

**Job Number: 15-139**  
**Date: 24 June 2015**

## Basement Structural Method Statement

Planning Application for 269 Goldhurst  
Terrace, London, NW6 3EP

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Additional contributions by QTS Environmental and Chelmers Site Investigations

### **Property Details:**

**Flat 3**  
**269 Goldhurst Terrace**  
**London**  
**NW6 3EP**

### Client Information:

Mr and Mrs Michael Smith  
Flat 3  
269 Goldhurst Terrace  
London  
NW6 3EP

Revision	Date	Comment
-	24/06/15	First Issue

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## I. Design Information - Structural

### Existing Property

The existing building is a purpose built apartment block. The external walls are constructed from brickwork. Some of the internal walls are also constructed from masonry and these are assumed to be load-bearing. Structural steelwork is also assumed to exist within the building. There is a front yard and a rear garden. The property concerned is the ground floor flat, one of three.



*Figure 1: Front View*



Figure 2: View from south

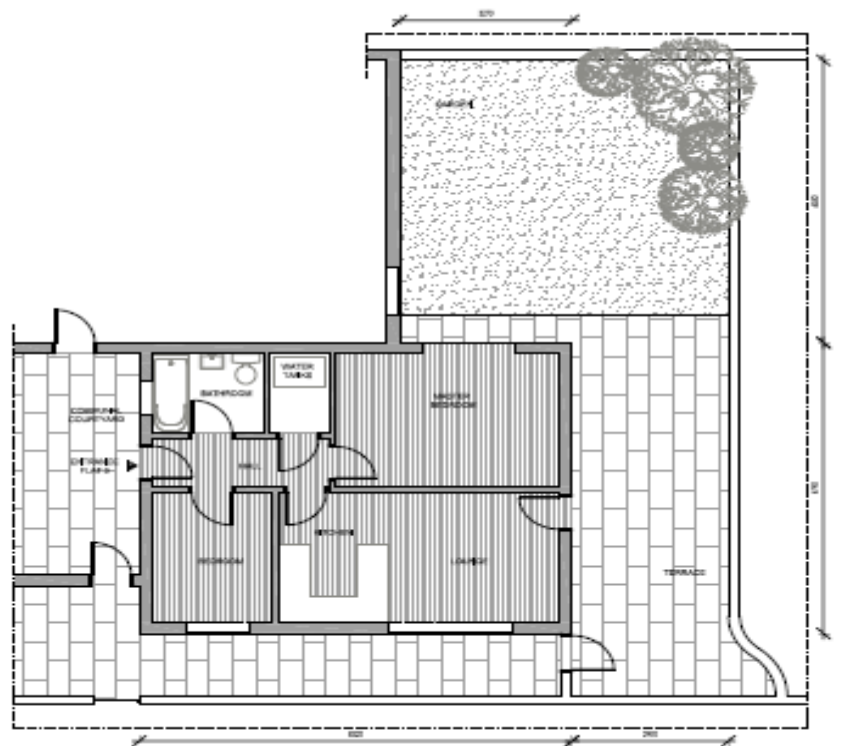


Figure 3: Existing Plan

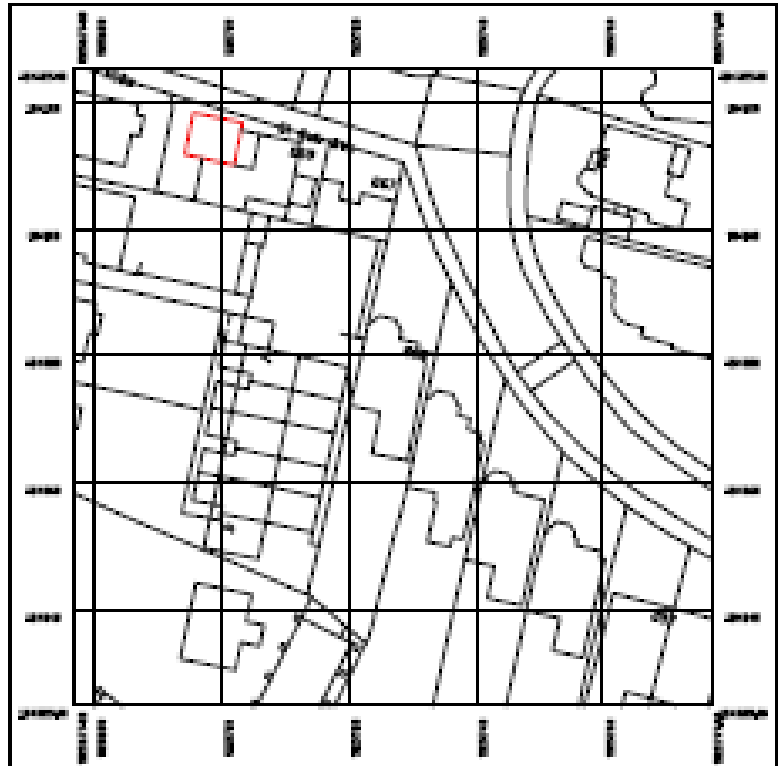


Figure 4: Street plan

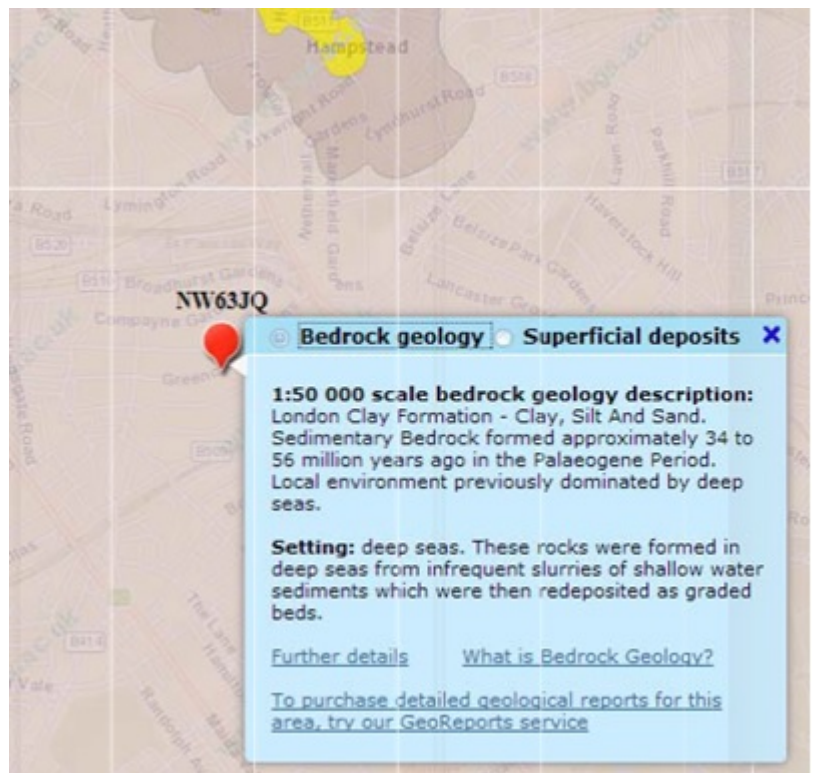


Figure 5: British Geological (BGS) Maps showing underlying strata

A

**Maintain Structural Stability of the building & Neighbouring Properties.**

The appended drawings show the reinforcement and construction required to maintain stability of the property, the neighbouring buildings and the garden.

The results of these calculations are shown in Stage 10 (Impact Assessment)

B

**Avoid Adversely Affecting drainage and Run off.**

There will be a minor increase in the area of hard standing. The run off will not be altered significantly.

The property will not affect the main aquifer. See

Screening Stage information

C

**Avoid Cumulative Impact upon Structural Stability or the water environment.**

See screening stage that indicates the location in relation to water course and Hampstead Heath catchment.

See Stage 10 Impact Assessment and drawings. The structure is designed to take account of a hydrostatic head on the basement.

D

**Harm the Amenity of Neighbours**

Noise and nuisance has been considered in Stage 10

E

**Loss of Open Space or Trees**

There is no loss of open space.

