



BASEMENT IMPACT ASSESSMENT

FOR

PROPOSED BASEMENT WORKS

AT

**23 HILLSIDE ROAD
LONDON
N15 6LU**

FOR

Petley Ltd

ISSUE 1.0 – ISSUED FOR BIA

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1.00 INTRODUCTION

- 1.1 Clearly Ahead Consultants has been appointed to prepare a Basement Impact Assessment Report to support the Planning Application for the proposed new single storey basement at 23 Hillside Road, London N15 6LU.
- 1.2 The existing site is currently occupied by a two storey mid-terrace house with. The property currently has a half storey height cellar extending under part of the main house foot print; the property was built at the end of the 19th century.
- 1.3 The existing property is not located within any Haringey Council Conservation Area and is not Listed.
- 1.4 The site is bounded by 21 Hillside Road to the East, Hillside Road to North, 25 Hillside Road to the West and by Allan Barclay Close to the South.
- 1.5 The proposed works the construction of a single storey basement which will extend under the entire footprint of the main house with a light well to the front paved garden.
- 1.6 This document will address the specific issues relating to the basement construction, as described in Haringey Basement Development Guidance Note dated June 2012, and reflect the approach presented in the Camden basements Planning Guidance CPG4 particularly in respect of the scope of screening stages.

2.00 BASEMENT PROPOSALS

- 2.1 The architectural details of the proposal for the new basement under the existing house, are shown on AJ Plans drawings.
- 2.2 The details of the existing structure and site boundaries will be subject to detailed exploratory work prior to and during the works on-site.
- 2.3 The design and construction of the building structure shall be in accordance with current Building Regulations, British Standards, Codes of Practice, Health and Safety requirements and good building practice.

3.1 SUBTERRANEAN (GROUND WATER) FLOW

3.2 Stage 1: Screening

The impact of the proposed development on ground water flows is considered here as outlined in Haringey Basement Development Guidance Note.

- 3.2.1 GW Q1a *Is the site located directly above an aquifer?*
- No. With reference to the extract of the Environment Agency Groundwater Map (Figure (a)) the site is not located above an aquifer.
- 3.2.2 GW Q1b *Will the proposed basement extend beneath the water table surface?*
- Unknown at time of screening. This shall be confirmed by full depth trial excavation prior to commencement of works.
- 3.2.3 GW Q2 *Is the site within 100m of (i) a watercourse, (ii) a well (used or disused) or (iii) a potential spring line?*

No. With reference to the Geological, Hydrogeological and Hydrological Study (Figures (b) and (c)),

- (i) The nearest surface water features are the Clapton Pond located approximately 700m to the South-East of the site. The nearest 'lost' watercourse is the River Hackney Brook which ran approximately 3000m to the South-West of the site.
- (ii) From the British Geological Society 'Geoindex' the nearest water well is on Moundfield Road located approximately 500m to the East of the site.
- (iii) The local geology suggests that the site is located approximately 250m to the North of the potential spring line located near the interface between Langley Silt Member and London Clay Formation.

- 3.2.4 GW Q3 *Is the site within the catchment of the pond chains of Hampstead Heath?*
- No. The site is far away from this area and not in close proximity to any other pond chains.

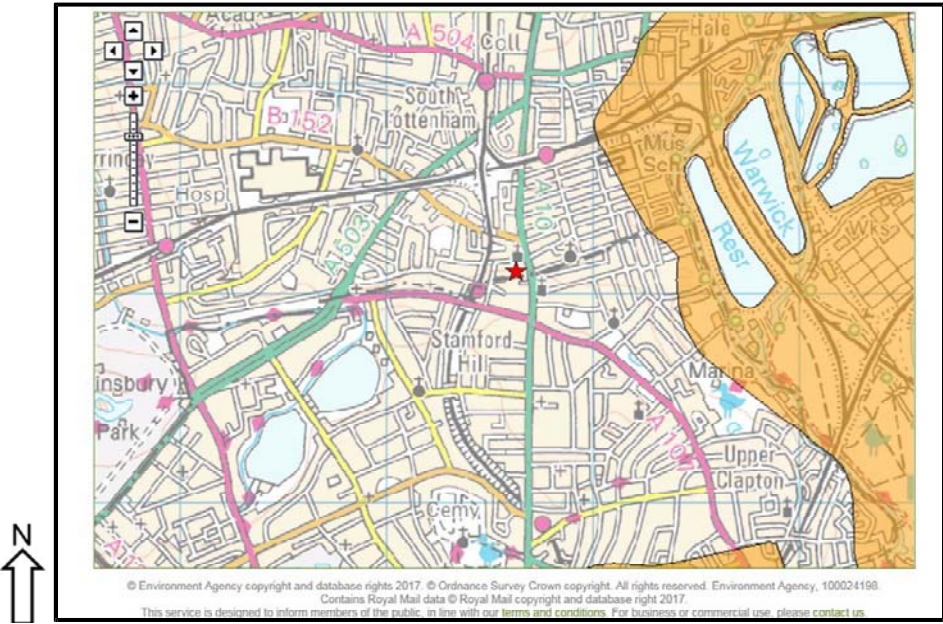
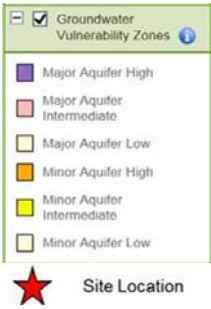


