

FloodSmart BIA



Basement Impact Assessment

Site Address

12 Great North Road
London
N6 4LX

Date

2023-08-01

Report Status

FINAL

Grid Reference

527755, 188672

Site Area

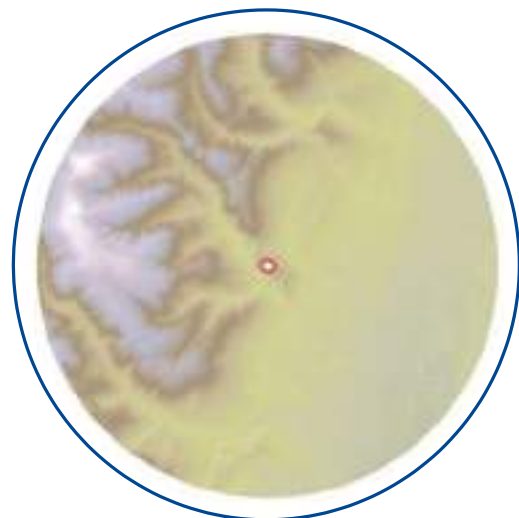
0.028 ha

Report Prepared for

Simone de Gale

Report Reference

79764R1



RISK – Very Low - Low

The proposed basement is located within the London Clay and is unlikely to interact with a significant groundwater system. The risk of the proposed basement to impact on surface water or groundwater flows and any related flooding is considered to be Very Low to Low. Flood resilient measures should however be incorporated into the basement design including tanking of the walls and floors, to prevent water ingress and to reduce flood damage should flooding occur.

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1. Executive summary



Site analysis

Flood risks and impacts	Baseline*	After Mitigation **
Groundwater flooding	Low	Low
Surface water flooding	Very Low	Very Low

*BASELINE risks have been calculated for the whole Site, using national risk maps, including the benefit of EA flood defences. Note that the risks presented in the baseline mapping are applicable to surface development only, whereas the risks presented on the table are applicable to the proposed subterranean development and therefore may be higher.

**FINAL RISK RATING Includes a detailed analyses of flooding risks over the lifetime of the proposed development, including allowances for climate change AND assumes recommended mitigation measures are implemented.

Summary of existing and proposed development

The Site is currently used within a residential capacity with an existing two storey detached dwelling with associated parking and landscaped areas. The Site does not currently contain a basement level. Site plans are included within Appendix A.

Development proposals are for the redevelopment of the Site to construct a new **3** storey dwelling with a recessed top floor in order to provide **3** x 3 bedroom units, 2 of which are maisonettes provided at basement and ground floor level.

The proposed basement finished floor level (FFL) will extend to a depth of c. 2.9 m (c. 89.8 mAOD). The depth of the foundations is unknown but is assumed to be c. 0.5 m (89.3 mAOD). Access to the basement will be via a set of internal stairs with 1 for each unit. The basement is proposed for sleeping accommodation and will have lightwell to the front and rear.

Summary of groundwater flood risks

The Site setting is summarised as follows:

- No Site investigation has been undertaken.
- The nearest BGS borehole record TQ28NE426 located c. 400 m to the south of the Site at an elevation of 93.8 mAOD indicates the surrounding area to be underlain by Made Ground to a depth of 0.30 m bgl and London Clay to a depth of 13.0 m bgl where the borehole ends.
- BGS 1: 50,000 mapping indicates that there are no underlying superficial deposits, and the bedrock geology comprises London Clay, which is classified as Unproductive Strata. The London and Thames Valley Model indicates the geology underlying the

Site comprises; London Clay Formation to a depth of 105.6 m bgl, Lambeth Group to a depth of 118.8 m bgl; Thanet Formation to a depth of 127.1 m bgl and the Chalk Group, which reaches a depth of 324.6 m bgl. The Chalk Group is a Principal Aquifer which is likely to contain significant groundwater; however, this groundwater is at such a significant depth that the risk to the Site from the chalk aquifer is Negligible.

- There are multiple drainage channels located surrounding the Site with the closest located c. 260 m south west and c. 290 m east of the Site. Both of which are located at a lower elevation than the Site and within London Clay bedrock. Therefore there is unlikely to be a pathway that could support shallow groundwater levels beneath the Site.
- The Site is located within Flood Zone 1 and the Risk of Flooding from Rivers and Sea (RoFRS) mapping indicates the Site is at Very Low risk of fluvial flooding. No surface watercourses or lost rivers have been identified within the vicinity of the Site.
- The Risk of Flooding from Surface Water (RoFSW) mapping shows the Site to be at Very Low risk of pluvial flooding.

It is noted that the surface water flood risk mapping indicates the risk to the development at the surface. The proposed basement reflects an excavation and as there is the inclusion of external ingress points, there is an increased risk of ponding of surface water or collection of interflows.

The sources reviewed, including BGS mapping and BGS borehole data (no site specific ground investigation has been undertaken) suggests that the Site is underlain by London Clay bedrock which is unlikely to contain significant groundwater. Groundwater seepage from isolated permeable horizons within the London Clay or Made Ground may be encountered and while this should be monitored, it is unlikely there will be significant flow.

Based on this information the proposed lower ground floor is unlikely to interact with the groundwater system and is also unlikely to be affected by surface water flooding.

Recommendations / Next steps

Recommendations for mitigation are provided below, based upon the proposed basement and wider development design:

- A watching brief should be implemented during the construction of the proposed development. Should groundwater be encountered, works should stop, further investigation of the risks should be undertaken and appropriate mitigation measures should be implemented.
- Flood resilient measures should be incorporated into the basement to prevent water ingress and to reduce flood damage should flooding occur. Tanking of the basement should be considered to prevent the ingress of groundwater into the basement.
- A Sustainable Drainage Strategy should be undertaken to ensure that extra surface water flows generated by the increase in impermeable areas are managed safely on Site.

2. Introduction



Background and purpose

GeoSmart Information Ltd was commissioned by Simone de Gale in June 2023 to undertake the groundwater and surface water aspects of a Basement Impact Assessment (BIA) for the proposed development at 12 Great North Road, London, N6 4LX (the Site). The Site is located at national grid reference TQ 27755 88672 within the London Borough of Haringey. Existing and proposed Site plans and drawings are provided in Appendix A.

Objective

This document comprises a desk-based assessment of the potential impact of the proposed basement development on surface water and groundwater flow and flooding and has been designed to support a planning submission for the proposed development.

Report scope

The scope of works undertaken includes:

- An outline of the hydrological and hydrogeological conditions with relevance to construction of the basement at the Site.
- An assessment of the impacts of the proposed development on surface water and groundwater flows and levels.
- Assessment will be presented using the clearly-defined reporting framework as outlined in the widely referenced Camden Planning Guidance for Basements. This report will consider the following sections:
 - 1) **Screening** – first stage in assessing the impact of a proposed basement development is to recognise what issues are relevant to the proposed site.
 - 2) **Scoping** – identify the potential impacts for each of the matters of concern identified in the screening stage.
 - 3) **Recommendations** – recommendations are made based on the outcome of the assessment.

Report limitations

It is noted that the findings presented in this report are based on a desk study of information supplied by third parties. Whilst we assume that all information is representative of past and present conditions, we can offer no guarantee as to its validity and a proportionate programme of site investigations would be required to fully verify these findings.

The basemap used is the OS Street View 1:10,000 scale, however the Site boundary has been drawn using BlueSky aerial imagery to ensure the correct extent and proportion of the Site is analysed.

This report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

Datasets

The following table shows the sources of information that have been consulted as part of this report:

Table 1. Datasets consulted to obtain confirmation of sources of flooding and risk

Source of flooding	Datasets consulted				
	Commercial Flood Maps	Local Policy & Guidance Documents*	Environment Agency	Thames Water (Appendix C)	OS Data
Historical	X	X	X		
River (fluvial) / Sea (tidal/coastal)	X	X	X		
Surface water (pluvial)	X	X	X		
Groundwater	X	X			
Sewer		X		X	
Culvert/bridges		X			X
Reservoir		X	X		

*Local guidance and policy, referenced in Section 6, has been consulted to determine local flood conditions and requirements for flood mitigation measures.

Relevant local guidance

For this report, several documents have been consulted for local policy and guidance and relevant information is outlined below:

Haringey Council Level 2 Strategic Flood Risk Assessment (JBA Consulting, 2015):

Basement dwellings are classified as 'Highly Vulnerable' according to the NPPG. As such basement dwellings should not be permitted within Flood Zone 3a and must pass the Exception Test should they be proposed within Flood Zone 2. The SWMP for the LB of Haringey recommends that basements dwellings should be discouraged within areas at risk of fluvial, surface water or groundwater flooding.

Basement dwellings are vulnerable to groundwater flooding in locations where the flow of groundwater can be significant. Ensuring that the basement is water tight should mitigate against groundwater entering the basement dwelling, however the removal of permeable in situ ground material, replaced by an impermeable void (the basement) can affect the way groundwater flows locally at the development site.

Self Contained Basement dwellings should not be located within areas of flood risk.

Any basement extension will need to ensure that it does not disrupt the hydrogeological regime of the area. Basement extensions located in areas of risk should not have any sleeping accommodation and will require access to an upper level.