## 2. Basement Impact: Screening

The questions below are taken from the Camden CPG 4 – Basements and Lightwells as well as from Appendix E of the Arup Hydrology report

**Figure 1 – Subterranean flow screening chart**

Groundwater flow

### 1a. Is the site located directly above an aquifer?

**No.** The Environment Agency maps do not show the site to lie above principal aquifer or a groundwater source protection zone. However, studies from these maps indicate the presence of a secondary aquifer below.

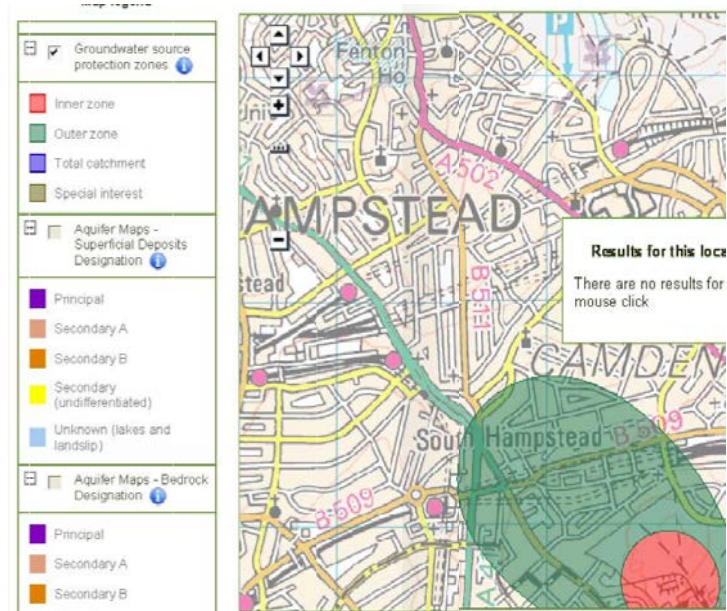


Figure 6: Environment Agency map showing primary and secondary aquifers



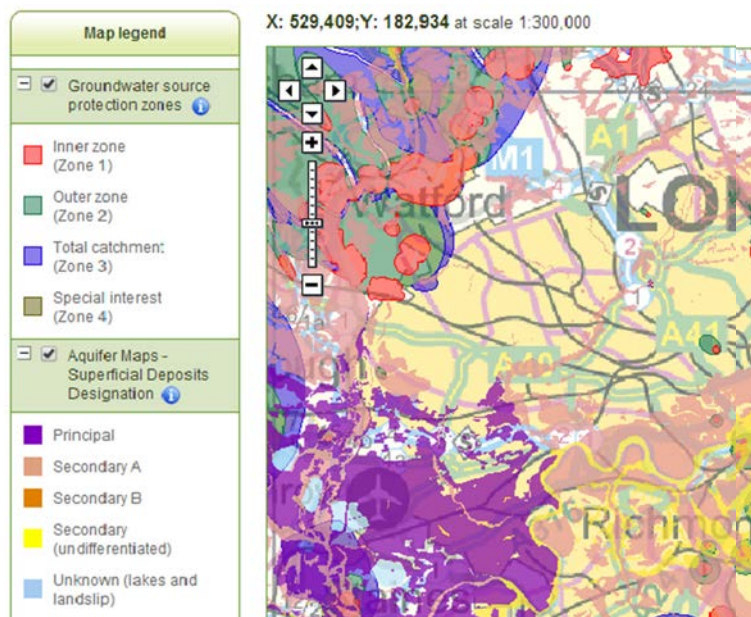


Figure 7: Environment Agency map showing aquifers

**1b. Will the proposed basement extend beneath the water table surface?**

No. Geological maps indicate that the site lies on London Clay. This is not capable of carrying a water table. Borehole logs show no water strikes up to 15.0m.  
Carry forward to scoping stage.

**2. Is the site within 100m of a watercourse, well used/disused or potential spring line?**

**No.** Maps and local walkover survey show no wells, watercourses close to the site. The nearest potential springline approximately 1000m to the north-east of the site, at the boundary between the London Clay and the more permeable Claygate Beds.

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

**No.** The site lies outside the areas which feed into the pond chains on Hampstead Heath, as shown in Figure 14 of The Guidance for subterranean development (Arup, November 2010).



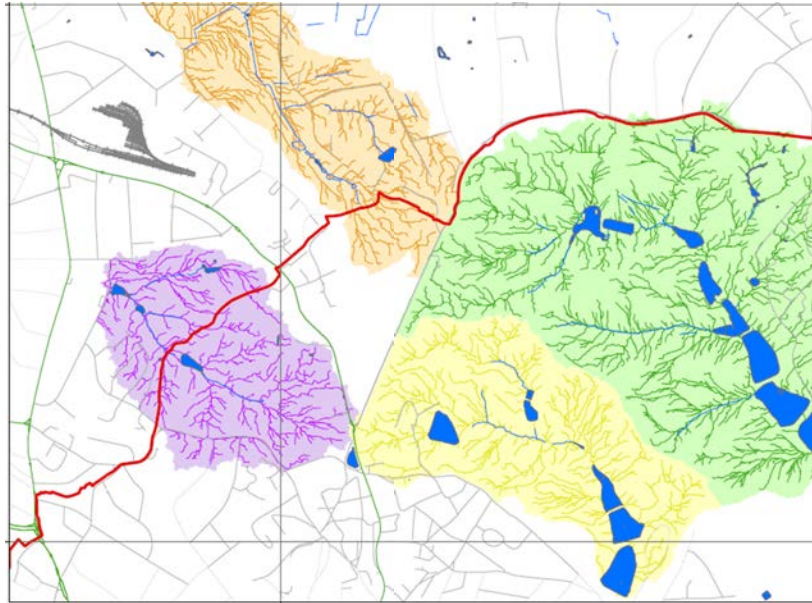


Figure 8: Figure 14 of Arup's report showing surface water catchments (site off map)

**4. Will the proposals basement development result in a change in the proportion of hard surfaced/ paved area?**

**Yes.** There will be a minor increase in the area of hard surfaces to the rear.

**5. As part of the site drainage will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via. Soakaways and or SUDS)?**

**No.** The drainage from the hard surfaces at the front will run into the existing drainage system. Surface water will still discharge to ground.

**6. 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 and local pond (not just the pond chains on Hampstead Heath) or spring line?**

**No.** From a walkover survey and from inspection of OS maps, there are no local ponds or springs of significance. As described in the response to Question 2, the nearest potential springline is not close to the site.

Slope Stability

**Figure 2 – Slope Stability screening flowchart**

**1. Does the existing site include slopes, natural or man-made greater than 7° (approximately 1 in 8)?**

No,



Figure 9: Figure 16 of Arup's report showing slope angle

**2. Will the proposed reprofiling of landscaping at the site change slopes at the property boundary to more than 7° (approximately 1 in 8)?**

**No.** The proposed profile at the boundary of the property will remain unchanged.

**2. Does the development neighbouring land including railway cuttings and the like with a slope greater than 7° (approximately 1 in 8)?**

**No.** The slope of the adjacent properties appears to match the site.

**3. Is the site within a wider hillside setting in which the general slope is greater than 7° (approximately 1 in 8)?**

**No.** The slope of the wider hillside setting is as per the property, less than 7°. From Figure 16 the slope angle is shown less than 7°

**4. Is the London Clay the shallowest strata on site?**

**Yes.** The site sits on the London Clay formation.

**5. Will any tree/s be felled as part of the proposed development and/or are any of the works proposed within any tree protection zones where trees are to be retained?**

**No.** No local trees are to be felled. The impact of the basement on these trees should be considered

**Carry forward to scoping stage.**

**6. Is there a history of seasonal shrink-swell subsidence in the local area, and/ or evidence of such effects at the site?**

**No.** From the walk over survey, subsidence was not considered an issue.

The site is on shrinkable ground and as such has an increased risk to subsidence. The basement and all foundations will be designed to take account of the ground conditions. The basement construction places the loads of the property on to deep ground. The depth further protects the building from the seasonal changes in the ground.

**7. Is the site within 100m of a watercourse or a potential spring line? No.**

OS maps and a local walkover survey show no wells, watercourses. BGS maps show that the nearest soil boundary is over 100m away. Environment Agency data (below) shows that the site experienced flooding in 2002, however the area surrounding the site is not identified as having the potential to be at risk of surface water flooding.