Figure (a)
Aquifer Designation Map
(Extract from Environment Agency Groundwater Map)

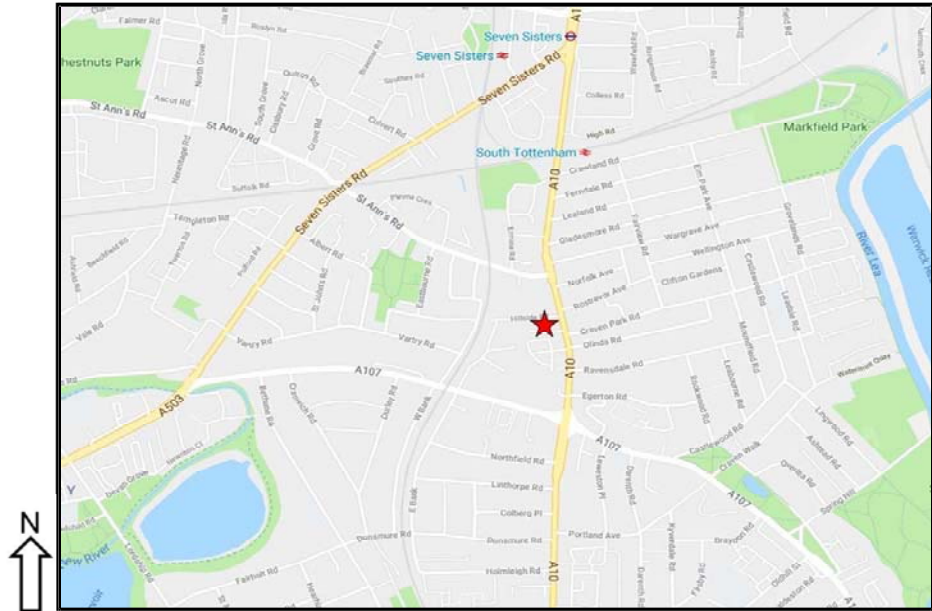
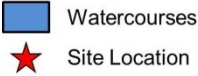


Figure (b)
Surface Watercourses

- 3.01.5 GW Q4 *Will the proposed basement development result in a change in the proportion of hard surface/paved areas?*
- No. The footprint of the proposed new basement is slightly greater than the footprint of the existing house, as it extends to part of the front garden. However this is currently fully paved.
- 3.01.6 GW Q5 *As part of the site drainage, will more surface water (e.g. rainfall and-runoff) than at present be discharged to the ground (e.g. via soakaways and /or SUDS)?*
- No. All the surface water will be collected as before.
- 3.01.7 GW Q6 *Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond (not just the pond chains on Hampstead Heath) or spring line?*
- No. there are no local pond chains or spring lines.
- 3.1.8 On the basis of items 3.01.1 to 3.01.7 above the aspects that should be carried forward to a scoping stage in respect of groundwater are:
- The level of the water table not being known.

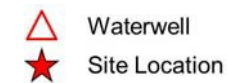


Figure (c)
Waterwells (also showing Infrastructure)
(Extract from British Geological Survey)

3.2 Stage 2: Scoping

- 3.2.1 The potential impacts which will need to be considered will include:-

Whether the basement extends below the water table and whether it will impact on the groundwater flow regime.

- 3.2.2 In response to the above issues: -

A full depth trial excavation will be carried out prior to the main basement works commencement to assess the presence of ground water and confirm the soil conditions.

3.3 Stage 3: Impact Assessment

- 3.3.1 Assuming that during the full depth trial excavation no ground water will be found the basement construction will not have any negative impact on the ground water flow regime.
- 3.3.2 If ground water will be found during the trial excavation, construction techniques will be adapted to prevent ground water ingress to the excavation during construction.

4.1 GROUND STABILITY

4.2 Stage 1: Screening

4.2.1 GS Q1 Does the existing site include slopes, natural or manmade, greater than 7°?

No. Aerial views and local mapping show that no slopes >7 degrees within the site.

4.2.2 GS Q2 Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7°?

No. The basement construction will not change the profile of the ground at the boundaries of the property.

4.2.3 GS Q3 Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°?

No. With reference to the Topography Map (refer Figure (f)) we assessed that in the neighbouring areas there is a railway embankment with slopes greater than 7 degrees but is located approximately 170 metres from the site.

