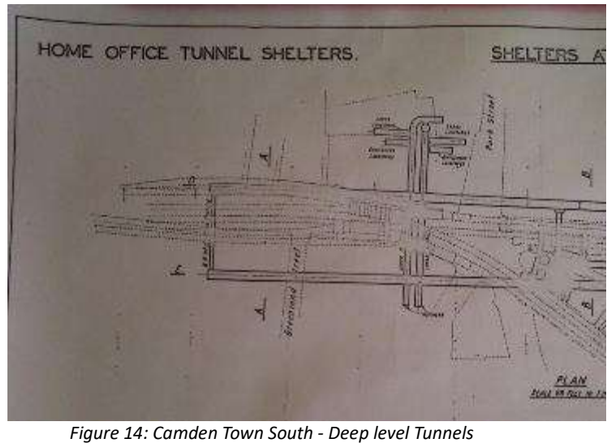


Figure 14: Camden Town South - Deep level Tunnels

The top of these tunnels sits 20.7m below street level, with the access and air shaft located in Stanmore Place, off Underhill Street, being the nearest tunnel structure to the site.

The tunnels were sold by the Government to TFL in 1998 and are now leased by a company for archive storage space.

The railway lines running into Euston Station run in a cutting approximately 240m southwest of site. The route of HS2 will follow the railway lines in the twin-bore Euston Tunnel between the Old Oak Common Station and Euston. The depth of the Euston Tunnel between Old Oak Common Station and Euston will vary between 12 metres and 60 metres to the top of the tunnel. The tunnels safeguarding zone is approximately 210m away from site and the tunnelling will have negligible impact on Arlington Road properties.

No161 lies outside the Safeguarding zone for the HS2 tunnels. Details of the HS2 route and associated safeguarding zones are shown on the following map.

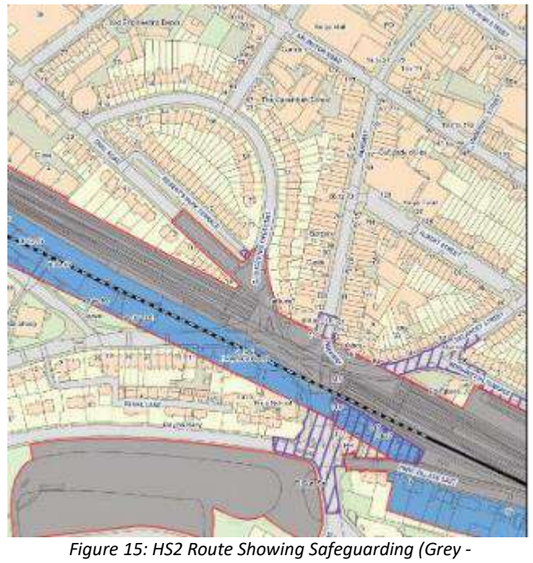


Figure 15: HS2 Route Showing Safeguarding (Grey - surface, Blue-sub-surface)

Refer to Figures 47-50 for full drawings of tube, deep level shelters, railway and HS2 routes and safeguarding zones.

9 FLOODING AND FLOOD RISK

The site is located within the London Borough of Camden (LBC).

Arlington Road does not lie within any of LBC critical drainage areas or local flood risk zones.

9.1 HISTORIC FLOODING

The flooding records held by Thames Water indicate that there have been no incidents of flooding in this area because of surcharging public sewers.

Arlington Road in not listed on LBC Flooded Street List (Flood events 1975, 2002, or 2021).

9.2 FLOOD RISK

Reference to the Environment Agency's Flood Risk for Planning shows the site to lie within Flood Zone 1, an area with a low probability of flooding.

