



**create**  
CONSULTING  
ENGINEERS LTD

**1 Gondar Gardens**

**Unit 2 – Basement Impact Assessment**

# 1 GONDAR GARDENS

## Unit 2 – Basement Impact Assessment

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**Reference:** MP/GL/P13-487

**Date:** April 2013

1 Gondar Gardens  
Unit 2 – Basement Impact Assessment

# 1 GONDAR GARDENS

## Unit 2 – Basement Impact Assessment

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### Registration of Amendments

Revision	Amendment Details	Prepared	Approved
0	DRAFT	MW/GD	JK

## 1.0 FOREWORD

### General Conditions Relating to a Basement Assessment

- 1.1 This report is a preliminary stage of assessment designed to identify potential hazards and undertake preliminary hazard assessment. As such it is possible that further work may be recommended based on the findings. This work has been devised to generally comply with the relevant principles and requirements of Ove Arup & Partners (2010) Camden geological, hydrogeological and hydrological study. “Guidance for Subterranean Development for London Borough of Camden”, November 2010.
- 1.2 The recommendations made and opinions expressed in this report by the writers are based on the information obtained from the sources described using a methodology intended to provide reasonable consistency and robustness.
- 1.3 Elements of the desk study have been compiled and extended into hazard identification. Information gained during the initial stages of the desk study has been collated to form a conceptual ground model of the site, which details the characteristic ground conditions and the elements of the surrounding environment.
- 1.4 Some items of the desk study have been provided by third parties and whilst there is no reason to doubt the accuracy, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report.
- 1.5 Parts of the study based on non-invasive techniques cannot guarantee that the area investigated has the properties described in the report. Furthermore, there may be additional issues on the site, not foreseen during the survey, which involve potentially hazardous substances.
- 1.6 This report is produced for the benefit of the client alone. No responsibility can be accepted for any consequences of this information being passed to a third party who may act upon its contents/recommendations.

## 2.0 TERMS OF REFERENCE AND INTRODUCTION

### General

- 2.1 This report was compiled using available published documentation in association with observations made during a site visit. The assessment has been devised to generally comply with the relevant principles and requirements of Ove Arup & Partners (2010) Camden geological, hydrogeological and hydrological study, "Guidance for Subterranean Development for London Borough of Camden", November 2010. The work covered by this report was undertaken with input from Harrison Group.

### Current Development and Aims of the Assessment

- 2.2 We understand that planning permission was initially granted in 2009 for the construction of a detached residential property (one of three). In addition to the above ground elements of this new build, this included for a part basement to be constructed beneath Unit 2.
- 2.3 Although a detailed design masterplan is not available we have been provided with architectural and structural drawings which indicate that a larger basement was subsequently constructed over the full footprint of the building at a level of around 2.80m to 3.10m beneath the existing ground surface. We understand that the basement does not form a standalone flat but that it will be used for habitation purposes.
- 2.4 As a result of this a retrospective planning application is now being made and this assessment would be in support of this application.
- 2.5 The aim of the work is to assess if this basement will have a detrimental impact on the surroundings with respect to groundwater and land stability and in particular to assess whether the development will affect the stability of neighbouring properties, local and regional hydrogeology.
- 2.6 This will not form a full basement impact assessment and will not include any intrusive works or presentation of detailed calculations for the already built structures, which is outside the scope of this report and will be made available by others. Nor does it include geotechnical or environmental recommendations for construction of the development.
- 2.7 This work consists of an initial scoping assessment generally as set out in the London Borough of Camden Planning Guidance and their Guidance for Subterranean Development. This phased approach is considered appropriate on the understanding that all parties, including Camden Planning, have and intend to continue adopting a pragmatic approach in this matter.

- 2.8 It is important to note that this scoping exercise may highlight issues that require further consideration and may recommend additional works be carried out.

### **Conditions and Limitations**

- 2.9 Elements of this Basement Impact Assessment have been carried out generally in accordance with procedures specified in the London Borough of Camden Planning Guidance CPG4 (Basements & Lightwells) and their Guidance for Subterranean Development prepared by Arup.
- 2.10 Although some photographic evidence relating to the basement excavation, including trial pits, has been made available we understand that no dedicated ground investigation has been carried out as part of the development. Elements of the report have been provided for guidance purpose only.
- 2.11 The conclusions and recommendations made in this report are limited to those that can be made on the basis of desk based research and observations made during a recent site visit.

### **Qualifications**

- 2.12 Elements of this assessment have been carried out by Mark Williams, BSc (Hons) in Engineering Geology and Geotechnics. Mark is a chartered engineer (CEng) and a member of the Institute of Materials, Minerals and Mining (MIMMM). Mark specialises in water and the environment and has 30 years' experience in geotechnical and geoenvironmental engineering.
- 2.13 The assessment has been made in conjunction with Graham Dowlen. Graham is a chartered geologist (CGeol) and Fellow of the Geological Society (FGS) with 30 years experience in geotechnical engineering and engineering geology. Graham has wide ranging expertise in multiple areas of ground and civil engineering schemes from single residential properties through to large scale multinational projects and acts as an independent assessor / expert witness.

### 3.0 SITE SETTING

3.1 Details of the site were observed during a site walkover undertaken on the 16/04/13. Additional information has been sourced from a GroundSure GeoInsight Report Ref FIND-34880 commissioned as part of this investigation. Additional sources are as quoted.

#### Site Location

3.2 The site was located at Unit 2, 1 Gondar Gardens, West Hampstead, NW6 1EW with the approximate National Grid Reference of 524787, 185164.

3.3 The site was located in a mixed residential / light commercial setting and was accessed directly off Gondar Gardens.

3.4 A site location plan GL17300-DR001 has been presented under plans.

#### Site Description

3.5 The site comprised an existing two storey detached residential property and associated grounds / areas of hardstanding:

- The site itself was irregular in shape forming a rough “L” shape with the long axis running parallel to and fronting Gondar Gardens. The site had an area of approximately 0.01ha with an elevation of approximately 70m above Ordnance Datum (aOD).
- Access was gained directly off Gondar Gardens which formed the eastern boundary of the plot.
- The site was situated upon an incline which sloped to the south. The surrounding area also sloped away towards the east.
- No vegetation was noted although access was not gained to what we understand to be a small back garden.
- Overhead services were not recorded on site itself. Manhole covers were noted along Gondar Gardens indicating below ground services (assumed water, gas, telecoms, drainage), all of which were assumed to be active.