4.2.4 GS Q4 Is the site within a wider hillside setting in which the general slope is greater than 7°?

No. With reference to the Topography Map (refer Figure (f)) we assessed that the site is on a generally flat area.

4.2.5 GS Q5 Is the London Clay the shallowest strata at the site?

Yes. With reference to British Geological Survey Maps, the shallowest soil stratum is London Clay Formation which extends at depth (Figure (d)).

4.2.6 GS Q6 Will any trees be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?

No. There are no trees within the site boundary but there are mature trees within the nearby properties rear garden and along Allan Barclay Close.

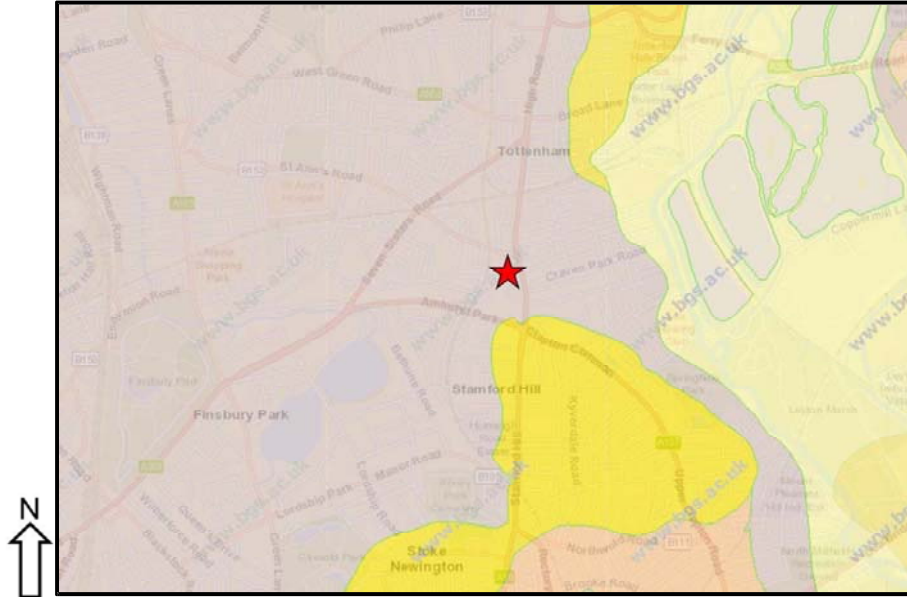


Figure (d)
Geological Map, Bedrock Geology
(Extract from British Geological Survey)

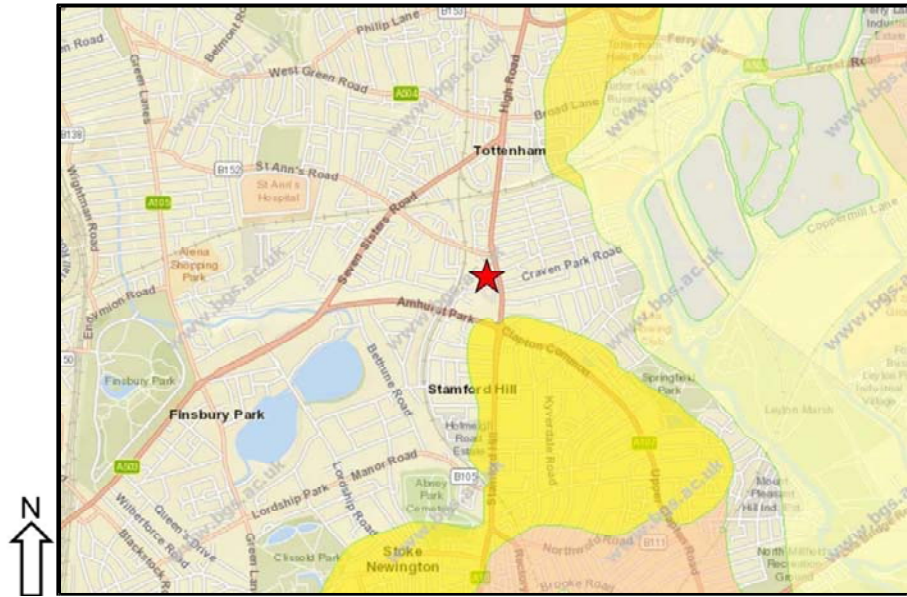


Figure (e)
Geological Map, Superficial Deposits
(Extract from British Geological Survey)