Camden Planning Guidance: Basements (Camden Council, 2021)

- The Camden Planning Guidance: Basements policy was adopted in January 2021. The guidance is viewed as an exemplar of policy in regard to development of basements¹ by GeoSmart.
- The Screening questions from this guidance have been used in Section 4 of this report. As the Site is not within the London Borough of Camden, the Screening questions relating to the pond chains on Hampstead Heath have been excluded.
- Given their nature, basements are more susceptible to surface water flooding than other conventional extensions.

¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/668958/Basements_Review_Summary_of_Responses.pdf

3. Site Setting



Location Description

The Site is located at 12 Great North Road, London, N6 4LX in a setting of residential and commercial land use. It is bound to the south west by Great North Road, to the north by access roads and in all other directions by residential properties.

The nearest building is located to the east of the proposed basement.

It is not known whether basement development is present within the vicinity of the Site, with no basements identified using Google Streetview.

Figure 1. Aerial imagery of the Site (Bluesky, 2023).

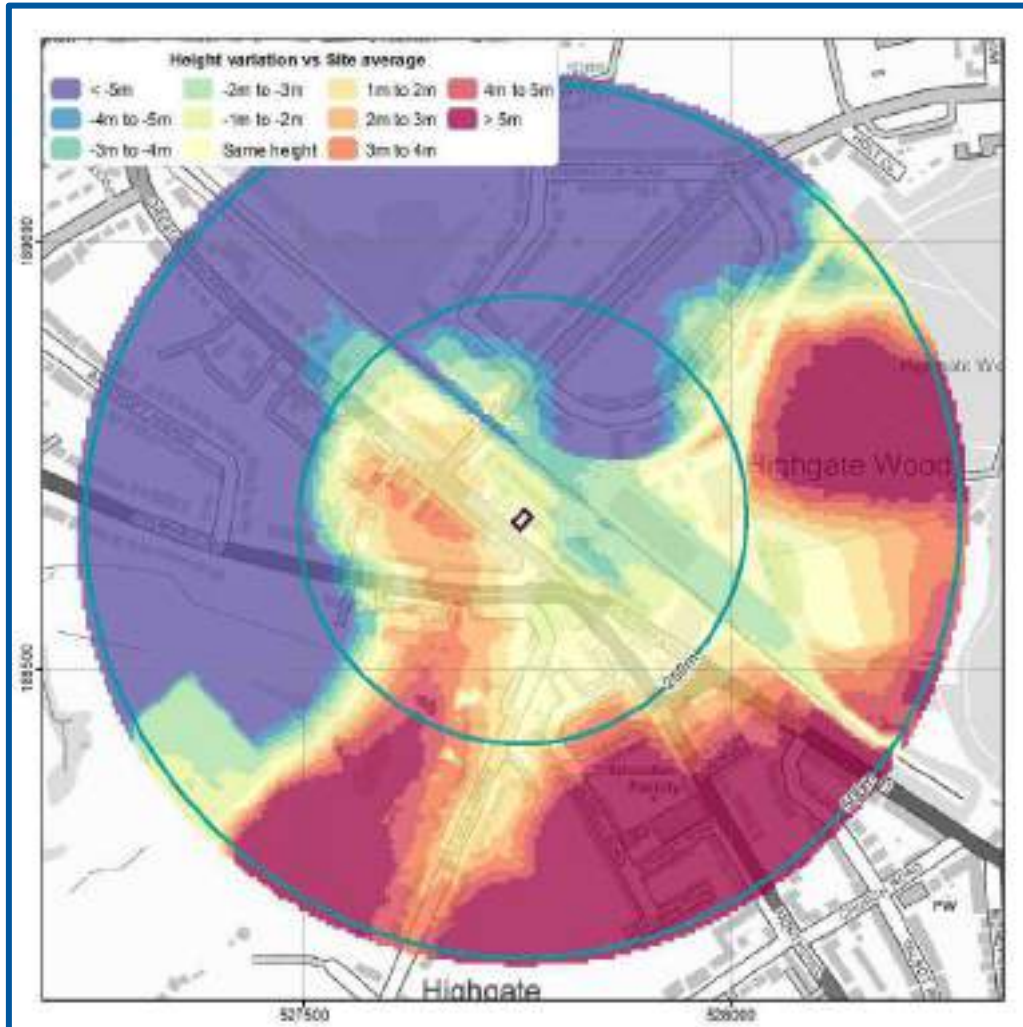


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Figure 2 overleaf indicates ground levels within 500m of the Site fall in a north easterly direction.

According to OS data, the level of the Site is between 91.3 and 92.7 mAOD with the Site falling in a north easterly direction. This is based on EA elevation data obtained for the Site to a 1 m resolution with a vertical accuracy of ± 0.15 m (Appendix B).

Figure 2. Site Location and Relative Elevations (GeoSmart, 2023).



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Proposed Development

The Site is currently used within a residential capacity with an existing two storey detached dwelling with associated parking and landscaped areas. The Site does not currently contain a basement level. Site plans are included within Appendix A.

Development proposals are for the redevelopment of the Site to construct a new **3** storey dwelling with a recessed top floor in order to provide **3** x 3 bedroom units, 2 of which are maisonettes provided at basement and ground floor level.

The proposed basement finished floor level (FFL) will extend to a depth of c. 2.9 m (c. 89.8 mAOD). The depth of the foundations is unknown but is assumed to be c. 0.5 m (89.3 mAOD). Access to the basement will be via a set of internal stairs with 1 for each unit. The

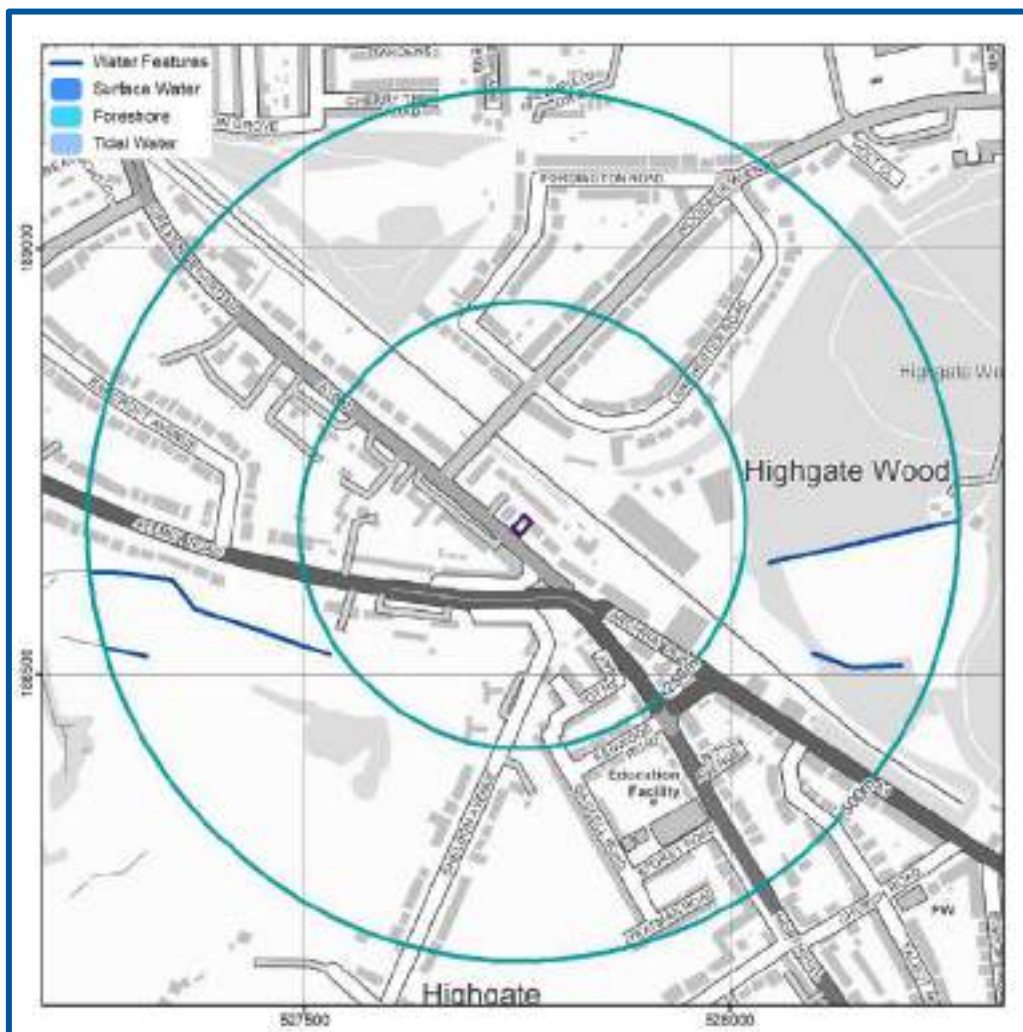
basement is proposed for sleeping accommodation and will have lightwell to the front and rear.

The effect of the overall development will result in an increase in number of occupants and/or users of the Site but will not result in the change of use, nature or times of occupation. The estimated lifespan of the development is 100 years.

Surface Water Features

According to Ordnance Survey (OS) mapping included in the following figure, there are numerous surface water features within 500 m of the Site.