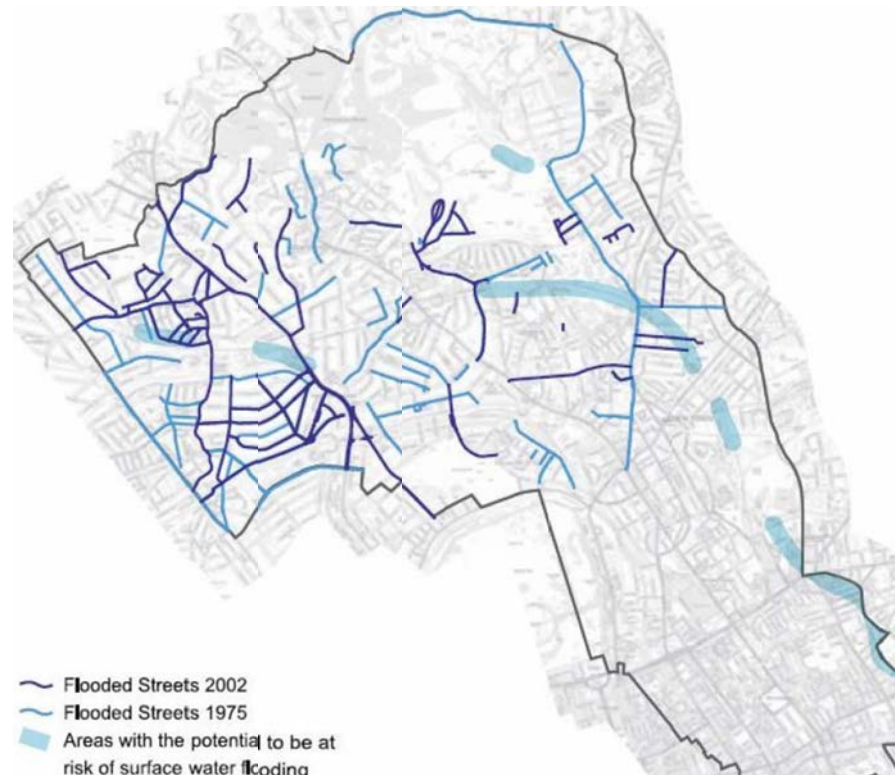


Figure 10: Figure 15 of Arup's report showing flood map

Carry forward to scoping stage

**9. Is the site within an area of previously worked ground?**

**No.** From the historical maps (see Section 6), the site has been residential for the past 90 years. Maps pre-dating the existence of the building do not show any signs of previous construction.

**Carry forward to scoping stage**

**10. Is the site within an aquifer? If so will the proposed basement extend beneath the water table such that dewatering may be required during construction?**

**No.** The Environment Agency maps do not show the site to lie above an aquifer.

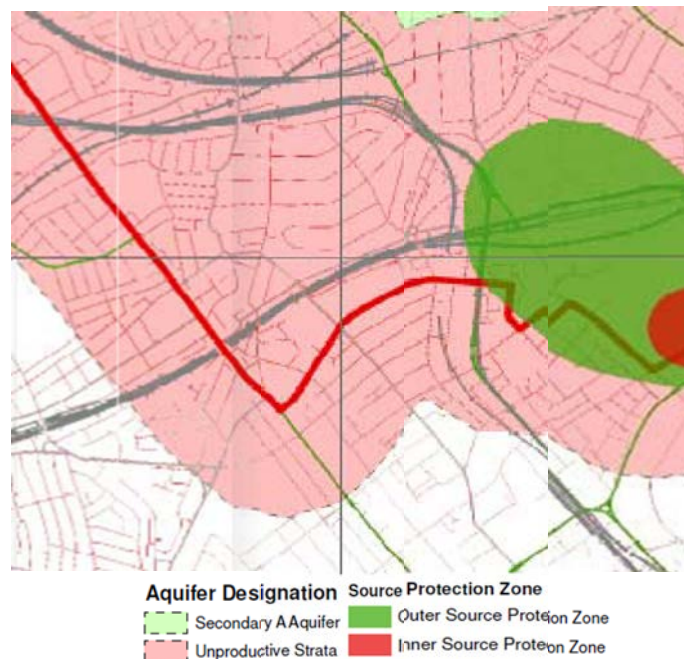


Figure 11: Extract from Camden Aquifer Designation Map (Arup's report, Fig 8)

**Carry forward to scoping stage.**

**11. Is the site within 50m of the Hampstead Heath ponds?**

**No.**

(Arup Report Figure 12)



Figure 12: Extract from Camden Surface water features map (Arup's report, Fig 12)

**12. Is the site within 5m of a highway or pedestrian footway?**

Yes

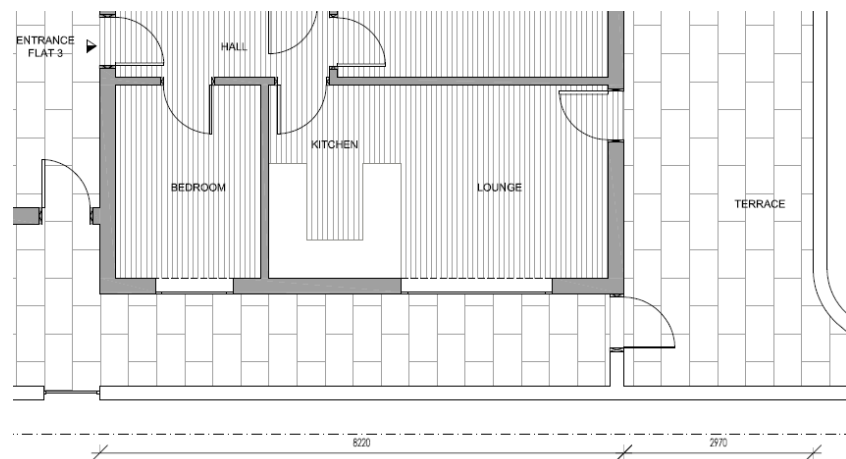


Figure 13: Proximity to public highway

**Carry forward to scoping stage.**

**6. Is the site in an area known to be at risk from surface water flooding, such as South Hampstead, West Hampstead Gospel Oak and King's Cross 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?**

The data from the EA website shows that the site is not within a zone at risk of flooding from rivers.

On Figure 15 of the Camden Geological, Hydrogeological and Hydrological Study (Arup), the street is noted to have flooded in 1975 and 2002. However the precise extent of this along the length of the road is not known.

Carry forward to scoping stage.

### 3. Basement Impact: Screening Maps

Maps supporting the Screening information are included in Appendix A.



## 4. Basement Impact: Scoping

Waterflow

### **Subterranean flow**

Knowledge of the groundwater table is required to see if the basement will impact on the groundwater flow. This is covered by a Soil Investigation.

Soil investigation to be completed with bore holes. The bore holes are to have a stand pipe inserted to confirm the water level.

### **Summary of points raised –**

Slope

The site is over 200m away from the nearest railway tunnels.

Stability

London Clay is expected to be the top layer. A soil Investigation will confirm this. The slope stability of these beds is in the region of 40°. The design of the RC retaining walls will take this into account.

The soil investigation confirms 0.7m deep made ground below the building.

Neither the basement nor the light-well walls are within 5m of the public footpath; a garden surcharge of 2.5kN/m<sup>2</sup> will be applied to retaining walls at the front of the property.

As the party wall is to be underpinned and will leave the party wall with a deeper footing than the neighbours other walls, the design should look at the available bearing capacity.

This proposal is not considered to be in an area where there is a significant risk of flooding.

Surface  
Flow and  
flooding

The flow of surface water from the lightwells is minimal and will be incorporated in the basement drainage.

## 5. Desk Study

### Subsoil conditions

The North London Geological Maps Indicates the site is underlain by London Clay. This is as expected in the area. A soil investigation has confirmed this.