4.01.7	GS Q7	<i>Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?</i> To be confirmed. The London Clay Formation, which the site shallowest soil stratum, is normally classified as having high potential of shrink/swell, so there is a theoretical risk. However a walkover survey will be required to confirm.
4.01.8	GS Q8	<i>Is the site within 100m of a water course or a potential spring line?</i> No. The local geology suggests that the site is located approximately 250m to the North of the potential spring line located near the interface between Langley Silt Member and London Clay Formation.
4.01.9	GS Q9	<i>Is the site within an area of previously worked ground?</i> No. With reference to the British Geological Survey Superficial Deposits Map (refer Figures (e)), the nearest areas of worked ground are located in correspondence of the Warwick Reservoirs, located to the East of the site.
4.01.10	GS Q10	<i>Is the site within an aquifer?</i> No. With reference to the extract of the Environment Agency Groundwater Map (Figure (a)) the site is not located above an aquifer.
4.01.11	GS Q11	<i>Is the site within 50m of the Hampstead Heath ponds?</i> No. The nearest ponds in the Hampstead Chain are not in close proximity to the site. However the site is in proximity to the Warwick Reservoirs located 1000m to the East and to the East Reservoir located 800m to the South-West.
4.01.12	GS Q12	<i>Is the site within 5m of a highway or pedestrian right of way?</i> Yes. The proposed basement will be less than 5m from the public highway.
4.01.13	GS Q13	<i>Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?</i> Yes. The adjoining properties are assumed to have shallow foundations. It is likely that the basement will be deeper than the foundations of adjoining buildings, which we assume have a cellar but do not have basement.

 Contour Lines
 Site Location

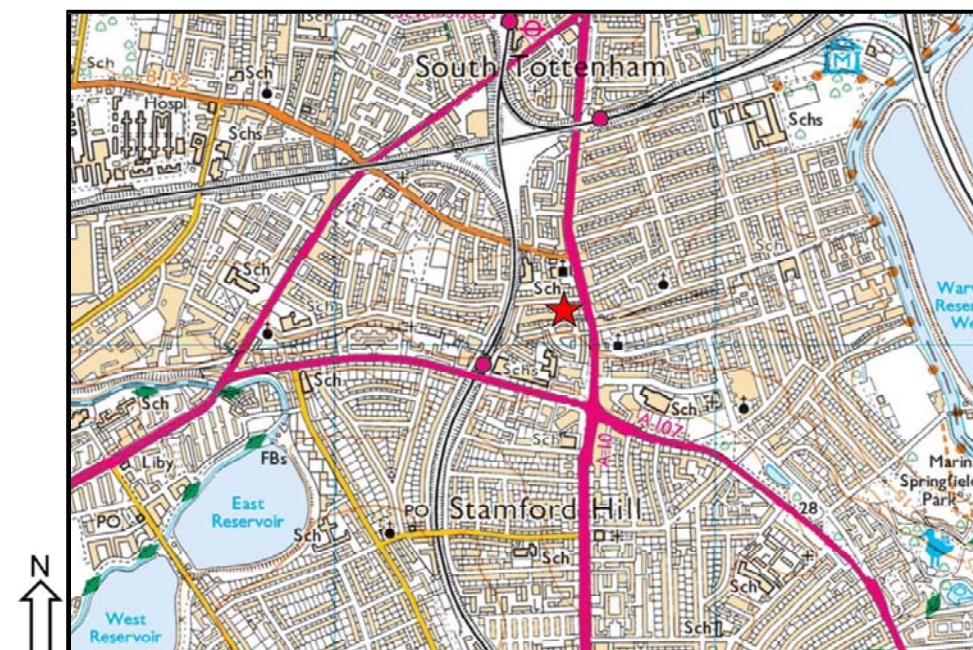


Figure (f)
Topography Map
(Extract from Ordnance Survey Mapping)

4.1.14 GS Q14 *Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?*

No. With reference to Open Street Map (figure (h)) there are no tunnels located below the site. The nearest tunnel is the Victoria Line located approximately 700m to the North-West of the site.
A railway line is located approximately 120 metres West of the site.

4.1.15 On the basis of items 4.01.01 to 4.01.14 above the aspects that should be carried forward to a scoping stage in respect of land stability are:

- The site being in underlain by London Clay Formation.
- The site being within 5m of a public highway.
- The works increasing the differential foundation depth with adjoining buildings.
- Confirmation as to whether there has been any shrink-swell subsidence on the site.