Figure 3. EA Surface Water Features (OS, 2023)



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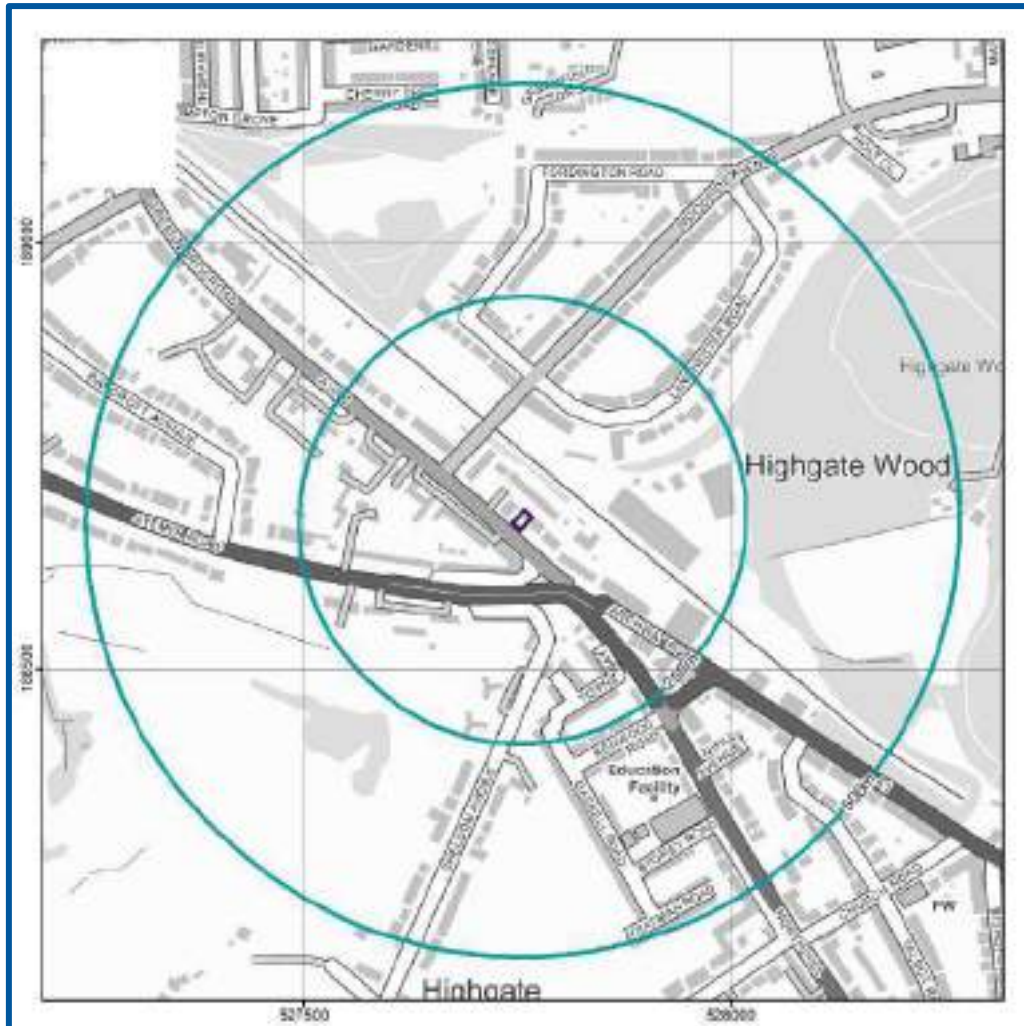
There are multiple drainage channels located surrounding the Site with the closest located c. 260 m south west and c. 290 m east of the Site. Both of which are located at a lower elevation than the Site.

No subterranean rivers have been identified within the vicinity of the Site (Talling, 2023; Barton, 1992).

Ground Conditions

British Geological Survey (BGS) mapping indicates the Site is not underlain by superficial deposits (BGS, 2023).

Figure 4. Superficial Geology (BGS, 2023)



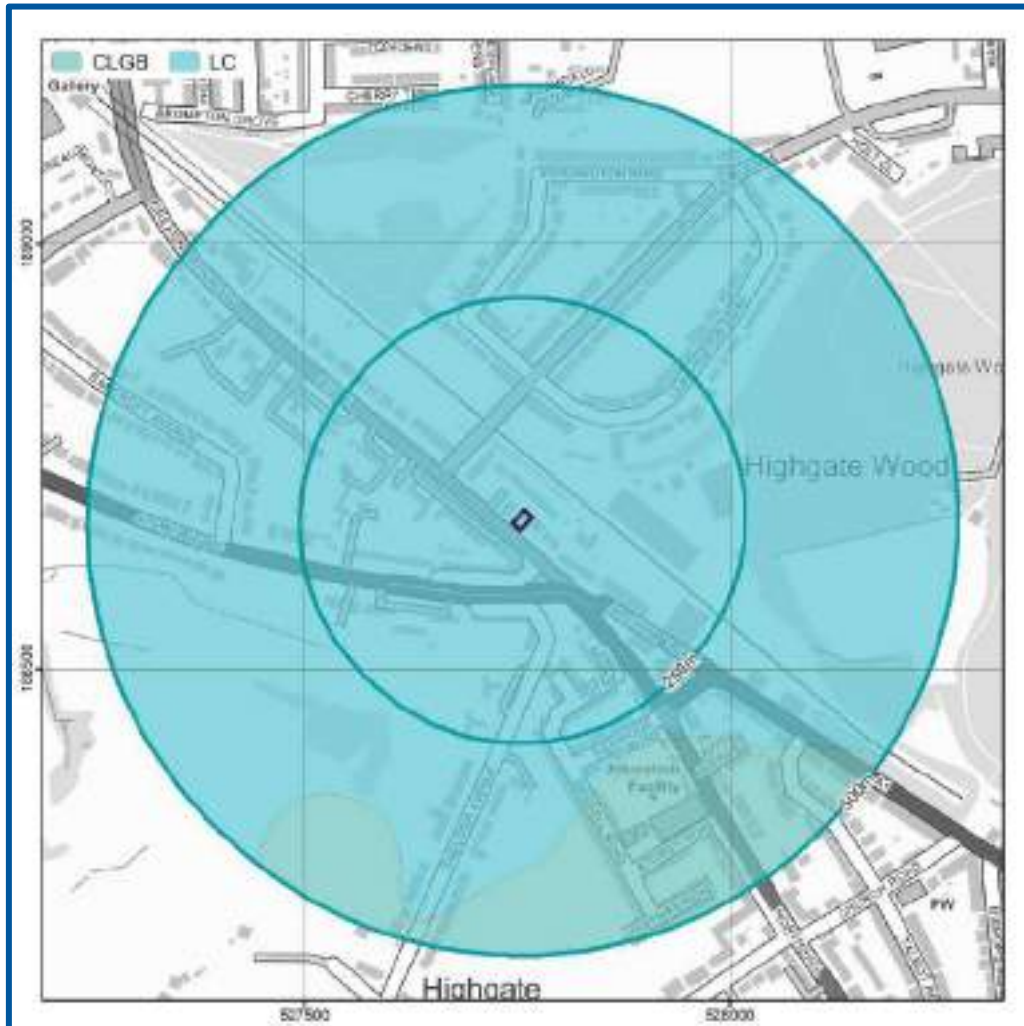
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BGS mapping indicates the underlying bedrock geology (Figure 5, overleaf) consists of the London Clay Formation (LC) (BGS, 2023) and is classified as Unproductive Strata (EA, 2023).

London Clay bedrock mainly comprises bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay (BGS, 2023). It is unlikely to support significant groundwater flow (EA, 2023).

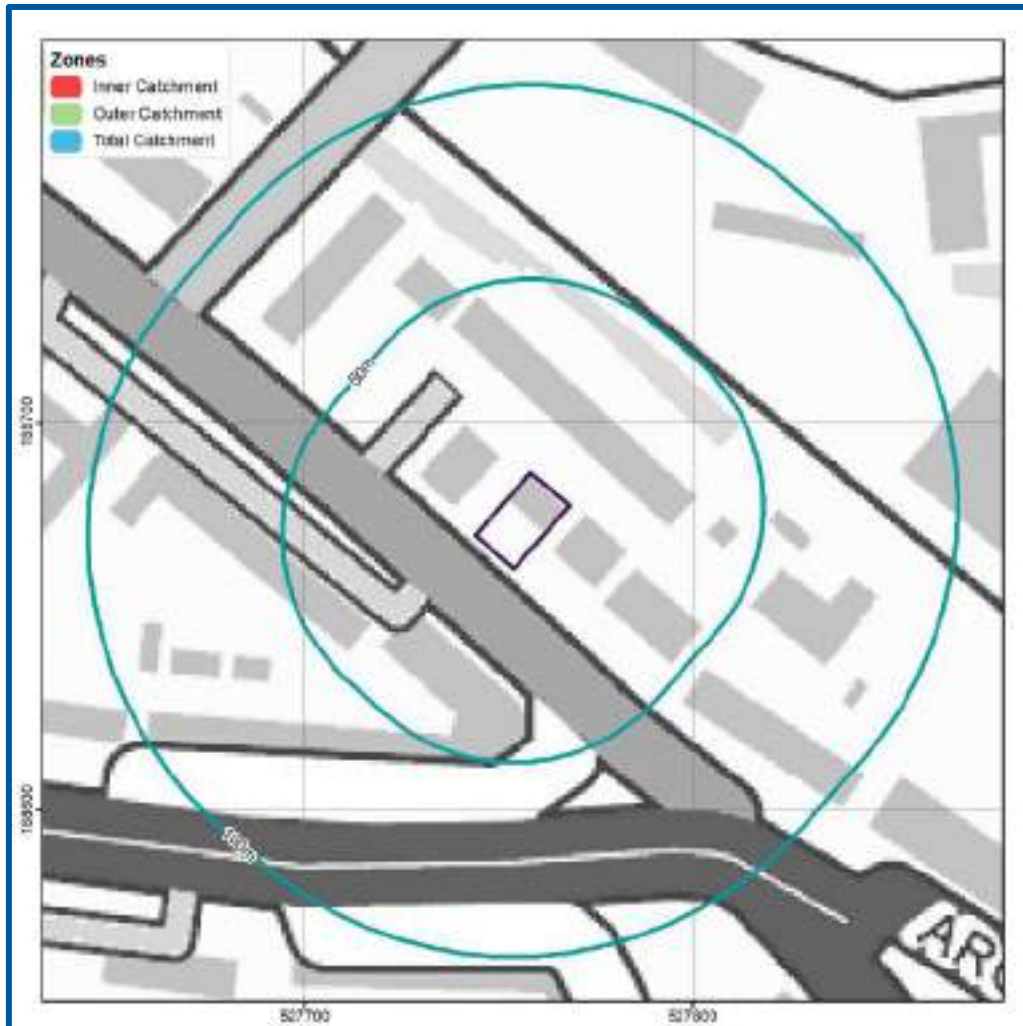
Figure 5. Bedrock Geology (BGS, 2023)