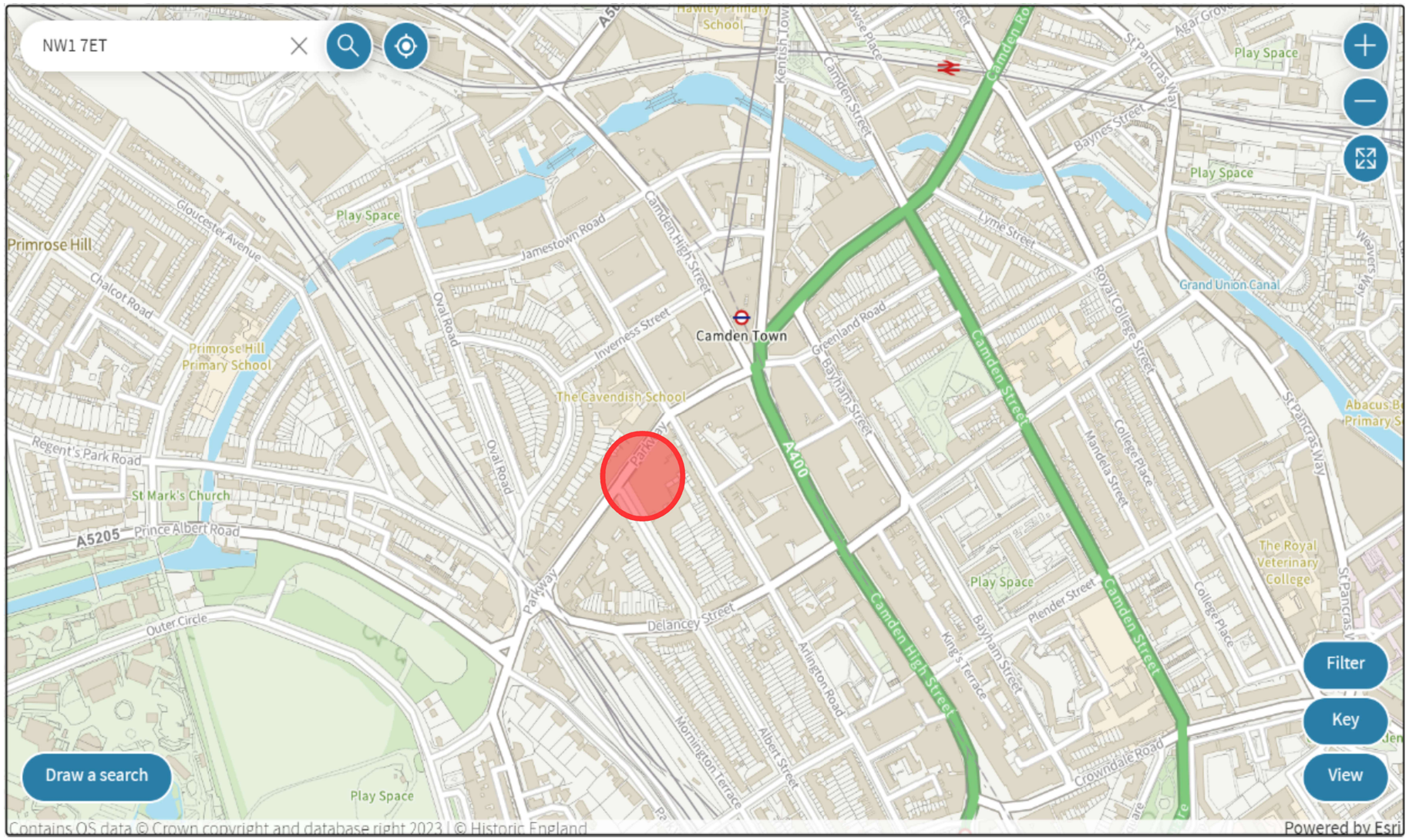
Reference to Environment Agency's long term flood risk maps shows the following:

Rivers and the sea (fluvial) flooding	Very low risk (chance of flooding of less than 0.1% each year).
Surface water (pluvial) flooding	Very low risk (chance of flooding of less than 0.1% each year).
Reservoirs	Flooding from reservoirs is unlikely in this area.
Groundwater	Flooding from groundwater is unlikely in this area.

As the site is in Flood Zone 1 and is less than 1 hectare a sequential test and full Flood Risk Assessment is not required.

Refer to Figures 52-57 for EA Flood map for planning, long term flood risk maps, and LBC maps on drainage.

A) DESK STUDY FIGURES



A 1. Location of Site

Site map showing present day site in relation to surrounding area and infrastructure.

Numbers 157, 159 and 161 Arlington Road NW1 7ET are Grade II listed (List Entry Number: 1272258)