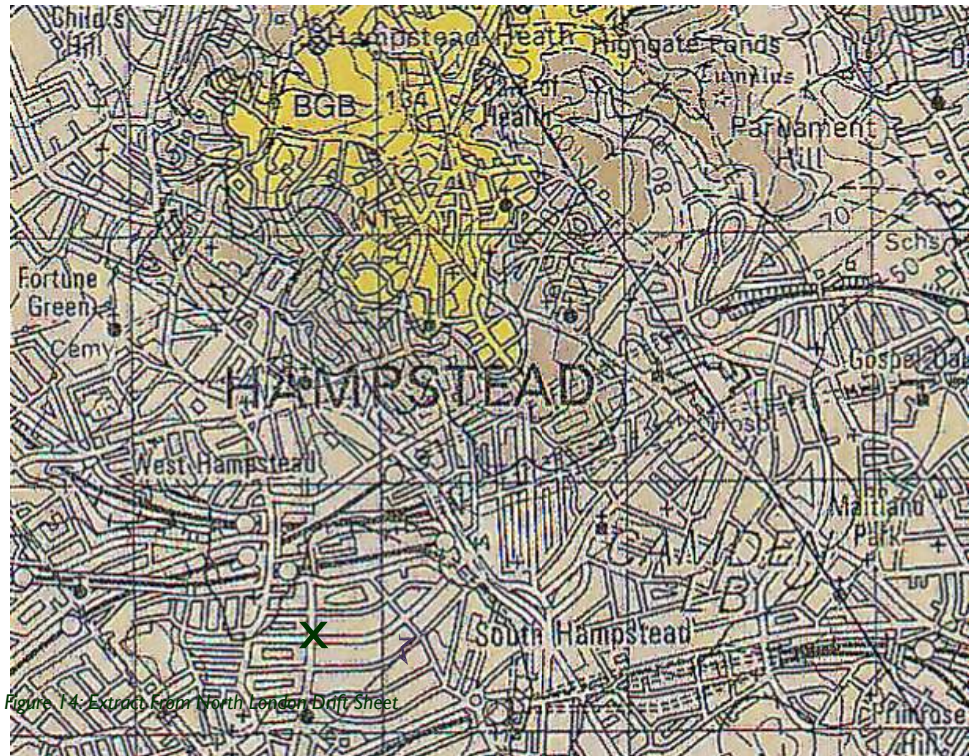


Figure 14- Extract from North London Drift Sheet

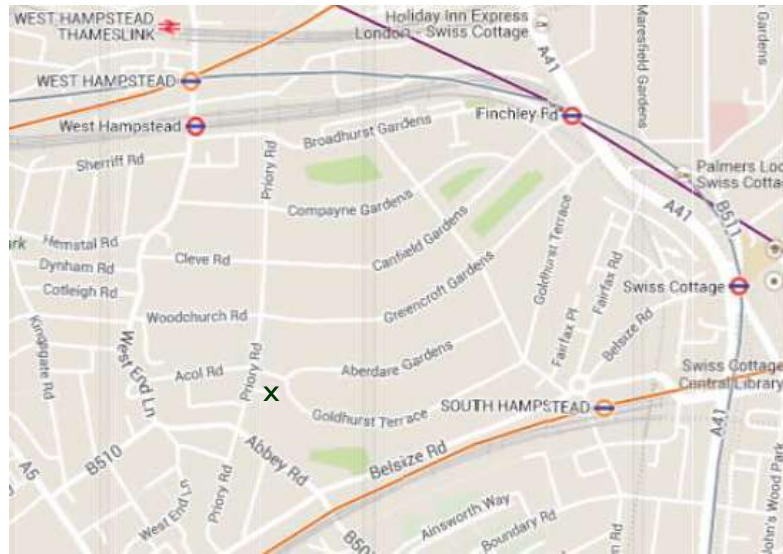


Figure 20: Location of nearby underground railways.

Contaminant  
Sources

From the Historic Maps it can be seen that the ground use has not been conducive to activities leading to poor ground.

During the walk-over survey no items were noted that may lead to contamination.

Water  
Course U

From inspection of current OS maps, no natural water courses or wells exist nearby.

Figures 2 and 11 on the Guidance for subterranean development (Arup's report) indicate approximate water course locations. These are contradictory and the precise location is therefore questionable. Thames Water have relief sewer in the vicinity. This is likely to be carrying the water that would have flown through the watercourses believed to exist as shown on aforementioned Figures 2 and 11. Further investigation will be required to determine the depth and location of the relief sewer.

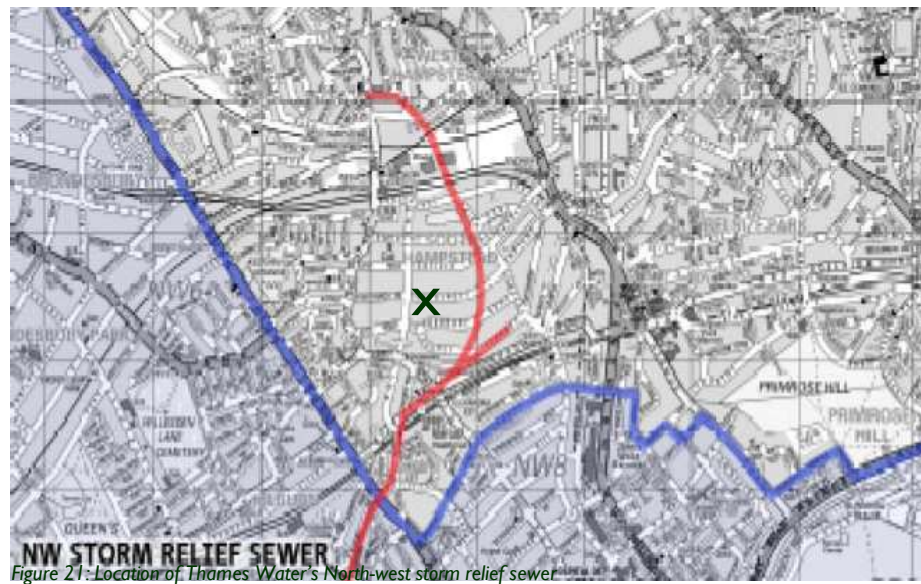


Figure 21: Location of Thames Water's North-west storm relief sewer

The Camden Hydrogeological Study (Arup's report) shows that the nearest street was subject to local flooding in 2002 but the area surrounding the site is not identified as having the potential to be at risk of surface water flooding.

The site is not within the Hampstead pond catchment area as shown Figure 14 of Arup's report.



## 6. Historic Maps



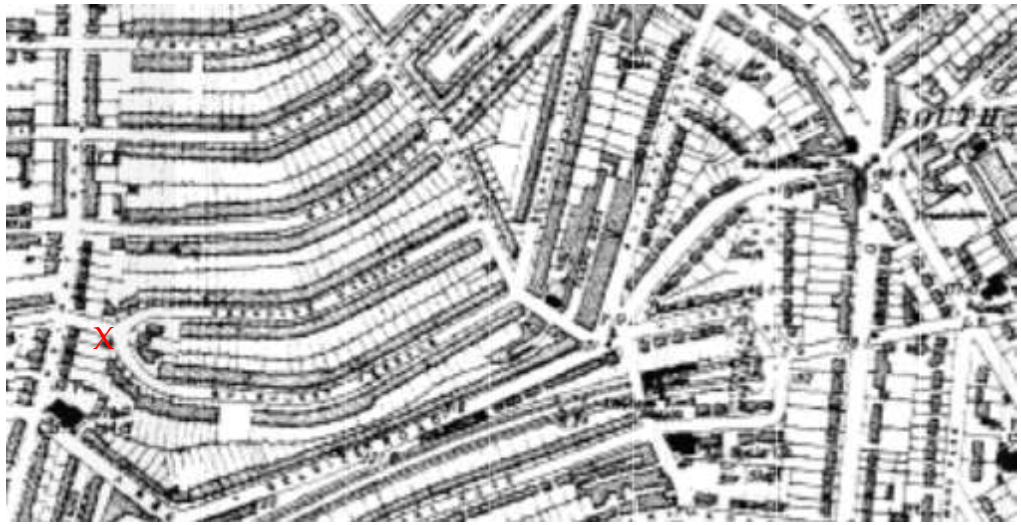


Figure 24: Historic map from 1920



## 7. Flood Risk Assessment

In accordance with guidance from CIRIA and the National Planning Policy Framework, the basement will be designed to be sustainable in terms of the risk to flooding. Amongst other considerations, the design will include provisions to minimise the adverse impacts of flooding on operation of the building, the users, the surroundings and the occupants of nearby properties. This is preceded by a Flood Risk Assessment (FRA) staged as follows:

- A screening study to identify potential sources of flooding.
- A subsequent scoping study to consider further the identified sources, assessing the risks proposing measures to mitigate them.