3.6 In addition to the above we understand that both the adjacent properties, which were constructed either side of the property under investigation and as part of the wider development, do not have basements of their own.

3.7 A site definition drawing GL17001-DR002 has been presented in the plans.

## Geology

- 3.8 The following general assessment of the geology of the site and ground conditions has been inferred from the 1:50,000 BGS Sheet 256 “North London” Solid and Drift Edition, the FIND Report Ref. 34880 and our experience in the area.

Stratum		Depth to Base (mbgl)	Thickness (m)	Description / Comment
Group	Formation			
Made Ground		-	-	Absent
Drift Deposits		-	-	Absent
Thames Group	London Clay	-	>20m	The London Clay Formation comprises stiff grey fissured clay, weathering to brown near surface. Concretions of argillaceous limestone in nodular form (Claystones) occur throughout the formation. Expected to be present over entire site.

**Table 3.1: Summary of Expected Geology**

### Ground Workings

- 3.9 None indicated within 100m of the site. The nearest surface workings are around 100m to the South West and North East and relate to railway cuttings and a covered reservoir respectively.

### Mining, Extraction and Natural Cavities

- 3.10 No mining activities are recorded on or in the near vicinity, i.e. within 1,000m of the site.

### Ground Subsidence

- 3.11 The site is indicated as being at moderate risk from shrinkage heave, and very low risk, or less risk, from ground dissolution, compressible deposits or landslides.

### Borehole Records

- 3.12 Examination of online BGS borehole records reveals a single borehole around 200m to the south of the site on Mapesbury Crescent.
- 3.13 Although not logged in detail it suggests weathered London Clay to around 7m (22') over unweathered London Clay to the termination of the borehole at a depth of around 16m (50').



### **Slope Stability and Subterranean Developments**

- 3.14 The property is on a hill which slopes primarily to the south at around 6°. Although steep this is not at a degree where it is considered that slope instability problems are likely to be encountered.
- 3.15 We understand that the basement underlies, but does not extend beyond, the full footprint of the main structure. Neither of the adjoining structures, units 1 and 3, which form parts of the wider development have basements. It is not known whether properties in the wider vicinity have basements.

### **Hydrology and Hydrogeology**

- 3.16 A study of the aquifer maps on the Environment Agency website revealed the site to be underlain by the London Clay Formation which is described as “Unproductive Strata”. Unproductive Strata are rock layers or drift deposits with low permeability that has negligible significance for water supply or river base flow.
- 3.17 No surface water features were recorded on the site itself or in the immediate vicinity. The site is not located in a groundwater Source Protection Zone (SPZ) nor was the site recorded as being at risk from flooding from rivers or the sea.
- 3.18 Areas of Camden are at risk from sewer flooding and surface water runoff and two recent floods, 1975 and 2002, have caused considerable damage in the borough.
- 3.19 London Borough of Camden Planning Guidance CPG4 Basements and Lightwells contains a list of streets in Camden that are thought be at risk from surface water flooding. Gondar Gardens is not listed as one of them.
- 3.20 The “Camden Geological, Hydrogeological and Hydrological Study. Guidance for Subterranean Development for London Borough of Camden” Ove Arup & Partners (2010), contains a Flood Map which indicates areas with the ‘potential to be at risk from surface water flooding’. Although several streets in the near vicinity of Gondar Gardens are considered to be at risk, Gondar Gardens itself it not indicated as such.

### **Radon**

- 3.21 From inspection of the GroundSure report and the relevant radon map, as published by the BRE, the site does not fall within an area affected by radon. The area is not considered an affected area as less than 1% of homes are above the action level.

## 4.0 SCREENING

### Screening Assessment

- 4.1 The London Borough of Camden guidance suggests that any development proposal that includes a subterranean basement should be screened to determine whether or not a full Basement Impact Assessment is required. It is appreciated that this process was not designed to operate retrospectively. We have however, as far as is practical, applied the principals in the following assessment.
- 4.2 A number of screening tools are included in the Guidance for Subterranean Development prepared by Arup and reference has been made to these. These consist of a series of questions with a screening flow chart relating to groundwater flow, land stability and surface water flow.

Question	Response
1a. Is the site located directly above an aquifer?	No.
1b. Will the proposed basement extend beneath the water table surface?	No. Although not directly proven the underlying geology will comprise London Clay, the elevation and slope of the site and site topography would suggest that the groundwater table is likely to be at a considerable depth well beyond the depth of a
2. Is the site within 100m of a watercourse, well (used/disused) or potential spring line?	No known river, pond, reservoir, spring or well within 100 m of the site.
3. Is the site within the catchment of the pond chains on Hampstead Heath?	No
4. Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	No
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 Development should not result in additional surface water discharge. Surface water will be discharged via existing surface water sewers.
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 any local pond or spring line?	No

**Table 4.1: Summary of Slope Stability and Subterranean Developments**

- 4.3 The above assessment did not identify any potential issues that need to be further assessed.