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An assessment of the EA's groundwater Source Protection Zones (SPZs) has been undertaken within the vicinity of the Site and confirms the Site is not located within an SPZ.

Figure 6. Source protection zone map (EA, 2023)



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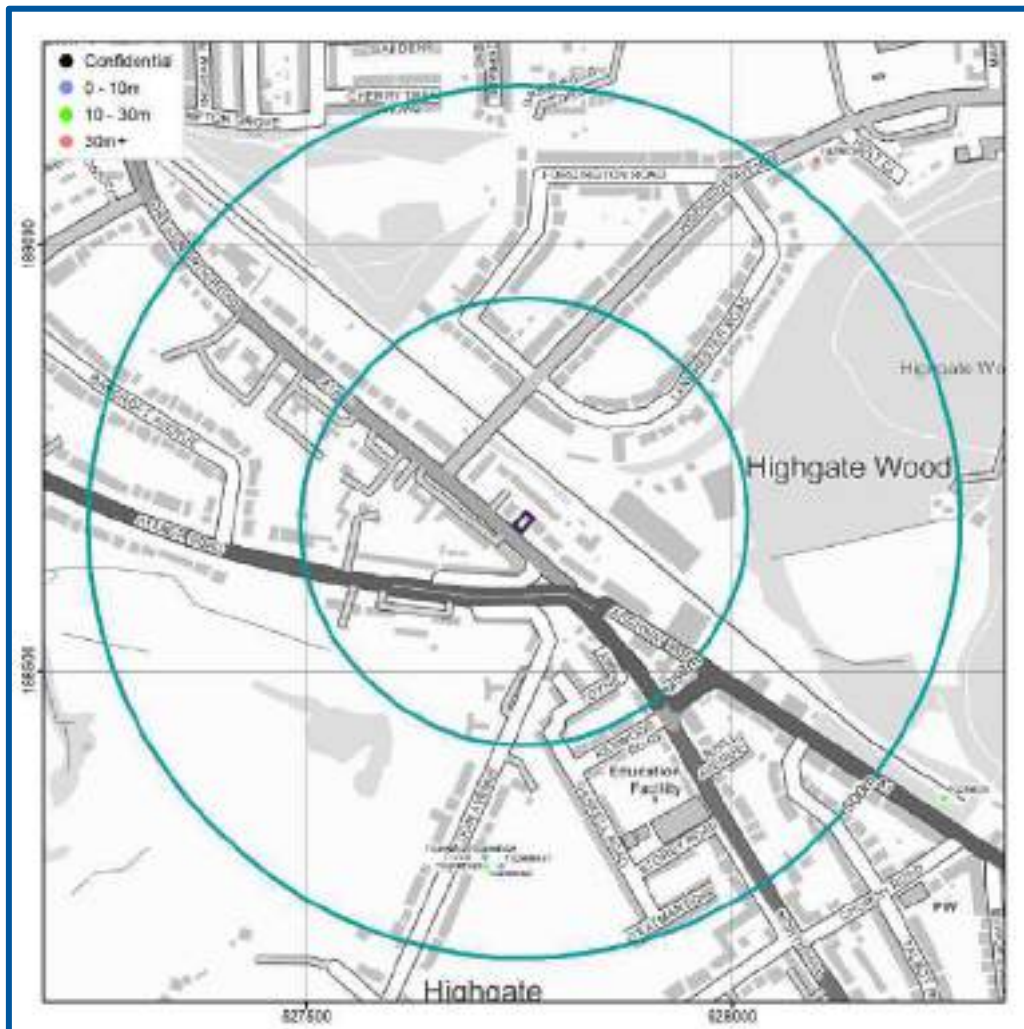
BGS Borehole Database

The BGS website was used to extract ground information from the nearest borehole records to the Site (Figure 7 overleaf). The full logs are presented in Appendix D.

The nearest BGS borehole record within the same geological strata as the Site on the BGS Borehole Data Archive at the GeoIndex (Onshore) website is TQ28NE426 located c. 400 m to the south of the Site at an elevation of 93.8 mAOD which indicates the surrounding area to be underlain by Made Ground to a depth of 0.30 m bgl and London Clay to a depth of 13.0 m bgl where the borehole ends (Appendix D).

Boreholes TQ28NE426-29 all show Made Ground overlying London Clay.

Figure 7. Borehole records (BGS, 2023)



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London and Thames Valley Model

The London and Thames Valley Model has also been considered to further infer the local geology at the Site (BGS, 2023) (Figure 8). This model is a visualization of the geology across the London and Thames Valley Model which is constructed from publicly available data, and as such should not be used as a replacement for site investigation. However, it is a useful tool at inferring the stratigraphy that could be at the Site and presenting the data in a helpful visualization.

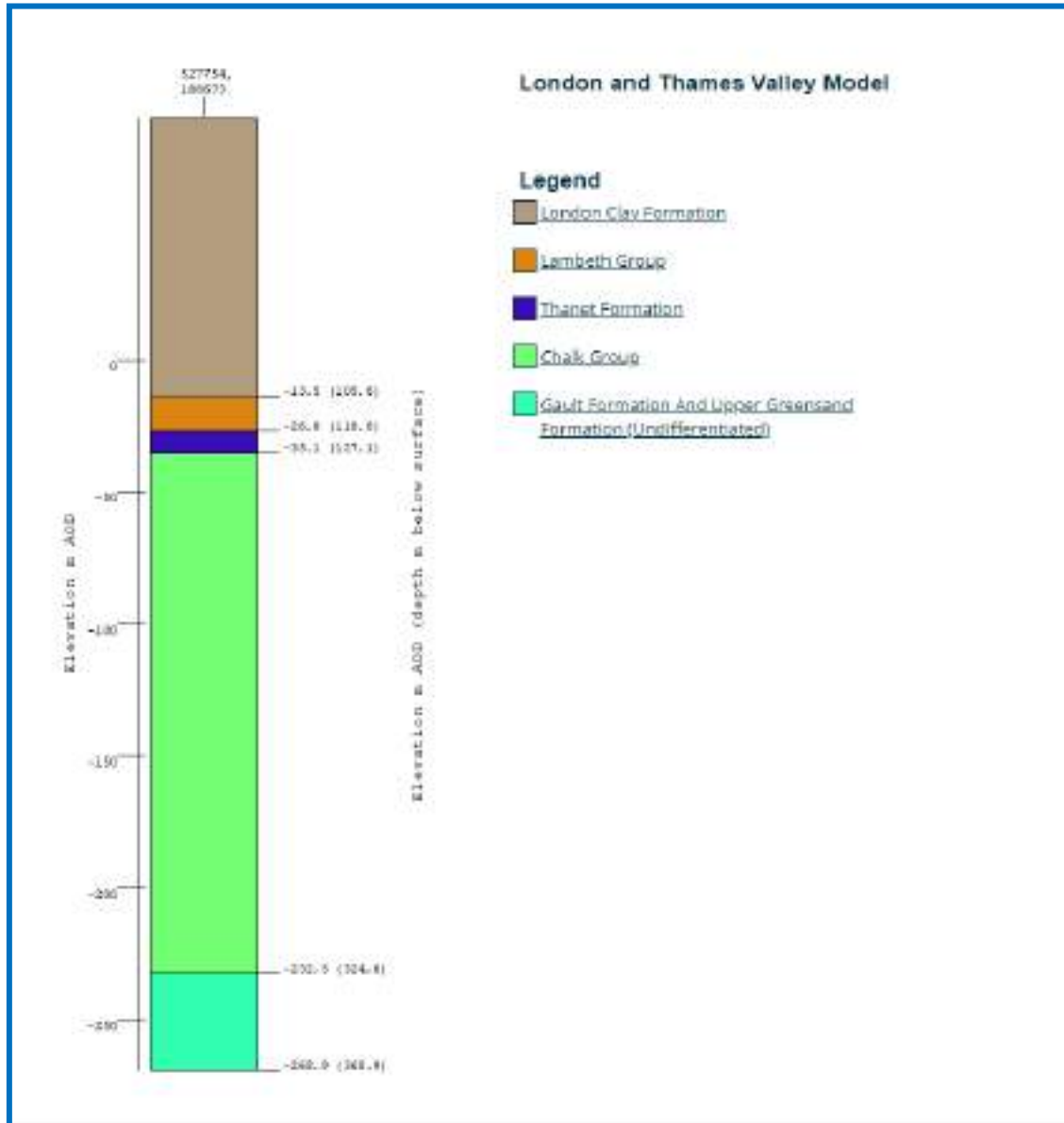
The London and Thames Valley Model Indicates the geology underlying the Site comprises:

- London Clay to a depth of 105.6 m bgl;
- Lambeth Group to a depth of 118.8 m bgl
- Thanet Formation to a depth of 127.1 m bgl; and
- The Thanet Formation is underlain by the Chalk Group, which reaches a depth of 324.6 m bgl. The Chalk Group is a Principal Aquifer which is likely to contain

significant groundwater; however, this groundwater is at such a significant depth that the risk to the Site from the chalk aquifer is negligible.