### 7.1. Site Location

The site is approximately 600m<sup>2</sup> in size. It is located in a densely built-up area. From inspection of OS contours, the site appears to lie on ground which slopes down from north to south, by approximately 1 in 50.

Residential houses exist either side of the site. These buildings are at the same level. There are gardens to the front and rear of the site.

Goldhurst Terrace runs to the front of the site. Immediately to the front, this road is relatively flat. Further to the east and to the west, the road slopes upwards slightly (further to the east and west respectively) with a 1 in 50 slope.

The nearest water course is the Thames Water relief sewer (mentioned previously in Section 5 – Watercourse). This passes within 10m of the proposed basement. The EA has not identified any flood risks associated with the nearby water courses.



Figure 25: Flood map for planning (Environment Agency)

The site is within Zone I, a low probability flood risk area. However, Camden Panning Guidance CPG4 'Basements and Lightwells requires

that a FRA be carried for sites on streets which have been flooded by surface water in 1975 and 2002. Goldhurst Terrace is one of these streets.

## 7.2. Proposed Basement

The proposed basement will be beneath the front half of the existing building. This will include two lightwells to the front.

## 7.3. Screening

The potential sources of flooding are summarized below:

Potential Source	Potential Flood Risk at	Justification
Fluvial flooding	No	EA Flood Mapping shows Flood Zone I. Distance from nearest surface watercourse >1km
Tidal flooding	No	Site location is 'inland' and topography > 40mAOD.
Flooding from rising / high groundwater	No	Site is located on low permeability London Clay.
Surface water (pluvial) flooding	Yes	Recorded in unspecified part of Goldhurst Terrace in 2002
Flooding from infrastructure failure	Yes	Drainage at or near the site could potentially become blocked or cracked and overflow or leak. Drainage of the basement terrace areas may rely on pumping.
Flooding from reservoirs, canals and other artificial sources	No	There are no reservoirs, canals or other artificial sources in the vicinity of the site that could give rise to a flood risk.

## 7.4. Scoping Study

It is evident from the screening study that the only significant flood risks are due surface water (pluvial) flooding and failure of existing sewers in the vicinity of the site.

We have obtained further information to clarify the risks and propose mitigation measures.

#### 7.5.1 Potential surface water (pluvial) flooding

As described in section 7.1, the site basement lies on a low point on Goldhurst Terrace.

Any surface water runoff would be directed to this section of the road

It is likely that this area of road would have been flooded in 2002. It is understood that this flooding was due to the Thames Water relief sewer being overloaded. It is also understood Thames Water subsequently increased the capacity of this relief system.

The likelihood of flooding of this nature is now significantly reduced.

#### 7.5.2 Potential flooding from infrastructure failure

In addition to the storm water relief sewer previously mentioned, there is believed to be a trunk sewer running along road.

Blockage or failure of either of these may result in the following sequential events:

- Excess flow from Goldhurst Terrace may accumulate in the road in front of the site.
- This flow would travel in the direction away from the front elevation of the property owing to the site being on a slightly higher level than the opposite side of the street, and the raised level of the pavement above the road (see photo below).



*Figure 26: Street level view showing kerb raised above road*

The likelihood of flow into the front light wells is also reduced by the existing landscaped areas in the front garden: these would partially relieve any excess flow that would migrate towards the front of the building.

A pumping mechanism will be installed for the proposed basement.

There is a likelihood that this may fail and allow excess water to accumulate. If this were to occur, the build-up of water would be gradual and noticeable before it becomes a significant life-threatening hazard.

#### 7.6 Mitigation measures

We would recommend the following measures to reduce the risks mentioned above:

- Construct an upstand around the front lightwells to form a barrier against excess flow.
- Install a dual pumping system to maintain operation in the event of a failure.

#### 7.7 Summary

The risk of flooding from excess surface water is not considered significant. There is a risk of flooding due to the failure of the pumping system but this can be reduced to acceptable levels with appropriate design and installation measures.

## 8. Site Investigation

### Monitoring and Reporting

Chelmer Site Investigations completed a borehole investigation. From the

Scoping stage we considered the following for the brief:

- A borehole to a depth of 15 metres.
- Two boreholes would have been preferable. However, it was only possible to access the rear of the property. Considering the size of the development and the knowledge we already have of soil in this area, we do not expect there to be a large variation in soil across the relatively small area under examination.
- Site testing to determine in-situ soil parameters.
- Laboratory testing to confirm soil make up and properties.
- Actual Report on soil type and conditions.
- The Historic maps and walk over survey did not highlight any significant contamination sources, therefore no site test of the ground has been requested.

Refer to Appendix E for the Soil Investigation Report.

At detailed designed stage, a soil investigation with an extended brief and detailed interpretative geotechnical report should be completed.



## 9. OS Map extract showing location of Railway



Figure 27: Extract from OS map showing proximity to nearest railways

Refer to Section 5 for more details.

## 10. Impact Assessment

### Subterranean flow

The site is not within the catchment of the Hampstead Heath Ponds. It is a considerable distance from the ponds and standing water courses in the area.

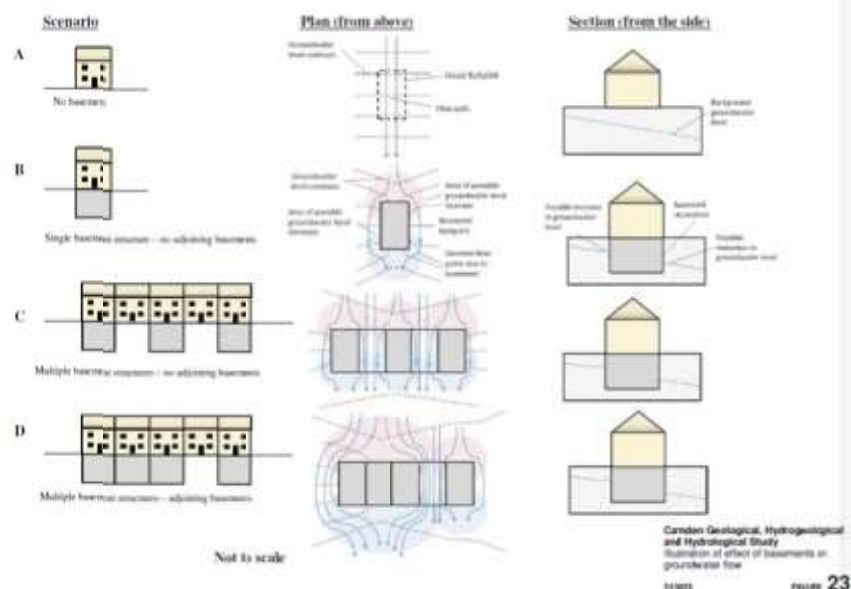
The development will not have an impact on the Hampstead Heath ponds nor their catchment.

The proposed development depth is expected to be at 3.8m below external ground level.

The ground below the proposed lightwell is London Clay. This is not very permeable and is unlikely to allow ground water to pass through it.

The site investigation indicated that no water is present down to a depth of 6m.

The local effect of the deepened basement and the lightwells will be to divert any flowing ground water away from the foot print of the building. To the front, side and rear of the property large areas over 6m wide are present. With a large dispersal area for the flow to be diverted around, the effects on the surrounding area will be minimal.



**Without field testing in the neighbouring properties or along the road there is a low residual risk that the ground wall flow may affect the external ground.**

**The basement design must allow for variants in ground water. The**

***retaining walls must be designed to provide lateral resistance to water up to 1m from the top of the wall. The design must follow the recommendations as noted in BS8102.***

***For the level of development a full hydrology report is not suitable.***

#### Slope Stability

From the walk over survey, the OS map and the Arups report, the general slope of the surrounding area is less than 7°.

Land slide is not a problem due to any circular failure patterns.

The retaining walls must be designed to accommodate the lateral pressures from the soils.

#### Foundation type

Reinforced concrete cantilevered retaining walls will be specified.

The designs for the retaining walls have been calculated using software specifically designed for retaining walls. This ensures the design is kept to a limit to prevent damage to the adjacent property.