Question	Response
1. Does the existing site include slopes, natural or manmade, greater than 7°?	No.
2. Will the proposed re-profiling of landscaping at the site change slopes at the property boundary to more than 7°?	No
3. Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°?	No
4. Is the site within a wider hillside setting in which the general slope is greater than 7°?	No Although located on a hill the slope as measured from architectural drawings is around 6°.
5. Is the London Clay the shallowest strata at the site?	Yes. Although no dedicated ground investigation has been undertaken we have been informed by the client, and relied upon the fact, that this is the case. i.e. upon demolition of the previously existing structures London Clay was encountered
6. 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
7. Is there a history of seasonal shrink-swell subsidence in the local area and / or evidence of such effects at the site?	No, but possible considering the underlying geology.
8. Is the site within 100 m of a watercourse or potential spring line?	No
9. Is the site within an area of previously worked ground?	No
10. Is the site within an aquifer?	No
11. Is the site within 50 m of Hampstead Heath ponds?	No
12. Is the site within 5 m of a highway or pedestrian right of way?	Yes - the site borders and is accessed of Gondar Gardens and associated footpath.
13. Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	No Although neither of the properties on either side of this development incorporate basements all three units were constructed contemporaneously.
14. Is the site over (or within the exclusion zone of) any tunnels, eg railway lines?	No

**Table 4.2: Stability Screening Assessment**

4.4 The above assessment has identified the following potential issues that need to be considered:

- The site is underlain by London Clay.
- The site is within 5m of a highway or pedestrian right of way.

Question	Response
1. Is the site within the catchment of the pond chains on Hampstead Heath?	No
2. 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
3. Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	No
4. Will the proposed basement development 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
5. Will the proposed basement result in changes to the quantity of surface water being received by adjacent properties or downstream watercourses?	No
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 Kings Cross, or is it at risk of flooding because the proposed basement is below the static water level of a nearby surface water feature?	No

**Table 4.3: Surface Flow and Flood Screening Assessment**

4.5 The above assessment has not identified any potential issues that need further consideration.

## 5.0 CONCLUSIONS

- 5.1 The initial screening assessment has identified a number of potential impacts which require further consideration. The table below summarises these and details the possible consequences.
- 5.2 No dedicated ground investigation has been carried out as part of the development we have relied upon third party sources in relation to several elements of this work.
- 5.3 The basement development is modest in size such that it does not extend beyond the footprint of the building and is no deeper than one full story below ground level (approximately 3m in depth).
- 5.4 It should also be noted that as the basement has already been constructed we have assumed that reasonable engineering has been employed during the design and construction of the development. It is confirmed that the development has been signed off by Building Control.

Potential Impact	Possible Consequence
London Clay the shallowest strata at the site?	The near surface London Clay stratum is prone to seasonal shrink swell i.e. subsidence and heave.
Proximity to the public highway	The basement is located within 5m of the closest highway, the excavation of which may result in structural damage to the highway unless appropriate construction techniques are employed. The excavation could have resulted in damage to the road, pathway or any underground services buried in trenches beneath the road or pathway.

- 5.5 In summary it is concluded that the development is unlikely to result in any specific issues relating to slope stability, hydrogeology and hydrology of the site. It is considered that suitable construction methods were adopted to ensure that there should not be any negative impacts on groundwater.

## 6.0 REFERENCES

- London Borough of Camden Planning Guidance CPG4 Basements and Lightwells
- Ove Arup & Partners (2010) Camden Geological, Hydrogeological and Hydrological Study. Guidance for Subterranean Development for London Borough of Camden, November 2010
- Find GroundSure GeolInsight Report (34880)
- BSI British Standard, BS5930:1999+A2:2010 "Code of Practice for Site Investigations".
- BS EN ISO 22475-1:2006 & 22475-2/3:2011 Geotechnical investigation and testing. Sampling methods and groundwater measurements.
- BS EN ISO 22476:2005+A1:2011 Geotechnical investigation and testing. Various.
- BS EN ISO 14688-2:2004 Geotechnical investigation and testing. Identification and classification of soil. Principles for a classification.
- BSI British Standard. 1990. BS1377:1990, "Methods of Test for Soils for Civil Engineering Purposes".
- BS EN 1997-1 Eurocode 7 Part 1 "General Rules"
- BS EN 1997-2 Eurocode 7 Part 2 "Ground Investigation and Testing"
- National House Building Council (NHBC) Standards (2013), *Part 4.2*.
- Architectural Drawing No. 08-03\_Ls(U1-U4)\_001

**7.0 DISCLAIMER**

- 7.1 Create Consulting Engineers Ltd disclaims any responsibility to the Client and others in respect of any matters outside the scope of this report.
- 7.2 The copyright of this report is vested in Mr C Thompson and Create Consulting Engineers Ltd. The Client, or his appointed representatives, may copy the report for purposes in connection with the development described herein. It shall not be copied by any other party or used for any other purposes without the written consent of Mr C Thompson or Create Consulting Engineers Ltd.
- 7.3 Create Consulting Engineers Ltd accepts no responsibility whatsoever to other parties to whom this report, or any part thereof, is made known. Any such other parties rely upon the report at their own risk.

# APPENDICES



# APPENDIX A

# GroundSure GeoInsight

Address: ,

Date: 17 Apr 2013

Report Reference: FIND-34880

Your Reference: GL17300



Brought to you by FIND

## Aerial Photograph of Study Site



Site Name: ,  
Grid Reference: 524787,185164  
Size of Site: 0.01 ha

Aerial photography supplied by Getmapping PLC.  
© Copyright Getmapping PLC 2003. All Rights Reserved.

# Overview of Findings

The GroundSure GeoInsight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Shallow Mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and GroundSure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Report Section	Number of records found within (X) m of the study site boundary
<b>1. Geology</b>	Description
<b>1.1 Artificial Ground,</b>	
1.1.1 Is there any Artificial Ground /Made Ground present beneath the study site?*	No
1.1.2 Are there any records relating to permeability of artificial ground within the study site* boundary?	No
<b>1.2 Superficial Geology &amp; Landslips</b>	
1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
1.2.2 Are there any records relating to permeability of superficial geology within the study site* boundary?	No
1.2.3 Are there any records of landslip within 500m of the study site boundary?	No
1.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No
<b>1.3 Bedrock, Solid Geology &amp; Faults</b>	
1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
1.3.2 Are there any records relating to permeability of bedrock within the study site* boundary?	Yes
1.3.3 Are there any records of faults within 500m of the study site boundary?	No
1.3.4 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level
1.3.5 Is the property in an area where Radon Protection Measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary

\* This includes an automatically generated 50m buffer zone around the site

Source:Scale 1:50,000 BGS Sheet No:256

2. Ground Workings	on-site	0-50	51-250	251-500	501-1000
2.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	15	-	-
2.2 Historical Underground Workings Features from Small Scale Mapping	0	0	0	0	0
2.3 Current Ground Workings	0	0	0	0	0

3. Mining, Extraction & Natural Cavities	on-site	0-50	51-250	251-500	501-1000
3.1 Historical Mining	0	0	0	0	0
3.2 Coal Mining	0	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
3.4 Non-Coal Mining*	0	0	0	0	0
3.5 Non-Coal Mining Cavities	0	0	0	0	0
3.6 Natural Cavities	0	0	0	0	0
3.7 Brine Extraction	0	0	0	0	0
3.8 Gypsum Extraction	0	0	0	0	0
3.9 Tin Mining	0	0	0	0	0
3.10 Clay Mining	0	0	0	0	0

\*This includes an automatically generated 50m buffer zone around the site

4. Natural Ground Subsidence	on-site*	0-50	51-250	251-500	501-1000
4.1 Shrink-Swell Clay	Moderate	-	-	-	-
4.2 Landslides	Very Low	-	-	-	-
4.3 Ground Dissolution of Soluble Rocks	Null	-	-	-	-
4.4 Compressible Deposits	Negligible	-	-	-	-
4.5 Collapsible Deposits	Very Low	-	-	-	-
4.6 Running Sand	Negligible	-	-	-	-

\* This includes an automatically generated 50m buffer zone around the site

5. Borehole Records	on-site	0-50	51-250	251-500	501-1000
5.1 BGS Recorded Boreholes	0	0	1	-	-

6. Estimated Background Soil Chemistry	on-site	0-50	51-250	251-500	501-1000
6.1 Records of Background Soil Chemistry	1	0	0	-	-



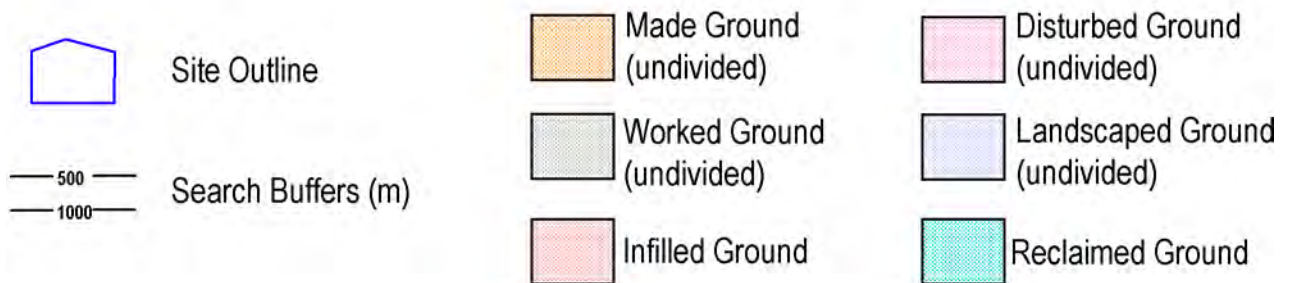
# 1.1 Artificial Ground Map



Artificial Ground Legend



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Licence Number: 100035207



Geological information represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

---

## 1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:256

### 1.1.1 Artificial/Made Ground

**Are there any records of Artificial/Made Ground within 500m of the study site boundary?** **No**

Database searched and no data found.

---

### 1.1.2 Permeability of Artificial Ground

**Are there any records relating to permeability of artificial ground within the study site\* boundary?** **No**

Database searched and no data found.

---

---

\* This includes an automatically generated 50m buffer zone around the site.



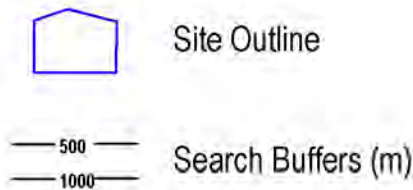
# 1.2 Superficial Deposits and Landslips Map



Superficial and Landslips Legend



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Geological information represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.



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## 1.2 Superficial Deposits and Landslips

### 1.2.1 Superficial Deposits/Drift Geology

**Are there any records of Superficial Deposits/Drift Geology within 500m of the study site boundary? No**

Database searched and no data found.

---

### 1.2.2 Permeability of Superficial Ground

**Are there any records relating to permeability of superficial ground within the study site\* boundary? No**

Database searched and no data found.

---

### 1.2.3 Landslip

**Are there any records of Landslip within 500m of the study site boundary? No**

Database searched and no data found.

---

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

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### 1.2.4 Landslip Permeability

**Are there any records relating to permeability of landslips within the study site\* boundary? No**

Database searched and no data found.

---

\*This includes an automatically generated 50m buffer zone around the site.

# 1.3 Bedrock and Faults Map



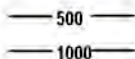
Bedrock & Faults Deposits Legend



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Site Outline



Search Buffers (m)

Geological information represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

## 1.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:256

### 1.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance (m)	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	LC-CLSS	London Clay Formation - Clay, Silt And Sand	Eocene

### 1.3.2 Permeability of Bedrock Ground

**Are there any records relating to permeability of bedrock ground within the study site\* boundary? Yes**

Distance (m)	Direction	Flow type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Moderate	Very Low