The London and Thames Valley Model is consistent with the published geological mapping (BGS, 2023), showing that the Site is underlain by London Clay bedrock with no superficial geology.

Figure 8. BGS London and Thames Valley Model (BGS, 2023)



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Groundwater

Borehole TQ28NE426 did not encounter groundwater during its 13 m depth, nor did boreholes TQ28NE427-29.

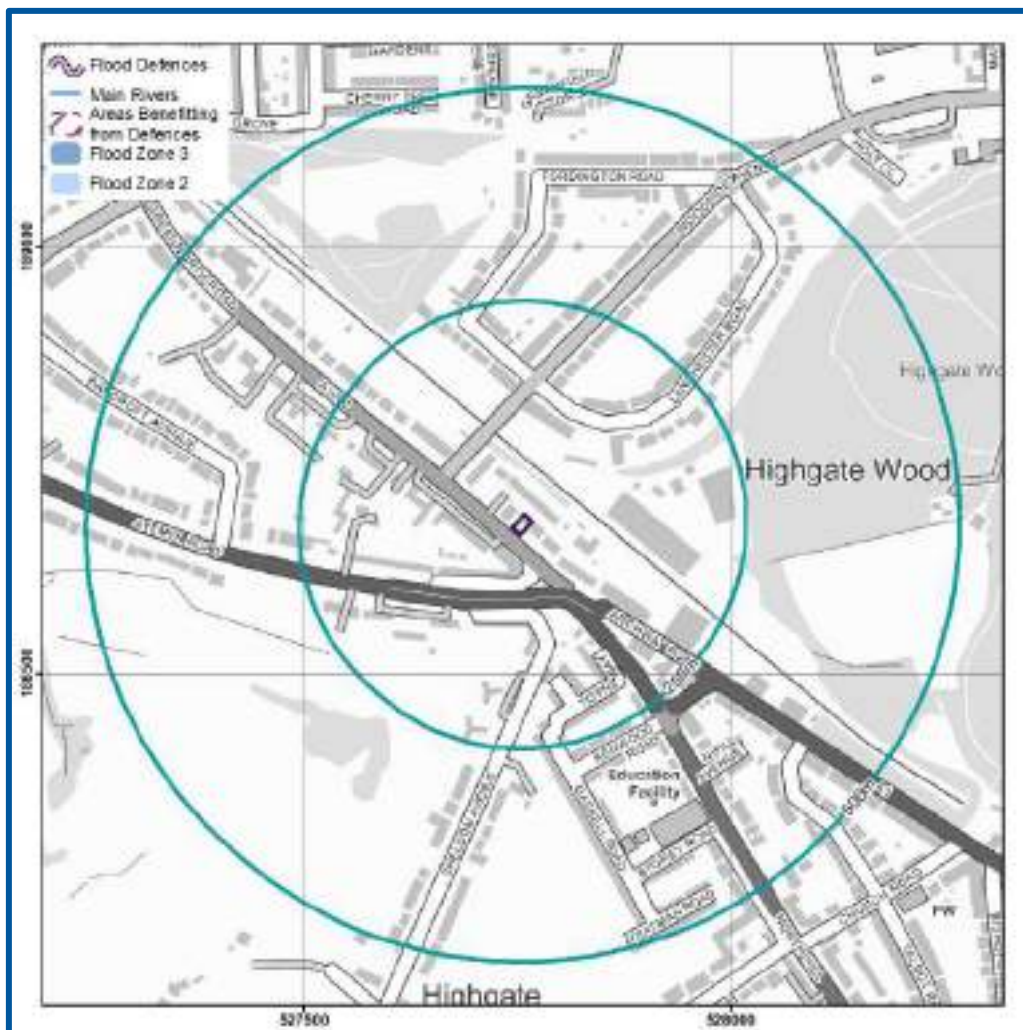
4. Flood risk



Fluvial and tidal flood risk

According to the Environment Agency's (EA) Flood Map for Planning Purposes (Figure 9), the Site is located within Flood Zone 1 and is classified as being at Low probability of fluvial and tidal flooding (EA, 2023).

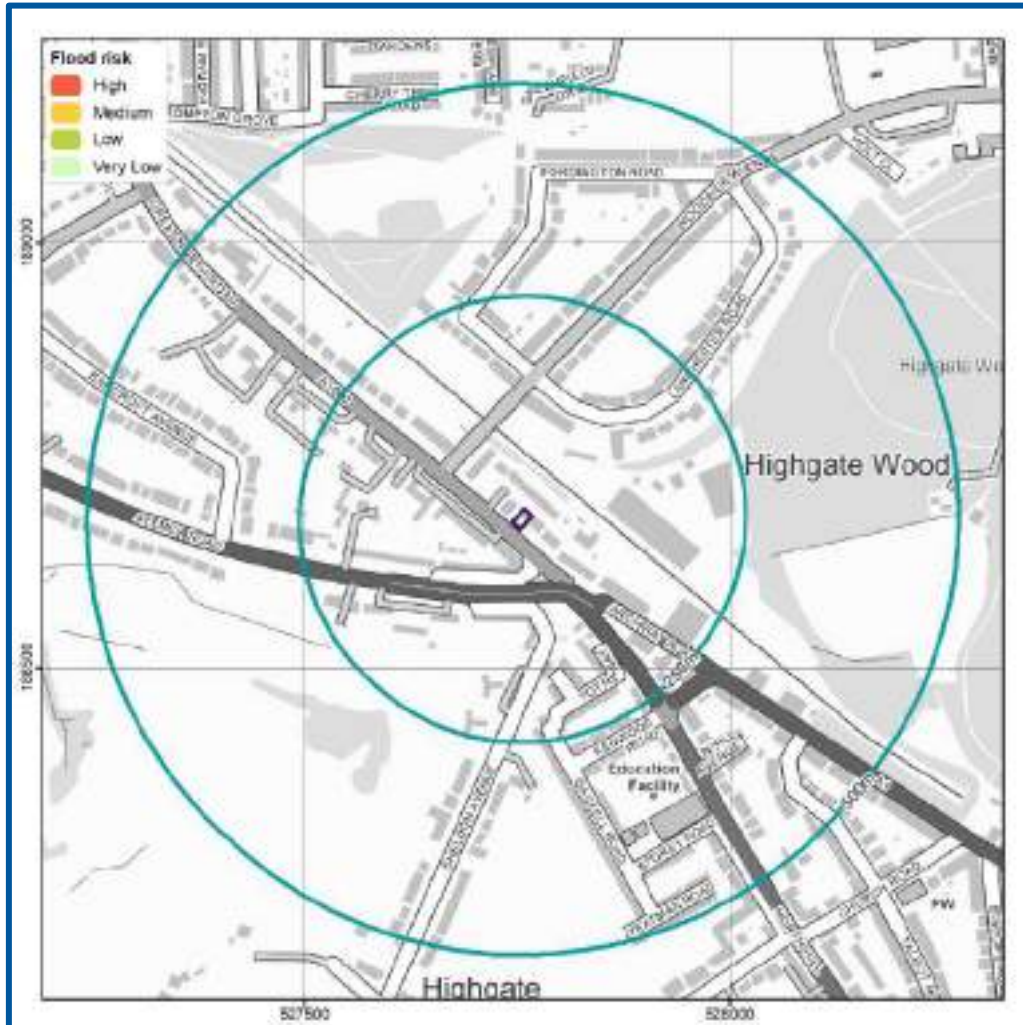
Figure 9. EA Flood Map for Planning Purposes (EA, 2023)



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According to the EA's Risk of Flooding from Rivers and the Sea (RoFRS) mapping (Figure 10), which considers the crest height, standard of protection and condition of defences, the flood risk from Rivers and the Sea is Very Low.