**The calculations for these are in Appendix C**

The overall stability of the walls are design using  $K_a$  &  $K_p$  values, while the design of the wall uses  $K_o$  values. This approach minimises the level of movement from the concrete affecting the adjacent properties.

The walls are designed to cope with the hydrostatic pressure. The design of the walls considers the long term items. It is possible that a water main may break causing local high water table. To account for this, the wall is designed for this,

The wall is designed for water 1m from the wall.

The design also considers floatation as a risk. The design has considered the weight of the building and the uplift forces from the water. The weight of the building is greater than the uplift resulting in a stable structure.

Below are the design pressures and loadings.

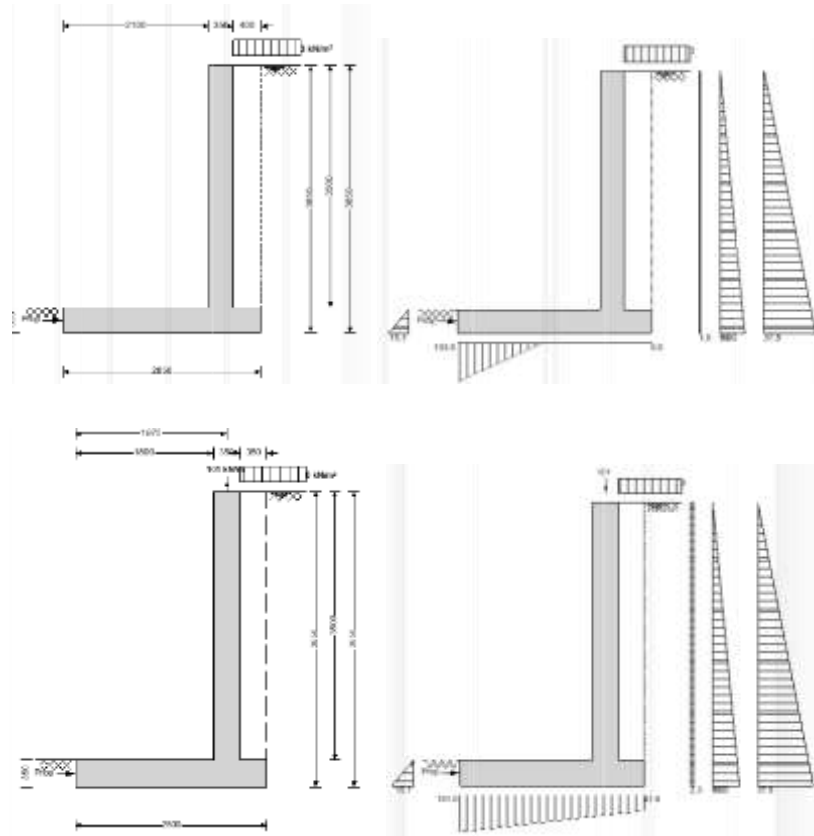


Figure 28 Loadings and Lateral pressure patterns

Vicinity of Trees	There are minor shrubs and small trees, none of which are affected
Special precautions due to trees	<p>The foundations will be below the zone of influence of these trees.</p> <p>The current trees roots will be limited by the existing foundations. No tree root protection zones are known to be present. Root protection barriers will be required.</p> <p>No build over agreements known of.</p>
Drainage effects on Structure	<p>Flooding. The site is not in an area of high risk flooding. The building does not undermine the highway.</p>
Roads and Surcharge	<p>Garden Surcharge 2.5kN/m<sup>2</sup></p> <p>Surcharge for adjacent property 1.5kN/m<sup>2</sup> + 4kN/m<sup>2</sup> for concrete ground bearing slab</p>
Intended use of structure and user requirements	Family/domestic use

Loading Requirement (ECI-I)

2

	UDL N/m <sup>2</sup>	Concentrated Loads kN	Is Live Load
<b>Domestic Single Dwellings</b>	1.5	2.0	

The basement does not lie within a 45° angle of the highway. Therefore Highways Agency (HA) loading is not required to be applied.

APPLICABLE CLACIFICATIONS	
Class 2A	Flats, apartments and other residential buildings not exceeding 4 storeys
Class 2B	Hotels, flats, apartments and other residential buildings greater than 4 storeys but not exceeding 15 storeys

#### Existing Main Building

Proposed Building Class 2A

If class has changed material change has occurred N/A

#### Proposed Basement

Proposed Building Class 2A

Progressive Collapse

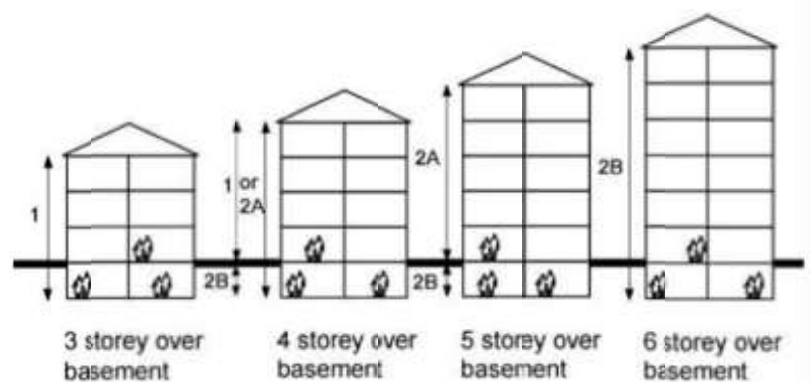
Design for consequences of localized failure in building from an unspecified cause

Is the Building Multi Occupancy?

Yes

Part A3 Progressive collapse

EN 1991-1-7:1996 Table A1



Change of use

To NHBC guidance compliance is only required to other floors if a material change of use occurs to the property.

Additional Design Requirements to Comply with Progressive Collapse

**Class 2A – Design provision of effective horizontal ties or, or effective anchorage of suspended floor to walls.**



Lateral Stability  
Exposure and wind  
loading conditions

Basic wind speed  $V_b = 21$  m/s to EC1-2 Site  
level +75.000 m above sea level. Topography  
not considered significant.

Stability Design

The cantilevered walls are suitable to carry the lateral loading applied from above

The soil loads apply a lateral load on the retaining walls.

Lateral Actions

Hydrostatic pressure will be applied to the wall

Imposed loading will surcharge the wall.

## Adjacent Properties

***Any ground works pose an elevated risk to adjacent properties. The proposed work undermines the adjacent property:***

The party wall is to be underpinned. Underpinning the party wall will remove the risk of the movement to the adjacent property.

The works must be carried out in accordance with the Party Wall Act and condition surveys will be necessary at the beginning and end of the works.

The method statement provided at the end of this report has been formulated with our experience of over 20 basements completed without error.

The design of the retaining walls is completed to  $K_0$  lateral design stress values. This increases the design stresses in the concrete retaining walls and limits the overall deflection of the retaining wall.

It is not expected that any cracking will occur during the works. However our experience informs us that there is a risk of movement to the neighbours.

To reduce the risk the development:

- Employ a reputable firm for extensive knowledge of basement works.
- Employ suitably qualified consultants. Croft Structural engineer has completed over 250 basements in the last 5 years.
- Design the underpins to the stable without the need for elaborate temporary propping or needing the floor slab to be reset.
- Provide method statements for the contractors to follow
- Investigate the ground, now completed.
- Record and monitor the external properties. This is completed by a condition survey on under the Party Wall Act before and after the works are completed. See end of method statement.
- Allow for unforeseen ground conditions: Loose ground is always a concern. The method statement and drawings show the use of precast lintels to areas of soft ground; this follows the guidance by the underpinning association.

With the above the maximum level of cracking anticipated is Hairline

cracking which can be repaired with decorative cracking and can be repaired with decorative repairs. Under the party wall Act damage is allowed (although unwanted) to occur to a neighbouring property as long as repairs are suitably undertaken to rectify this. To mitigate this risk The Party Wall Act is to be followed and a Party Wall Surveyor will be appointed.