### 1.3.3 Faults

**Are there any records of Faults within 500m of the study site boundary? No**

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

### 1.3.4 Radon Affected Areas

**Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?**

**The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level**

### 1.3.5 Radon Protection

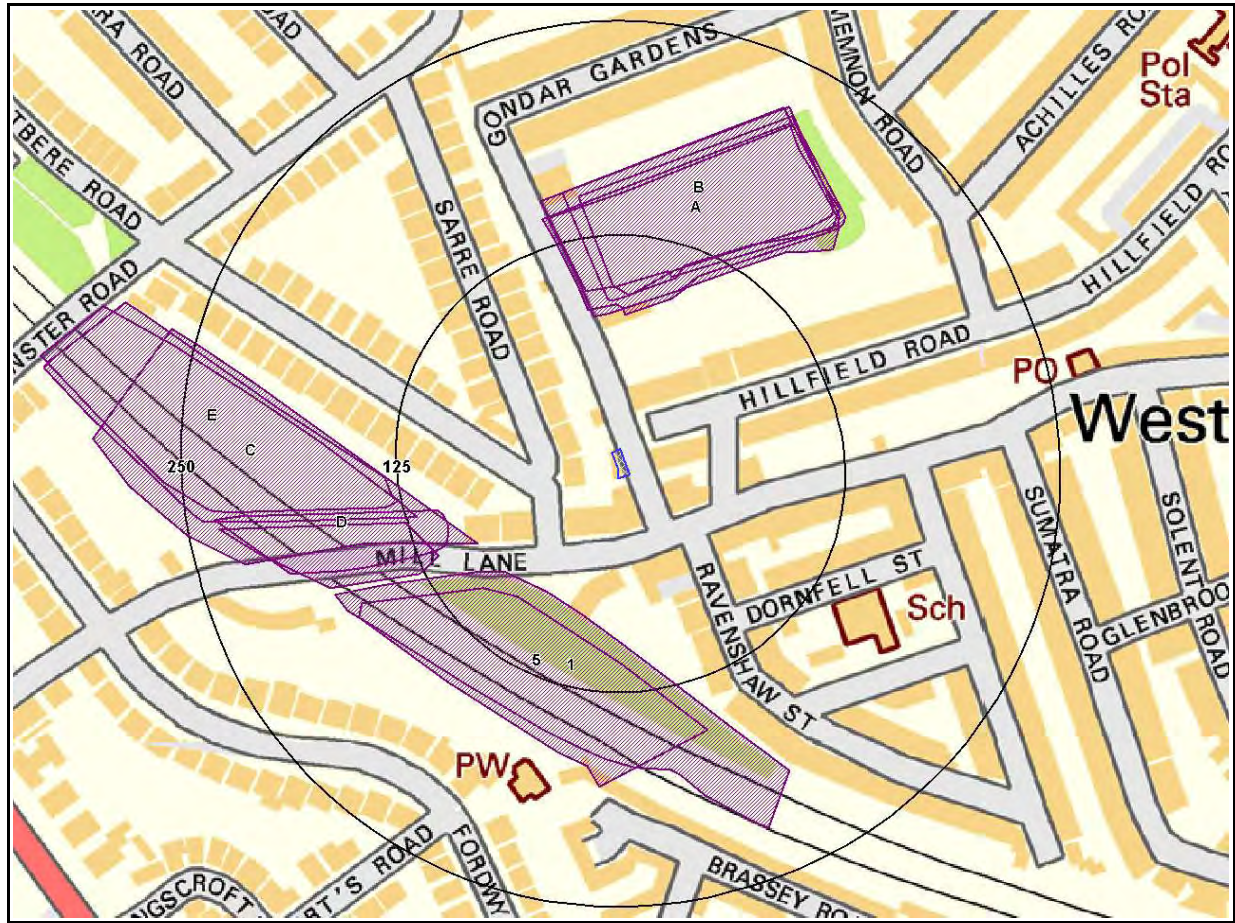
**Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?**

**No radon protective measures are necessary**

\* This includes an automatically generated 50m buffer zone around the site.







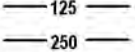
## 2. Ground Workings Map



Ground Workings Legend



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-  Site Outline
-  Historic Surface Ground Workings
-  Historic Underground Workings
-  Current Ground Workings
-  Search Buffers (m)

## 2. Ground Workings

### 2.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on GroundSure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping.

**Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes**

The following Historical Surface Ground Working Features are provided by GroundSure:

ID	Distance (m)	Direction	NGR	Use	Date
1	78.0	SW	524756,185025	Cuttings	1866
2A	79.0	N	524842,185306	Reservoir	1920
3A	79.0	N	524842,185306	Covered Reservoir	1894
4B	87.0	N	524834,185314	Reservoir	1940
5	90.0	SW	524739,185032	Cuttings	1894
6B	90.0	N	524830,185316	Reservoir	1912
7C	90.0	SW	524553,185172	Cuttings	1976
8C	90.0	SW	524553,185172	Cuttings	1966
9C	90.0	SW	524553,185172	Cuttings	1993
10 B	95.0	N	524841,185316	Covered Reservoir	1976
11 B	95.0	N	524841,185316	Covered Reservoir	1993
12 D	102.0	W	524621,185117	Cuttings	1866
13 D	114.0	SW	524620,185110	Cuttings	1894
14 E	119.0	W	524563,185192	Cuttings	1865
15 E	127.0	W	524556,185194	Cuttings	1894

### 2.2 Historical Underground Workings Features derived from Historical Mapping

This data is derived from the GroundSure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

**Are there any Historical Underground Working Features within 1000m of the study site boundary? No**

Database searched and no data found.

### 2.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

**Are there any BGS Current Ground Workings within 1000m of the study site boundary? No**

Report Reference: FIND-34880

---

Database searched and no data found.

---



### 3. Mining, Extraction & Natural Cavities Map



Mining, Extraction & Natural Cavities Legend



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## 3. Mining, Extraction & Natural Cavities

### 3.1 Historical Mining

This dataset is derived from GroundSure unique Historical Land-use Database that are indicative of mining or extraction activities.

**Are there any Historical Mining areas within 1000m of the study site boundary?** **No**

Database searched and no data found.

---

### 3.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

**Are there any Coal Mining areas within 1000m of the study site boundary?** **No**

Database searched and no data found.

---

### 3.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

**Are there any JPB Mining areas within 1000m of the study site boundary?** **No**

The following information provided by JPB is not represented on Mapping:

Database searched. No results found.

---

### 3.4 Non – Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

**Are there any Non-Coal Mining areas within 1000m of the study site boundary?** **No**

Database searched and no data found.

---

### 3.5 Non – Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

**Are there any Non-Coal Mining cavities within 1000m of the study site boundary?** **No**

Report Reference: [FIND-34880](#)

---



Database searched and no data found.