— Train Lines
★ Site Location

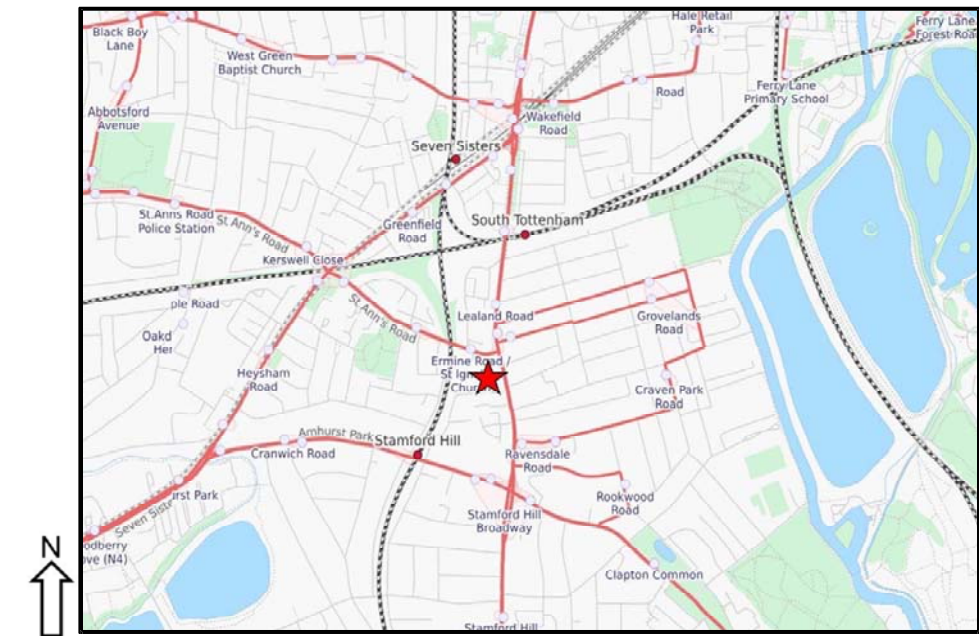


Figure (h)
Map of Underground Infrastructure
(Extract from Open Street Map)

4.2 Stage 2: Scoping

4.2.1 The potential impacts which will need to be considered will include:-

- Any existing subsidence issues on the site or adjoining which might be exacerbated by the proposed works.
- The assessment of any structural damage which could be caused by excavation in proximity of buildings with shallow foundations.
- The risk of damage to the road or pavement, or any underground services buried under.

4.2.2 In response to the above issues: -

- A site walkover prior to work commencement will review any subsidence issues on the site.
- Consideration will be given to ground stability in the development of detailed proposals.
- The construction method will consider the proximity of the adjoining buildings to mitigate the risk of any damage.

4.3 Stage 4: Impact Assessment

- 4.3.1 The proposed basement is single storey and will be excavated through the made ground and then through the London Clay Formation stratum. Provided appropriate construction methods are employed there should be no significant impact in terms of ground stability.
- 4.3.2 The new basement will be generally constructed by underpinning the existing party walls and rear elevation to be retained while cantilevered reinforced concrete (RC) retaining walls cast in panels not exceeding 1.0m in width, on the same 'hit and miss' basis as the underpinning, will be used outside the footprint of the existing building. This is a well-established method and used successfully on numerous single storey basements within the London Clay Formation strata. Sacrificial shutters should be considered if underpinning in pockets the looser Made Ground material.
- 4.3.3 To the front of the building the basement lightwell will be in close proximity to the public highway and adjoining footpath. The services in the pavement will be scanned and marked prior to the commencement of the works. The reinforced concrete retaining walls will be designed for the additional surcharge from the loading of the road including accidental wheel loads on the pavement. Additional temporary propping will be provided during construction to minimise any local ground movements which might affect services in the pavement or the integrity of the road.
- 4.3.4 Even if the London Clay is the shallowest strata we are not anticipating any signs of subsidence at the property; this will be confirmed during the site walkover.
- 4.3.5 We are not anticipating any ground water being found within the Made Ground strata therefore only minor flows of perched water into the excavation must be expected, in quantity manageable by sump pumping.

5.00 SURFACE FLOW AND FLOODING

5.1 Stage 1: Surface Flow and Flooding Screening

- 5.1.1

SF Q1

Is the site within the catchment of the pond chains on Hampstead Heath?

No. The site is far away from this area, but is in close proximity of the Warwick Reservoirs and to the East Reservoir.
- 5.1.2

SF Q2

As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?

No. On completion of the development, the surface water flows will be routed in the same way as the existing condition, with rainwater run-off collected in a surface water drainage system and ultimately discharged to the public sewer.
- 5.1.3

SF Q3

Will the proposed basement development result in a change in the proportion of hard surface/paved external areas?

No. There will not be an increase in impermeable area as a result of the development and the basement will extend beneath existing hardstanding areas. Overall, there will not be a net increase in impermeable area and there will not be an increase in runoff rate or runoff volume as a result of the proposed development.
- 5.1.4

SF Q4

Will the proposed basement result in changes to the profile of inflows (instantaneous and long term) of surface water being received by adjacent properties or downstream watercourses?

No. The flows from run off will be as before.
- 5.1.5

SF Q5

Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream water courses?

No. The surface water quality will not be affected by the development, as in the permanent condition collected surface water will be generally be from roofs, or external hard landscaping as existing.
- 5.1.6

On the basis of items 5.01.1 to 5.01.5 above, no aspect should be carried forward to a scoping stage in respect of Surface Flow and Flooding.