**Extract from The Institution of Structural Engineers “Subsidence of Low- Rise Buildings”**

**Table 6.2 Classification of visible damage to walls with particular reference to type of repair, and rectification consideration**

Category of Damage	Approximate crack width	Definitions of cracks and repair types/considerations
0	Up to 0.1	<b>HAIRLINE</b> – Internally cracks can be filled or covered by wall covering, and redecorated. Externally, cracks rarely visible and remedial works rarely justified.
1	0.2 to 2	<b>FINE</b> – Internally cracks can be filled or covered by wall covering, and redecorated. Externally, cracks may be visible, sometimes repairs required for weather tightness or aesthetics. NOTE: Plaster cracks may, in time, become visible again if not covered by a wall covering.
2	2 to 5	<b>MODERATE</b> – Internal cracks are likely to need raking out and repairing to a recognised specification. May need to be chopped back, and repaired with expanded metal/plaster, then redecorated. The crack will inevitably become visible again in time if these measures are not carried out. External cracks will require raking out and repointing, cracked bricks may require replacement.
3	5 to 15	<b>SERIOUS</b> – Internal cracks repaired as for MODERATE, plus perhaps reconstruction if seriously cracked. Rebonding will be required. External cracks may require reconstruction perhaps of panels of brickwork. Alternatively, specialist resin bonding techniques may need to be employed and/or joint reinforcement.
4	15 to 25	<b>SEVERE</b> Major reconstruction works to both internal and external wall skins are likely to be required. Realignment of windows and doors may be necessary.
5	Greater than 25	<b>VERY SEVERE</b> –Major reconstruction works, plus possibly structural lifting or sectional demolition and rebuild may need to be considered. Replacement of windows and doors, plus other structural elements, possibly necessary.

NOTE – Building & CDM Regulations will probably apply to this category of work, see sections 10.4, 10. and Appendix F.

### Monitoring and Predicted Category of Damage

**Monitoring** - In order to safeguard the existing structures during underpinning and new basement construction movement monitoring is to be undertaken. Surveying studs are to be attached to the adjacent structures at ground, first, second and third floor levels at front and rear.

The surveying points on the adjacent structures are to be set up using an EDM prior to commencement of the works and to be read daily and reported against the following control values.

#### Limits on ground and adjacent structures movement during underpinning and throughout the construction works.

Movement of survey points must not exceed:

Settlement:

Action values: 5mm (stop work)

Trigger values: 65% of action values (submit proposals for ensuring action values are not exceeded)

Lateral displacement:

Action values: 6mm (stop work)

Trigger values: 65% of action values (submit proposals for ensuring action values are not exceeded)

Movement approaching critical values:

Trigger: Submit proposals for ensuring action values are not exceeded Action: Stop work
---

The reporting format will be in the form of a table as attached.

### Predicted Category of Damage

The predicted category of damage is likely to be within BRE Category Slight, with possible localised crack widths 2mm to 5mm Classification Aesthetic.

Drainage and Damp proofing

Assumed that drainage and damp proofing is by others: Details are provided at the end of this document by Delta Membrane systems.

Our recommendation is that drained cavity systems are used to habitable basements with pumped sumps. This is a specialist contractor design item.

Concrete is not designed BS 8007. But where possible BS 8007 detailing is observed to help limit crack widths of concrete

#### Party Wall

Underpinning basement works has a risk associated to it.

To mitigate these risks a Party Wall Surveyor must be appointed

#### Temporary Works

Temporary works are the contractor's responsibility. Loads can be provided on request.

Foundations; All trenches deeper than 1.0m must be shored. Where works undermine existing foundations contractor must allow for additional support.

The Method Statement lays out the process for constructing the basement

#### Noise and Nuisance

The contractor is to follow the good working practices and guidance laid down in the "Considerate Constructors Scheme".

The hours of working will be limited to those allowed; 8am to 5pm Monday to Friday and Saturday Morning 8am to 1pm.

None of the practices cause undue noise that one would typically expect from a construction site. The conveyor belt typically runs at around 70dB.

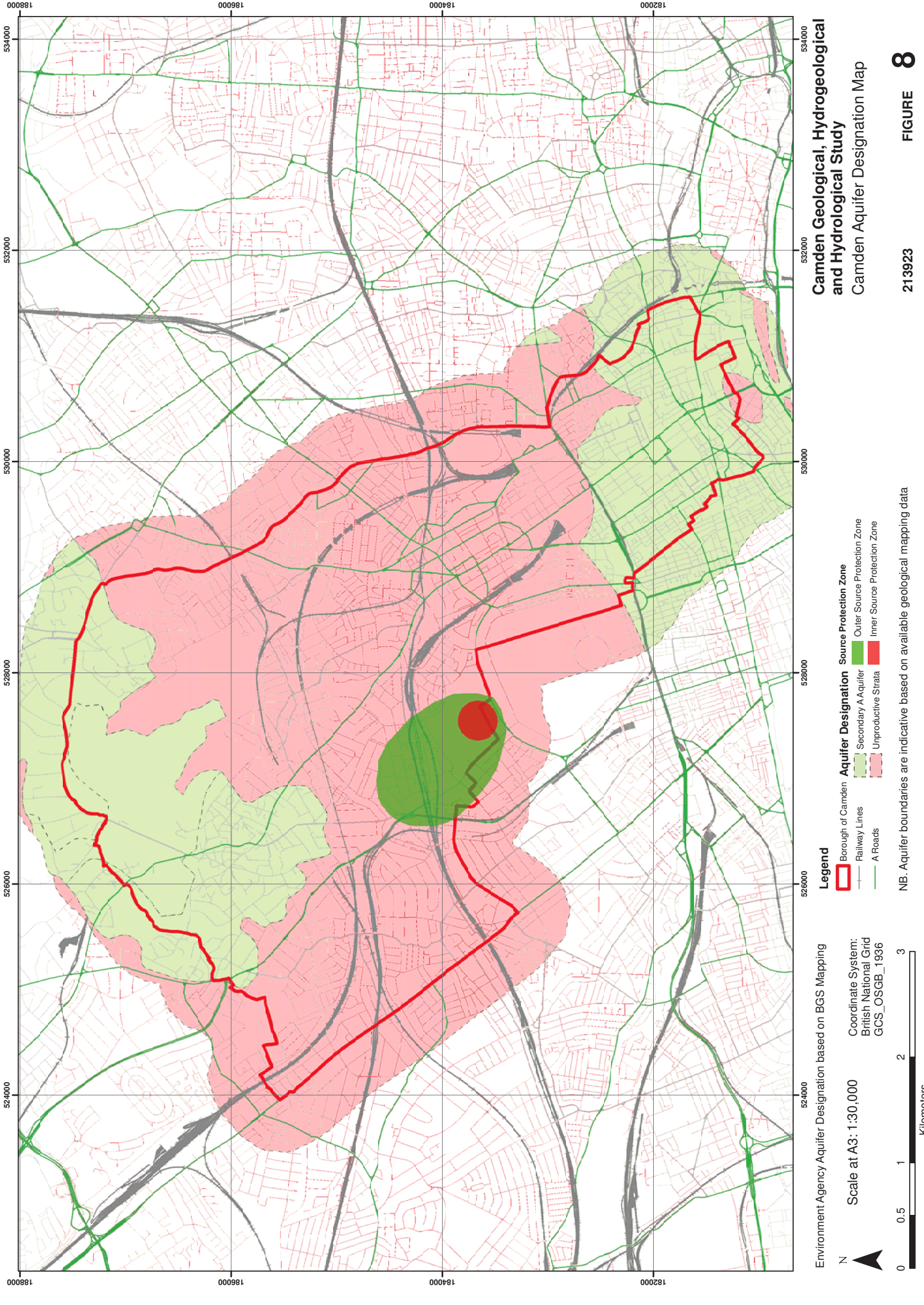
The site has car parking to the front to which the skip will be stored.

The site will be hoarded with 'Chapter 8' site hoarding to prevent access.

The hours of working will further be defined within the Party Wall Act.