---

### 3.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

**Are there any Natural Cavities within 1000m of the study site boundary?**

**No**

Database searched and no data found.

---

### 3.7 Brine Extraction

This dataset provides information from the Brine Compensation Board which has been discontinued and is now covered by the Coal Authority.

**Are there any Brine Extraction areas within 1000m of the study site boundary?**

**No**

Database searched and no data found.

---

### 3.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

**Are there any Gypsum Extraction areas within 1000m of the study site boundary?**

**No**

Database searched and no data found.

---

### 3.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level. More detailed information on potential Tin Mining may be found in Section 3.4 – Non-Coal Mining Hazards.

**Are there any Tin Mining areas within 1000m of the study site boundary?**

**No**

Database searched and no data found.

---

### 3.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

**Are there any Clay Mining areas within 1000m of the study site boundary?**

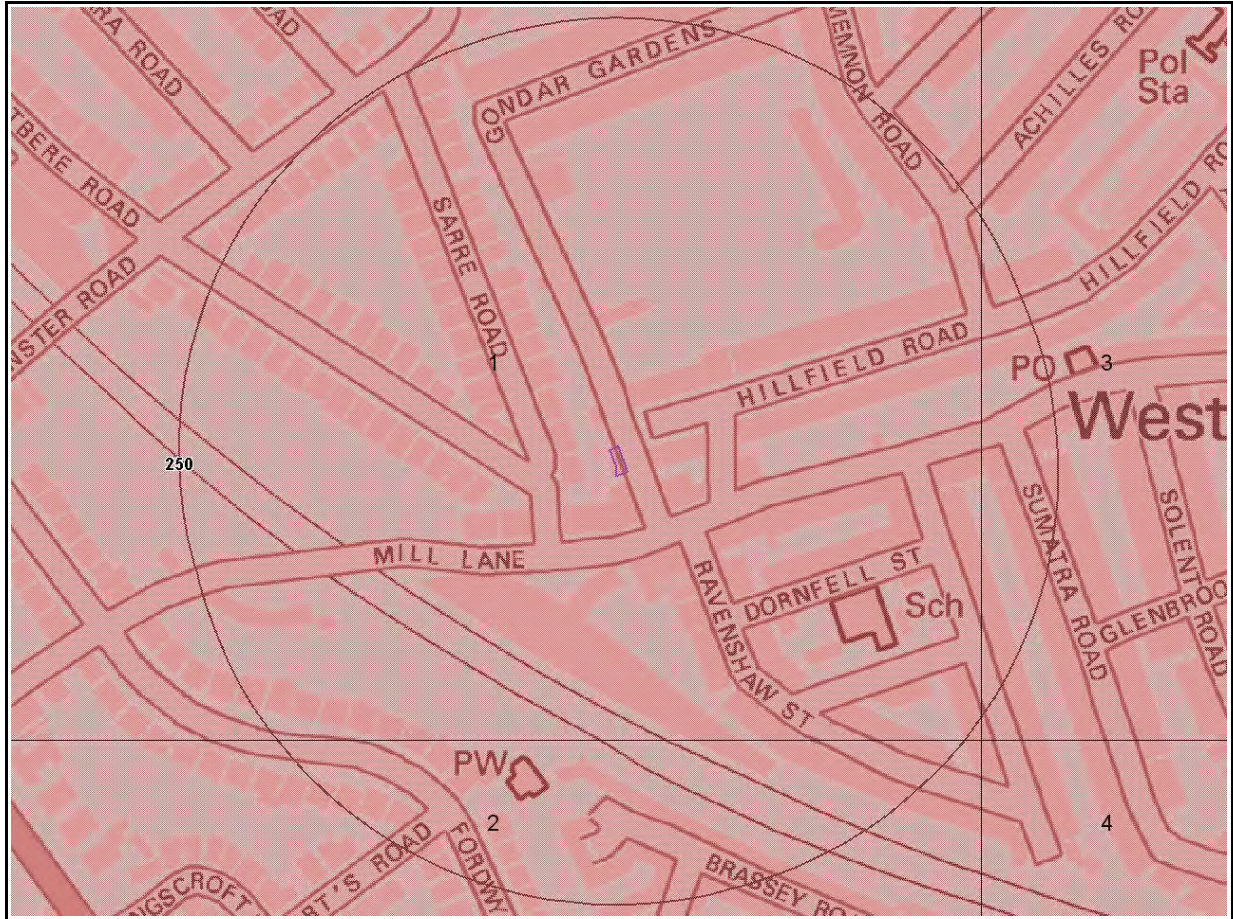
**No**

Database searched and no data found.