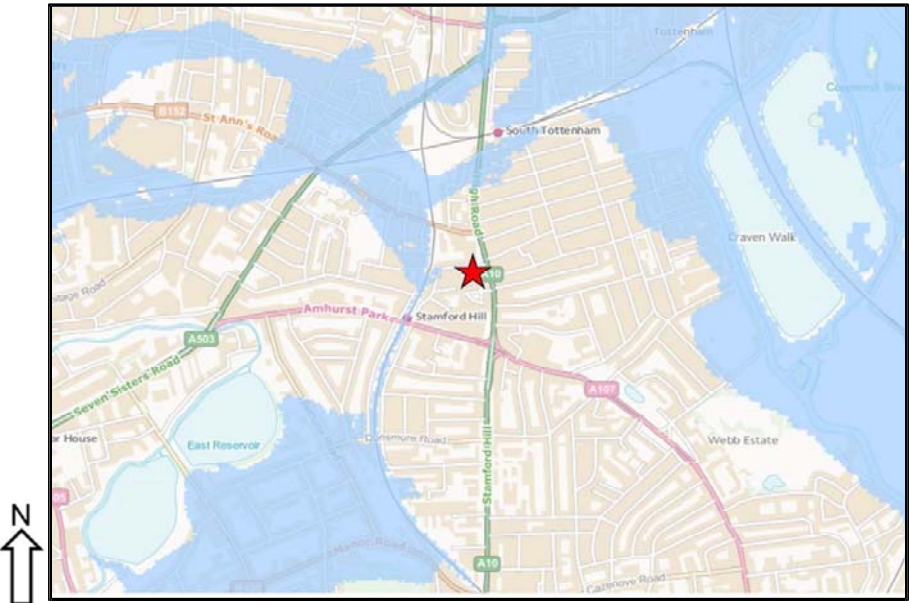


Figure (i)
Areas at Risk of Flooding from Rivers or Sea
(Extract from Environment Agency flood map)

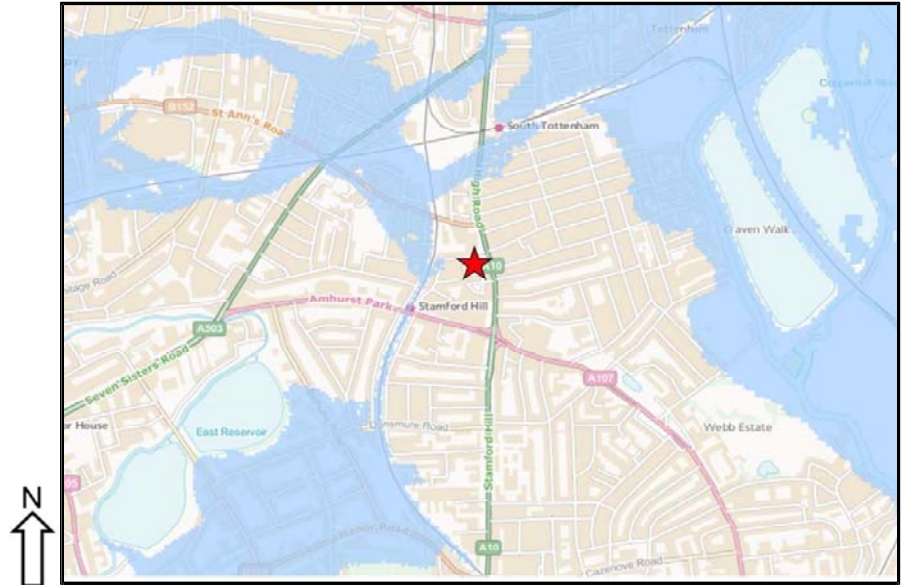
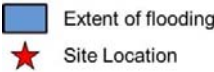


Figure (j)
Areas at Risk of Flooding from Reservoirs
(Extract from Environment Agency flood map)

5.1.7 SF Q6 *Is the site in an area known to be at risk from surface water flooding, or is it at risk from flooding, for example because the proposed basement is below the static water level of a nearby surface water feature?*

With reference to the EA Rivers and Sea Flood Maps (Figure (i)), the site is not located within a flood risk zone. The EA Reservoir flood map (Refer figure (j)), shows that the site is not at risk of flooding from reservoirs.

With reference to the EA surface water flooding maps (Figure (l)) the site is at 'low to medium risk' of flooding.

5.1.8 On the basis of the above a flood risk assessment is not required.

5.1.9 Due to the low to medium risk of surface water flooding, all basement drainage will be fitted with PPDs (Positive Pumped Devices).