Figure 10. Risk of Flooding from Rivers and Sea map (EA, 2023)



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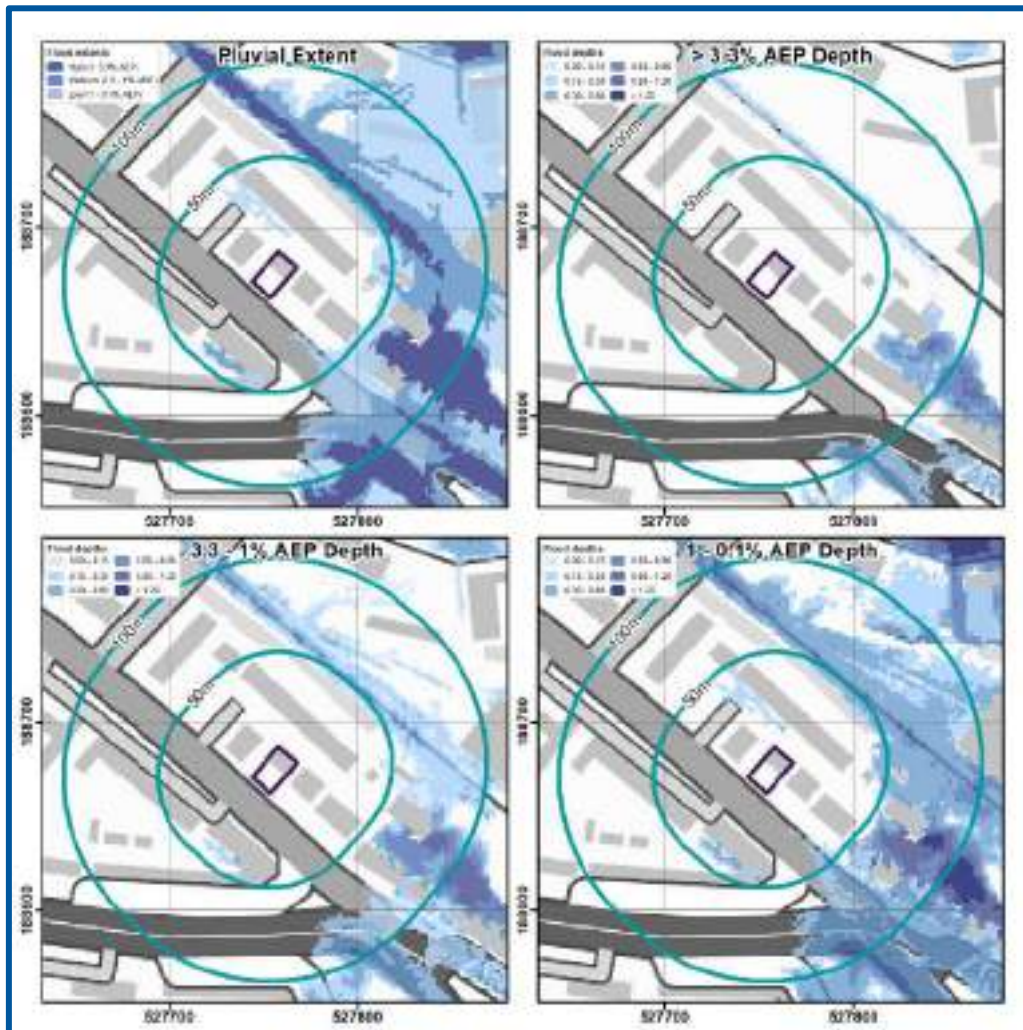
Surface water (pluvial) flood risk

Surface water flooding occurs when intense rainfall exceeds the infiltration capacity of the ground and overwhelms the drainage systems. It can occur in most locations even at higher elevations and at significant distances from river and coastal floodplains.

According to the EA's Risk of Flooding from Surface Water (pluvial) flood mapping, the Site is at a Very Low risk of pluvial flooding.

Figure 11 overleaf confirms the extent and depth of flooding during a 3.3% AEP (1 in 30 year-- high risk) event; 1% AEP (1 in 100 year-- medium risk) event and a 0.1% AEP (1 in 1000 year-- low risk) event. This indicates the proposed development is not located in an area of surface water risk.

Figure 11. Risk of Flooding from Surface Water (pluvial) depth map (EA, 2023)



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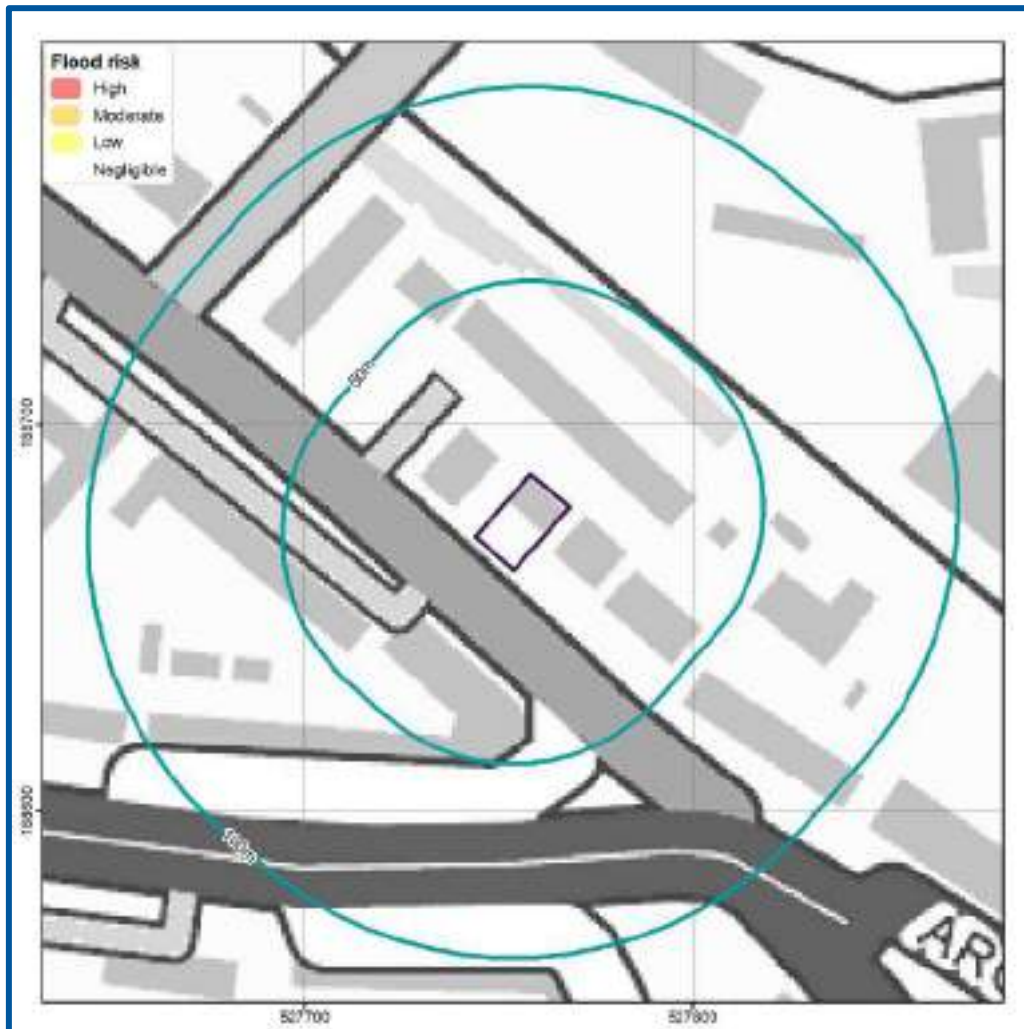
It is noted that the surface water flood risk mapping indicates the risk to the development at the surface. The proposed basement reflects an excavation and therefore is at increased risk of ponding of surface water or collection of interflows.

Groundwater flood risk

Groundwater flooding occurs when sub-surface water emerges from the ground at the surface or into Made Ground and structures. This may be as a result of persistent rainfall that recharges aquifers until they are full; or may be as a result of high river levels, or tides, driving water through near-surface deposits. Flooding may last a long time compared to surface water flooding, from weeks to months. Hence the amount of damage that is caused to property may be substantially higher.

Groundwater Flood Risk screening data (Figure 12) indicates there is a Negligible risk of groundwater flooding at surface in the vicinity from regional scale mechanisms during a 1 in 100 year event.

Figure 12. GeoSmart GW5 Groundwater Flood Risk Map (GeoSmart, 2023)



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However, the risks will be higher for the proposed basement. The risks to the basement are summarised below:

- The Site is not underlain by superficial deposits and the underlying London Clay bedrock is classified as Unproductive Strata.
- There have been no Site-specific ground investigations on Site to confirm the depth of the water table.
- The nearest borehole (TQ28NE426) did not encounter groundwater during its 13 m depth and confirmed the underlying geology to consist of London Clay.
- There are no nearby surface water features that could be in continuity with the Site with the nearest surface water features being the drainage ditches located c. 260 m

south west and c. 290 m east of the Site. Both of which are located at a lower elevation than the Site and underlain by London Clay.

The proposed basement foundations will be located within the London Clay strata and therefore is unlikely to be affected by significant groundwater flows.

The potential impacts of the proposed development on the local groundwater system and nearby development are summarised below:

- Basements have not been identified within the vicinity of the Site.
- As the proposed basement development is not considered likely to interact with the underlying groundwater system, it will have no cumulative impacts on any potential unidentified nearby basements or groundwater.
- The basement is also detached and therefore any groundwater would be able to flow around either side of the basement. Therefore, the proposed basement is unlikely to cause an increase in groundwater flood risk at the Site and for other properties in the vicinity.