---

# 4. Natural Ground Subsidence

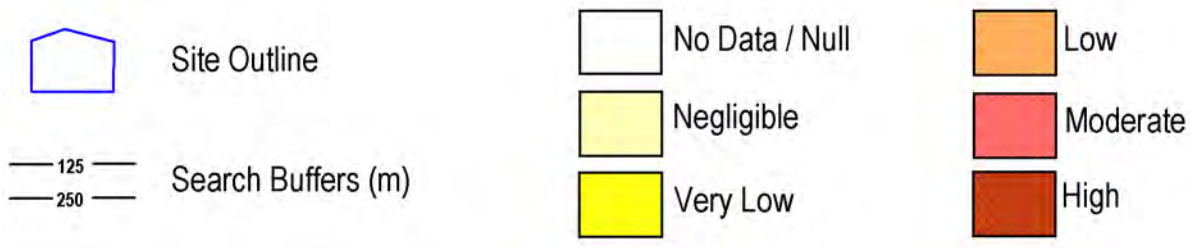
## 4.1 Shrink-Swell Clay Map



Shrink-Swell Clay Legend

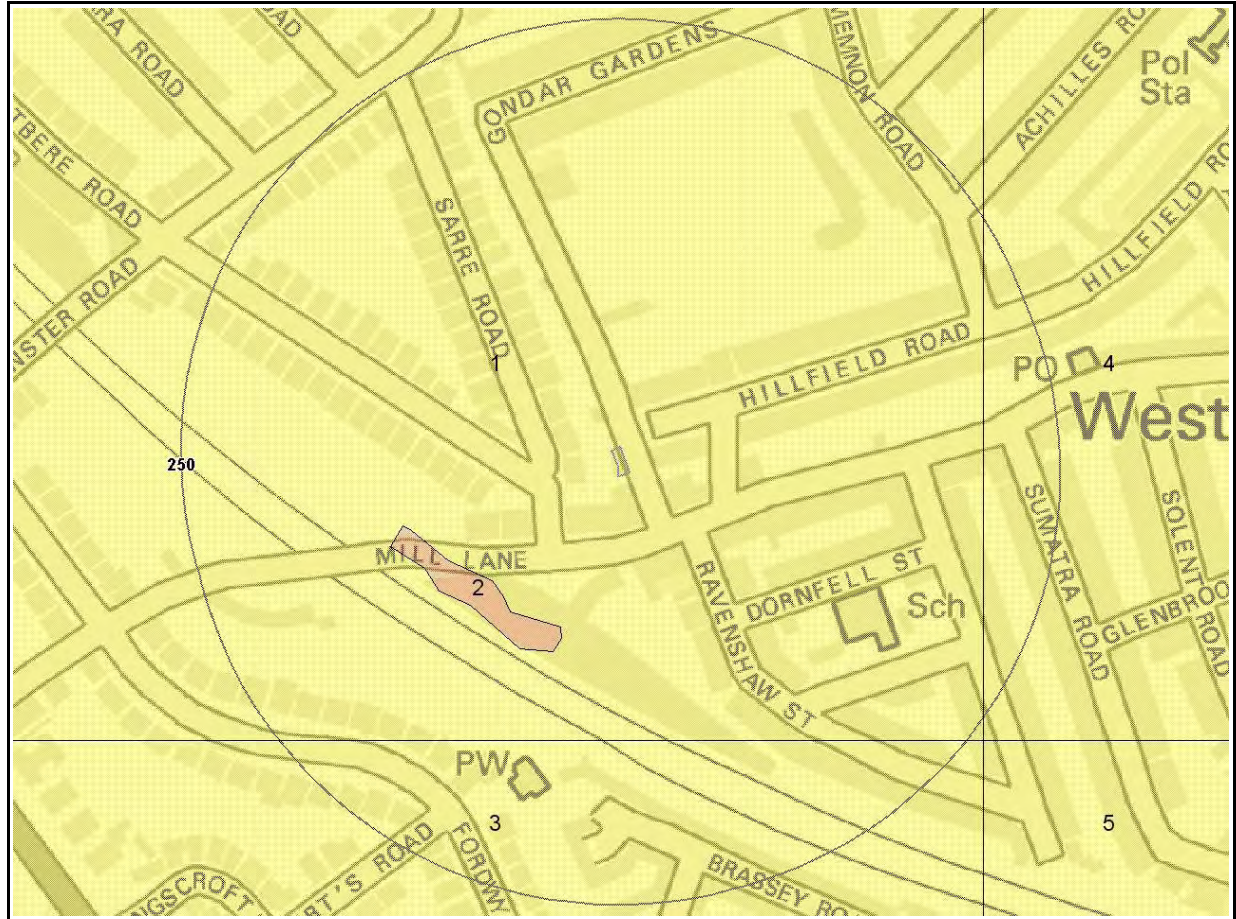


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## 4.2 Landslides Map



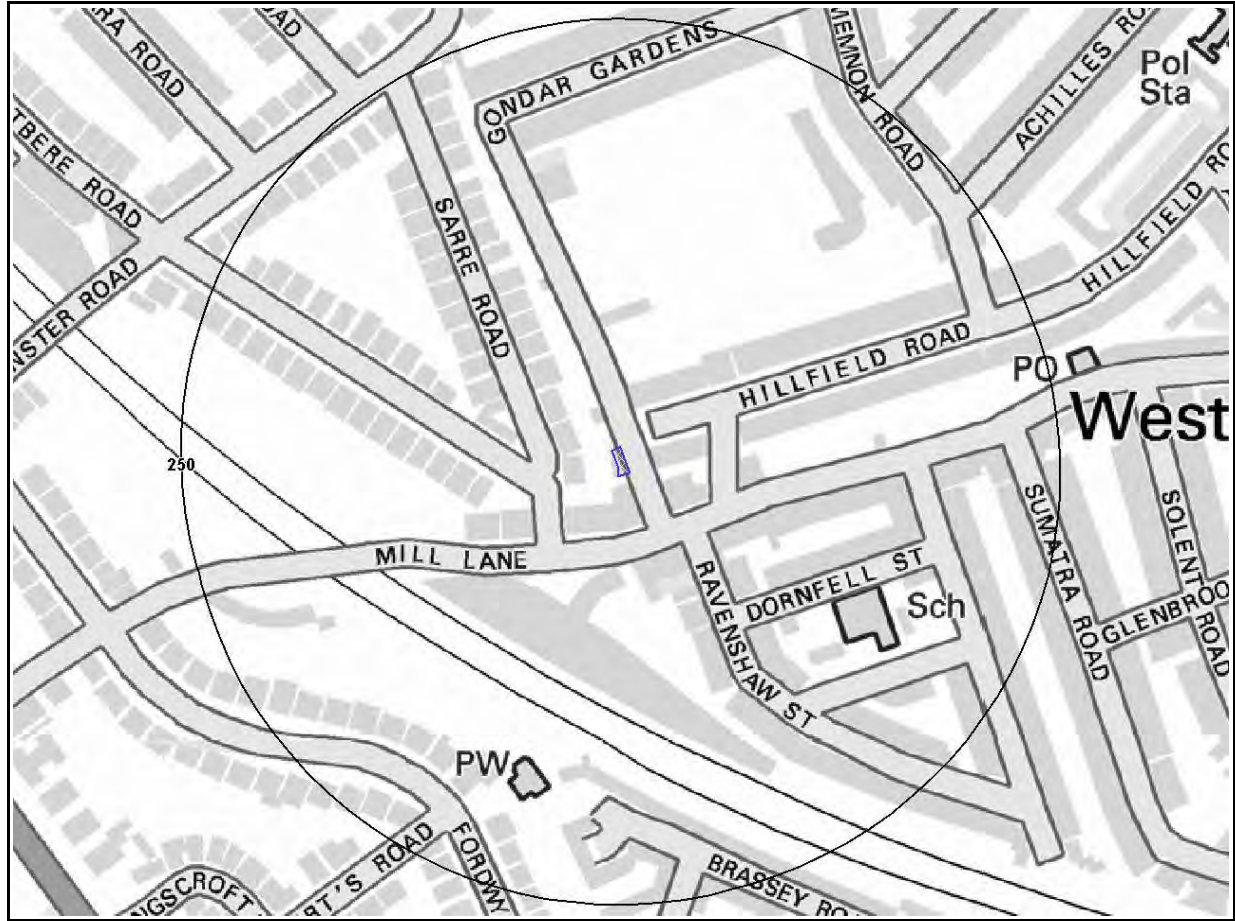
Landslides Legend