★ Site Location

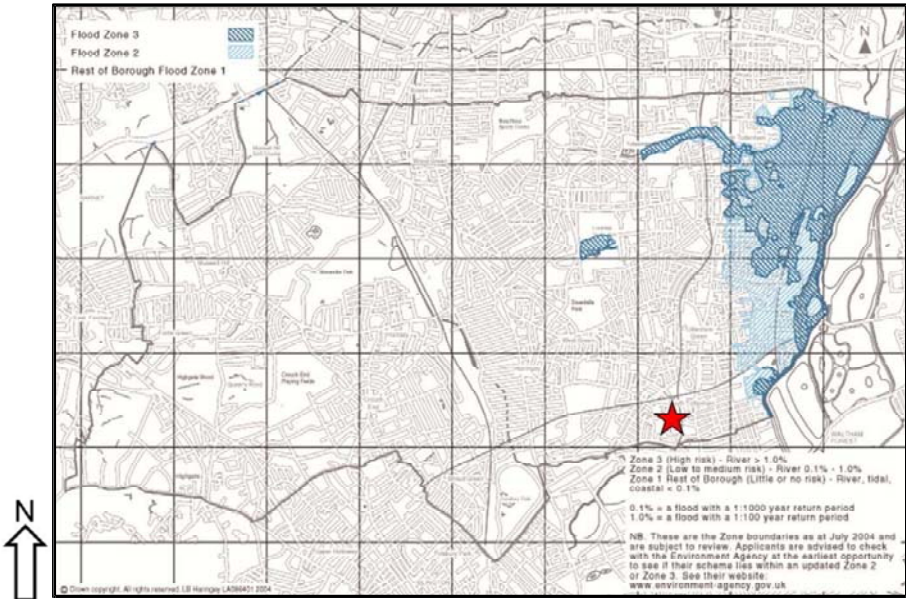


Figure (k)
Flood Zones in Haringey
(Extract from Appendix 4 of Haringey Draft Basement Development Guidance Note)