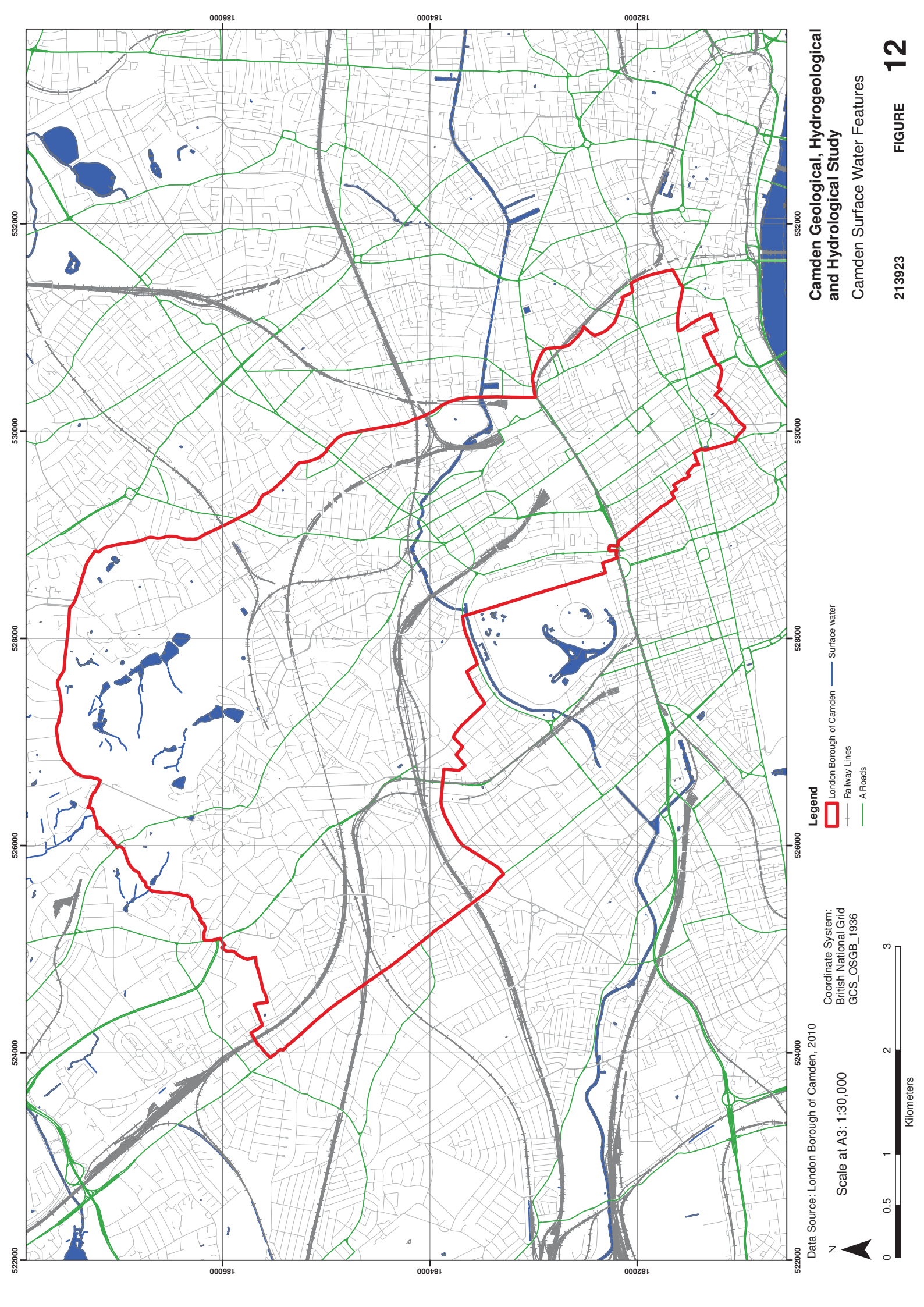
The site is to be hoarded to minimise the level of direct noise from the site.



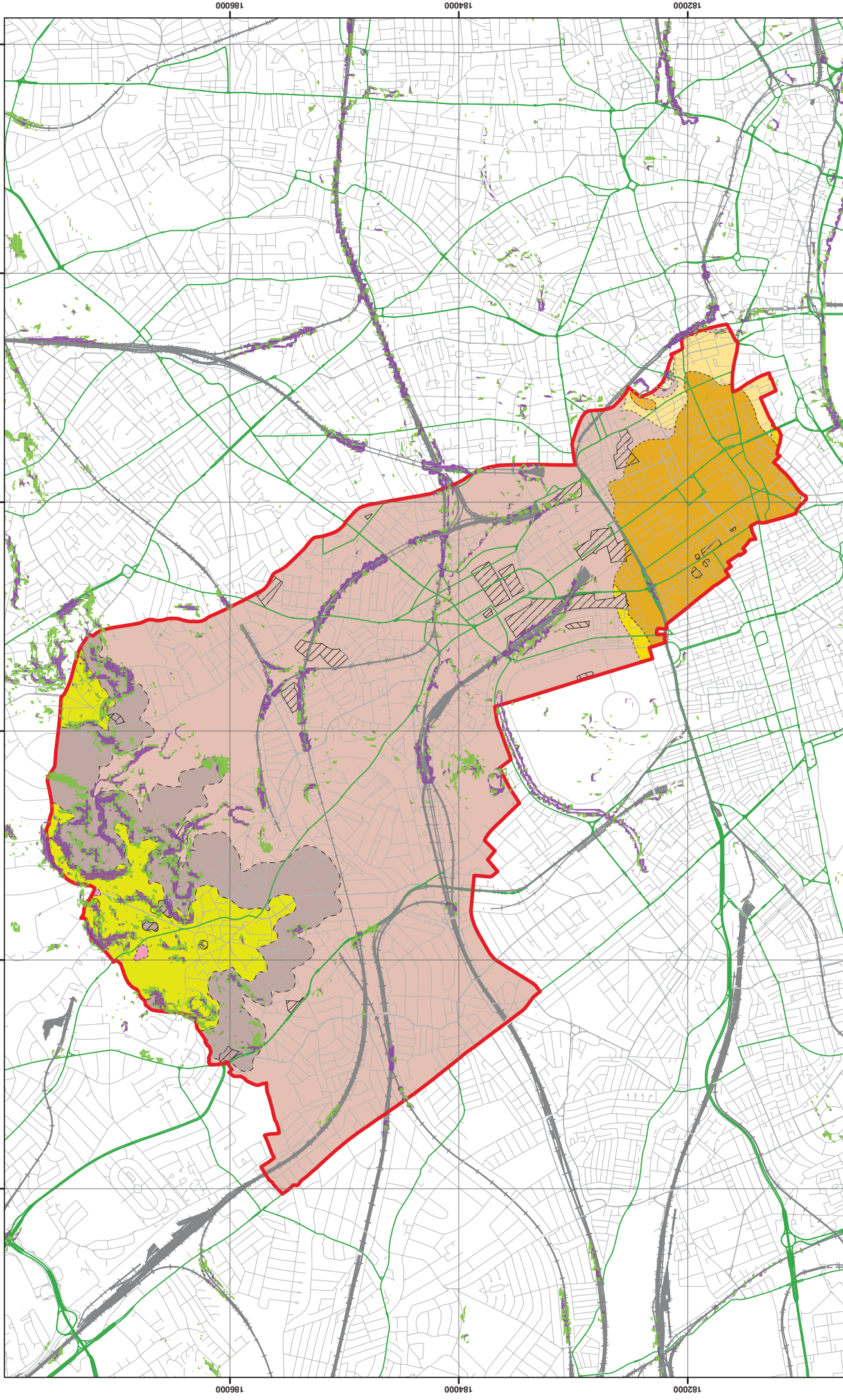


Camden Geological, Hydrogeological and Hydrological Study  
Camden Aquifer Designation Map









Slope Angles calculated from Digital Terrain Model Provided By Camden Borough Council

**Legend**

**Slope**

- 0° - 7°
- 7° - 10°
- > 10°

**1:10,000 BGS Mapping**

Coordinate System:  
British National Grid  
GCS\_OSGB\_1936

**London Borough of Camden**

- Railway Lines
- A Roads

**BGS 1:10K Artificial Ground**

- MADE GROUND
- WORKED GROUND

**BGS 1:10K Solid Geology**

- BAGSHOT FORMATION
- CLAYGATE MEMBER
- LAMBETH GROUP
- LONDON CLAY FORMATION
- ALLUVIUM
- HACKNEY GRAVEL FORMATION
- LANGLEY HILL GRAVEL FORMATION
- LYNCH HILL GRAVEL FORMATION
- STANMORE GRAVEL FORMATION

# Camden Geological, Hydrogeological and Hydrological Study

Slope Angle Map



NB. Geological boundaries are largely indicative based on available geological mapping data

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FIGURE

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