Sewer flood risk

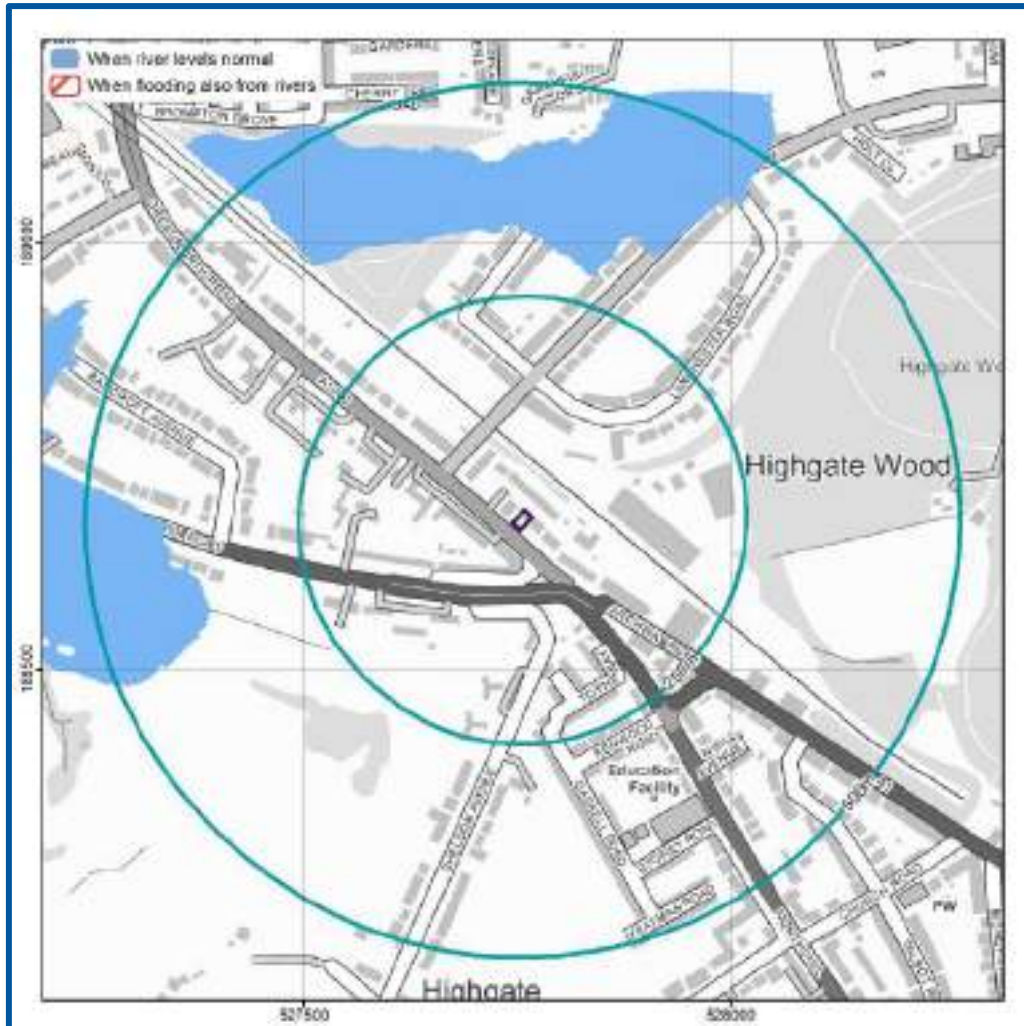
Records held by Thames Water indicate that there have been no incidences of flooding related to the surcharging of public sewers at the Site (Thames Water, 2023; Appendix C).

Note that in the event of a leak in the sewer or water main service trenches could provide a potential pathway for water to enter the basement. It is therefore recommended that water proof construction methods are used on the basement.

Flooding from artificial sources

According to the EA's Risk of Flooding from Reservoir mapping, the Site is not at risk of flooding from reservoirs (Figure 13) (EA, 2023).

Figure 13. Risk of reservoir flooding map (GeoSmart, 2023)



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5. Basement Impact Assessment



The following sections follow guidance discussed in the relevant sections of the Camden Planning Guidance for Basements. This provides a clearly defined reporting framework against which to consider potential matters of concern and to scope out further work required.

Screening

Table 2. Groundwater Screening

Groundwater			
Impact Question	Answer	Justification	Reference
1a. Is the site located directly above an aquifer?	No	The Site is not underlain by superficial deposits. The underlying bedrock comprises the London Clay Formation (Aquifer Designation - Unproductive Strata).	BGS (2023) EA (2023)
1b. Will the proposed basement extend beneath the water table surface?	No	Site investigation has not been undertaken at the Site to confirm the depth to the local water table. The proposed basement will be set at approximately 2.90 m bgl, which is located within horizons in the London Clay and is therefore not expected to contain significant groundwater. As such, the basement is expected to be significantly above the groundwater table.	BGS (2023)
2. Is the site within 100m of a watercourse, well (used / disused) or potential spring line?	No	A potential spring line has not been identified within 100 m of the Site.	OS (2023) EA (2023) BGS (2023)

3. Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	Yes	The proposed development involves an increase in impermeable surfaces at the Site.	Site plans
4. As part of 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 proposed development involves an increase in impermeable surfaces at the Site and therefore less surface water will infiltrate to ground.	Site plans
5. 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 or spring line?	No	There are multiple drainage channels located surrounding the Site with the closest located c. 260 m south west and c. 290 m east of the Site. Both of which are located at a lower elevation than the Site and within London Clay bedrock.	OS (2023) EA (2023)

Table 3. Surface Water and Flooding Screening

Surface Water and Flooding			
1. 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?	Yes	The existing drainage is not known however the increasing impermeable areas causing an increase in volume and flows entering the drainage network.	Site plans
2. Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?	Yes	The proposed development involves an increase in impermeable surfaces at the Site.	Site plans
3. Will the proposed basement result in changes to the profile of the inflows (instantaneous and long-term) of surface water being received by adjacent properties or downstream watercourses?	No	It is assumed that surface water runoff from the proposed development will continue to drain as existing.	Site plans
4. Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No	The previous Site usage and proposed development are both residential, and therefore a change in the quality of surface water runoff is not anticipated.	Site plans

5. Is the site in an area identified to have surface water flood risk according to either the Local Flood Risk Management Strategy or the Strategic Flood Risk Assessment or is it at risk from flooding, for example because the proposed basement is below the static water level of nearby surface water feature.	No	The Site is not identified as having surface water flood risk in the Strategic Flood Risk Assessment. The risk of pluvial flooding across the Site is Very Low according to EA mapping.	SFRA (JBA Consulting, 2015) EA (2023)
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Screening summary

The screening process identifies the following issues to be carried forward to scoping for further assessment:

- The proportion of impermeable areas at the Site will increase as a result of the proposed development;

The other potential concerns considered within the screening process have been demonstrated to be not applicable or not significant when applied to the proposed development.

Scoping

Where a potential impact has been identified at the screening stage above, the potential further need for assessment is considered and scoped. The scoping stage should aim to build on the information provided in the screening stage. During this phase, a desk study should be undertaken to determine the preliminary impacts of the proposed basement development. This initial assessment should be used to identify any site investigation works required.

Table 4. Groundwater Scoping

Groundwater		
Impact Question	Answer	Potential Impact & Assessment
3. Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	Yes	The proposed development involves an increase in impermeable surfaces at the Site. Any increase in impermeable areas could result in increased surface water runoff in heavy rainfall events, which could increase the risk of pluvial flooding at the Site. A Sustainable Drainage Strategy should be undertaken to ensure that extra surface water flows generated by the increase in impermeable areas are managed safely on Site.

Table 5. Surface Water and Flooding Scoping

Surface Water and Flooding		
1. 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?	Yes	The proposed development involves an increase in impermeable surfaces at the Site. Any increase in impermeable areas could result in increased surface water runoff in heavy rainfall events, which could increase the risk of pluvial flooding at the Site. A Sustainable Drainage Strategy should be undertaken to ensure that extra surface water flows generated by the increase in impermeable areas are managed safely on Site.
2. Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?	Yes	The proposed development involves an increase in impermeable surfaces at the Site. Any increase in impermeable areas could result in increased surface water runoff in heavy rainfall events, which could increase the risk of pluvial flooding at the Site. A Sustainable Drainage Strategy should be undertaken to ensure that extra surface water flows generated by the increase in impermeable areas are managed safely on Site.

6. Conclusions and Recommendations



Site setting constraints

Flood risks and impacts	Baseline*	After Mitigation **
Groundwater flooding	Low	Low
Surface water flooding	Very Low	Very Low

*BASELINE risks have been calculated for the whole Site, using national risk maps, including the benefit of EA flood defences. Note that the risks presented in the baseline mapping are applicable to surface development only, whereas the risks presented on the table are applicable to the proposed subterranean development and therefore may be higher.

**FINAL RISK RATING Includes a detailed analyses of flooding risks over the lifetime of the proposed development, including allowances for climate change AND assumes recommended mitigation measures are implemented.

Recommendations / Next steps

Recommendations for mitigation are provided below, based upon the proposed basement and wider development design:

- A watching brief should be implemented during the construction of the proposed development. Should groundwater be encountered, works should stop, further investigation of the risks should be undertaken and appropriate mitigation measures should be implemented.
- Flood resilient measures should be incorporated into the basement to prevent water ingress and to reduce flood damage should flooding occur. Tanking of the basement should be considered to prevent the ingress of groundwater into the basement.
- A Sustainable Drainage Strategy should be undertaken to ensure that extra surface water flows generated by the increase in impermeable areas are managed safely on Site.