High
Medium
Low
Very Low
★ Site Location

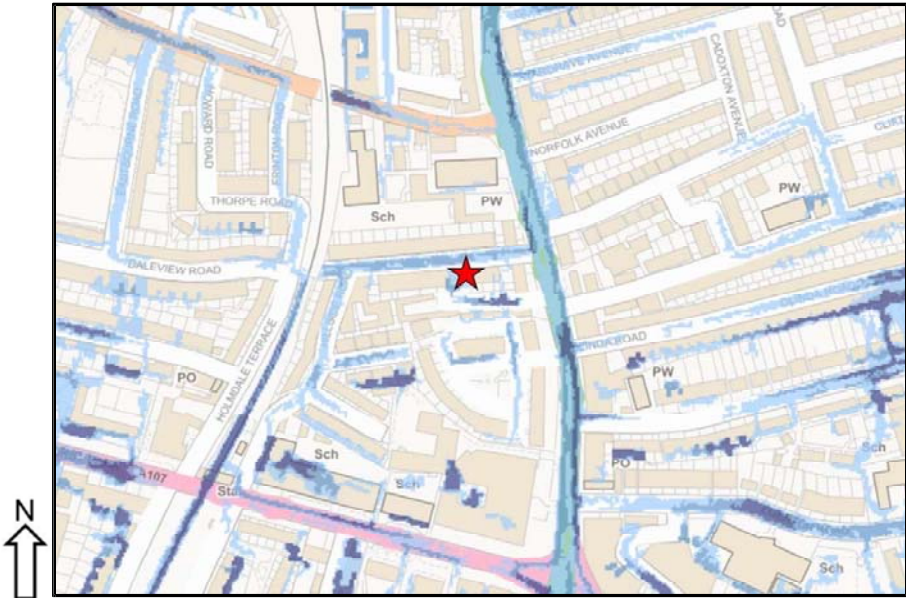


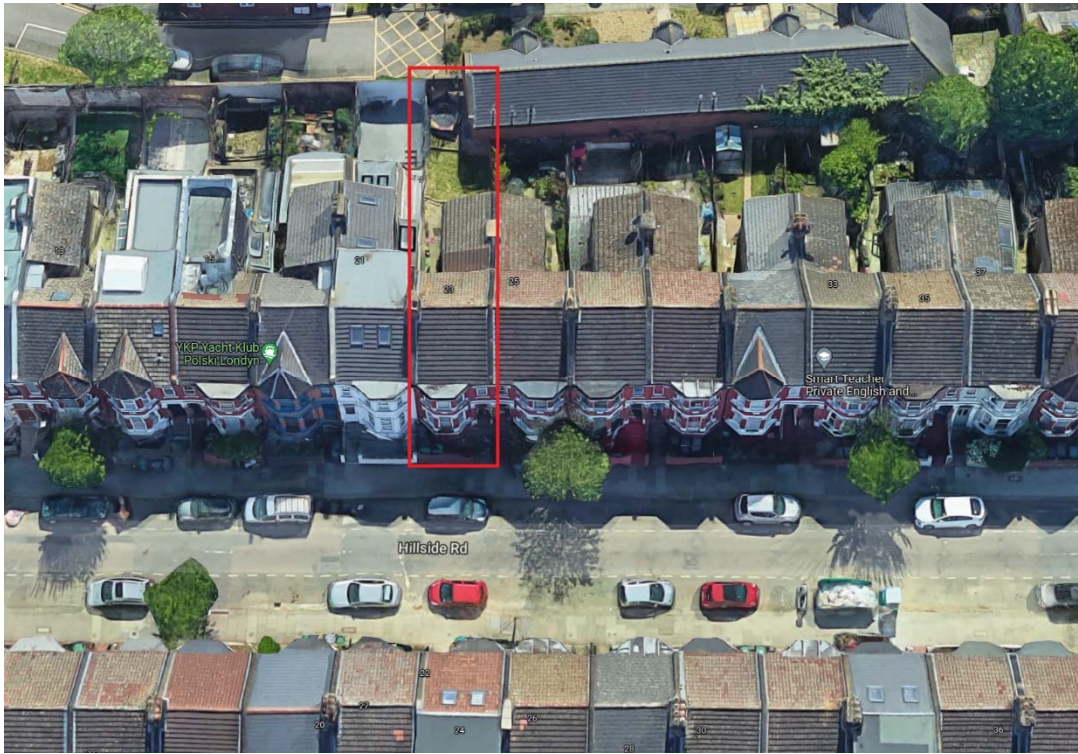
Figure (l)
Flooding from Surface Water (Extract from Environment Agency flood map)

APPENDIX A

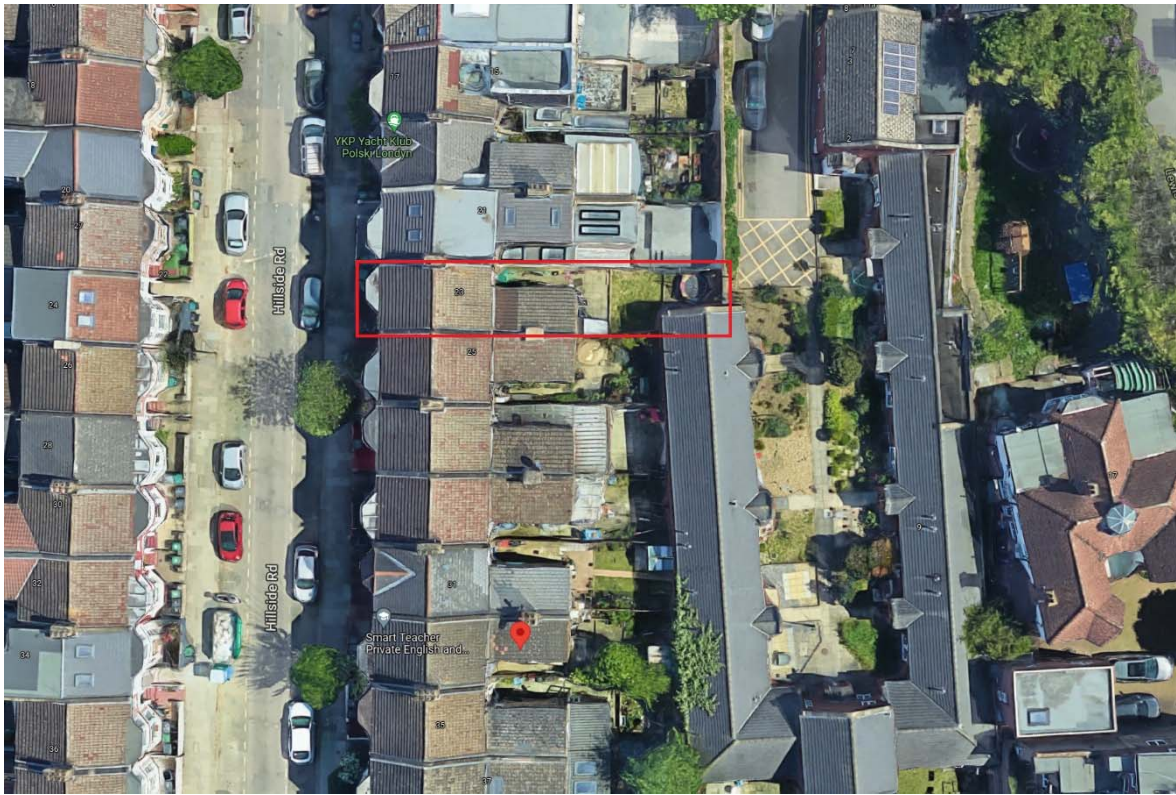
PHOTOGRAPHS



Photograph 1



Photograph 3



Photograph 2



Photograph 4