7. Further information



The following table includes a list of additional products by GeoSmart:

Additional GeoSmart Products			
	Additional assessment: EnviroSmart Report		Provides a robust desk-based assessment of potential contaminated land issues, taking into account the regulatory perspective. Our EnviroSmart reports are designed to be the most cost effective solution for planning conditions. Each report is individually prepared by a highly experienced consultant conversant with Local Authority requirements. Ideal for pre-planning or for addressing planning conditions for small developments. Can also be used for land transactions. Please contact info@geosmartinfo.co.uk for further information.

8. References



References

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9. Appendices



Appendix A



Site plans

Appendix B



Environment Agency LiDAR map

Contours

- 1.0m intervals
- 0.25m intervals

Elevation:

- Max: 92.92m
- Min: 81.95m

LIDAR data sourced from 2022 at 1m resolution

168700



Contains OS

527700

527900



Thames Water sewer flooding report

Sewer Flooding

History Enquiry



GeoSmart Information Ltd

Bellstone

Search address supplied 12
Great North Road
London
N6 4LX

Your reference 79764

Our reference SFH/SFH Standard/2023_4862840

Received date 25 July 2023

Search date 25 July 2023



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

Sewer Flooding

History Enquiry



Search address supplied: 12,Great North Road,London,N6 4LX

This search is recommended to check for any sewer flooding in a specific address or area

TWUL, trading as Property Searches, are responsible in respect of the following:-

- (i) any negligent or incorrect entry in the records searched;
- (ii) any negligent or incorrect interpretation of the records searched;
- (iii) and any negligent or incorrect recording of that interpretation in the search report
- (iv) compensation payments



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

Sewer Flooding

History Enquiry



History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is “overloaded” when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- “Internal flooding” from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- “At Risk” properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company’s reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

Appendix D



Borehole logs



Site Analytical Services Ltd.							Site 40 CREILSON AVENUE, HIGHWATE, LONDON, HA 4 1ND		Certificate Number 6H2	
Boring Method CONTINUOUS FLIGHT AUGER		Diameter 200mm (ø) to 0.00m		Ground Level (mOD) 1.00m			Client HARRISON VASSAL LIMITED		Job Number 07132299	
Location TD 276 882		Date 27/04/2007		Borehole			Sheet 1/2			
Depth (m)	Sample / Test	Gravel (%)	Water (%)	Field Records	Gravel (%)	Depth (m)	Description	Legend		
0.00	D1					0.00	MUDE (GRUDED) - dark grey silty grey brown clayey silt with some gravel and brick fragments			
0.00	D2					0.50	Silt becoming firm reddish brown, orange brown and green grey sandy silty CLAY with occasional fine sub rounded shell gravel and nodules			
0.75	D3					1.00				
1.00	D4					1.25				
1.00	D5					1.50				
1.50	V2 23					1.50	Fine to stiff becoming stiff brown and mottled orange brown and reddish blue grey silty CLAY with occasional patches of orange brown silty fine sand and occasional small pyritic crystals			
2.00	V3 26					2.00				
2.00	D6					2.50				
2.50	D7					2.50				
2.50	V4 100					2.50				
3.00	D8					3.00				
3.00	V5 10					3.50				
3.50	D9					3.50				
3.50	V6 100					3.50				
4.00	D10					4.00				
4.00	V7 120					4.00				
4.50	V8 120					4.50				
4.50	D11					4.50				
5.00	D12					5.00				
5.00	V9 140					5.00				
5.50	D13					5.50				
6.00	V10 140					6.00				
6.50	D14					6.50				
7.00	V11 140					7.00				
7.50	D15					7.50				
8.00	V12 140					8.00				
8.00	D16					8.00				
8.00	V13 140					8.00				
9.00	D17					9.00				
9.00	V14 140					9.00				

Remarks:
 Flamingo brand continuous flight auger (CFA) used in 4.00m depth - water dropped from 0.20m to 0.00m depth in 4.00m
 V = Vane Test - Result in kPa
 D = Disturbed Sample
 Groundwater was not encountered during drilling
 Drilling from 0.00m to 9.00m at 1.00m intervals

Scale (approx)

1:50

Figure No.

07132299



Site Analytical Services Ltd.						Title		Borehole Number	
Boring Method		Diameter		Ground Level (mOD)		Client		Job Number	
CONTINUOUS FLIGHT AUGER		100mm overall to 0.00m				HARRISON VENTURES LIMITED		07131660	
		Location		Date		Engineer		Phone	
		TQ 278 442		27/04/2007				012	
Depth (m)	Sample / Tests	Gravel Count (m)	Worms (m)	Probe Readings	Level (mOD)	Depth (m) (1m/10cm)	Description	Remarks	Notes
10.00 05.00	D17 V14 140+						Soils to very stiff clay, very yellow grey brown, fissured stiff clay with occasional patches of light brown clay (no sand) and scattered small gypsum crystals		
11.00 11.00	D18 V16 160+					05.00			
12.00 12.00	D19 V18 180+								
13.00 13.00	D20 V17 140+			27/04/2007 DRY		13.00	Complete at 13.00m.		
Remarks							Scale (approx)	1:50	100m
							Figure No.	070200 01-2	

SAs

Site Analytical Services Ltd.

REF: 07/10280

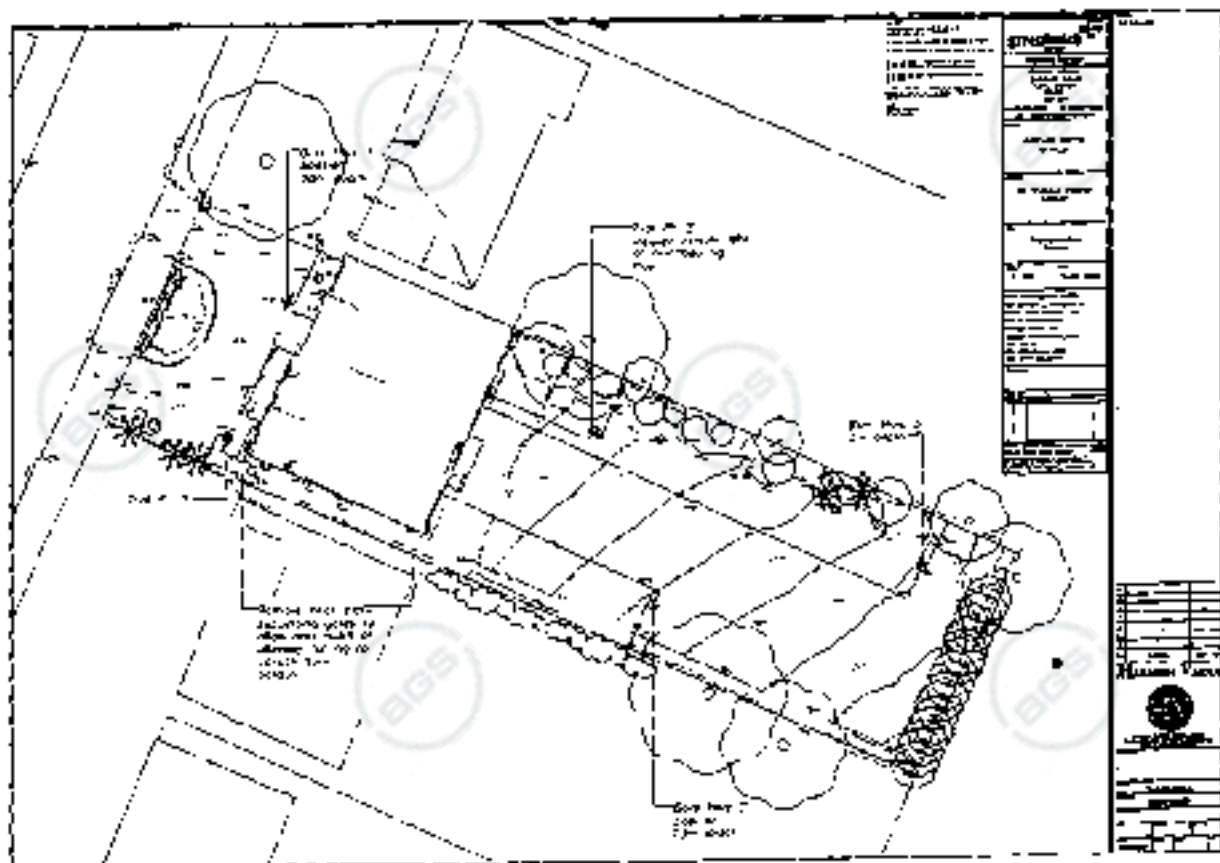
LOCATION: 65 Seaborn Avenue, Highgate, London N6 4ND

FIG: 1

TITLE: Site Sketch Plan

DATE: August 2007

SCALE: NTS



Disclaimer

This report has been prepared by GeoSmart in its professional capacity as soil, groundwater, flood risk and drainage specialists, with reasonable skill, care and diligence within the agreed scope and terms of contract and taking account of the manpower and resources devoted to it by agreement with its client and is provided by GeoSmart solely for the internal use of its client.

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