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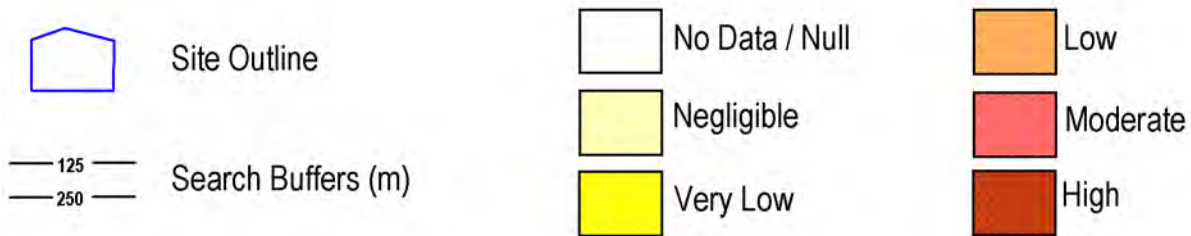
## 4.3 Ground Dissolution Soluble Rocks Map



Ground Dissolution Soluble Rocks Legend

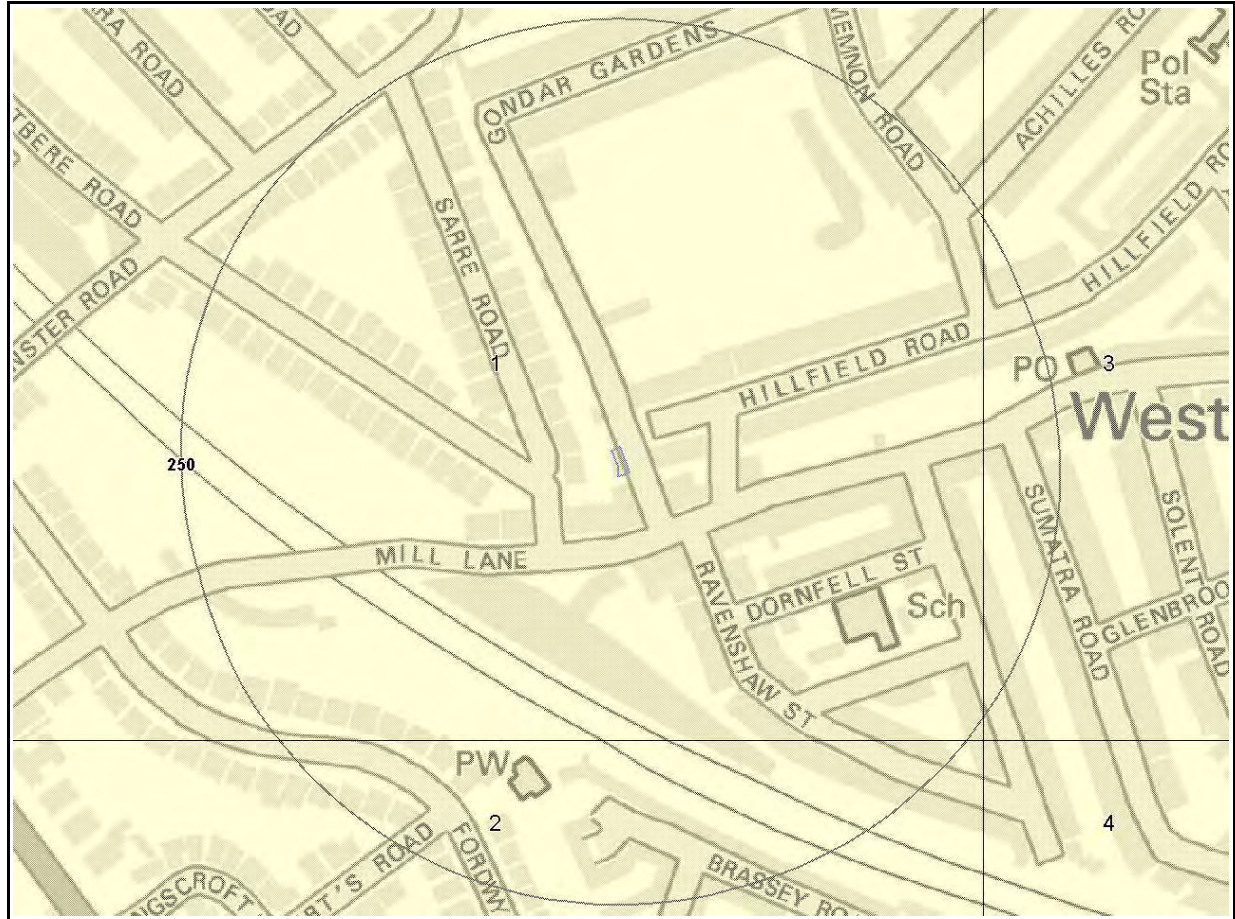


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## 4.4 Compressible Deposits Map



Compressible Deposits Legend

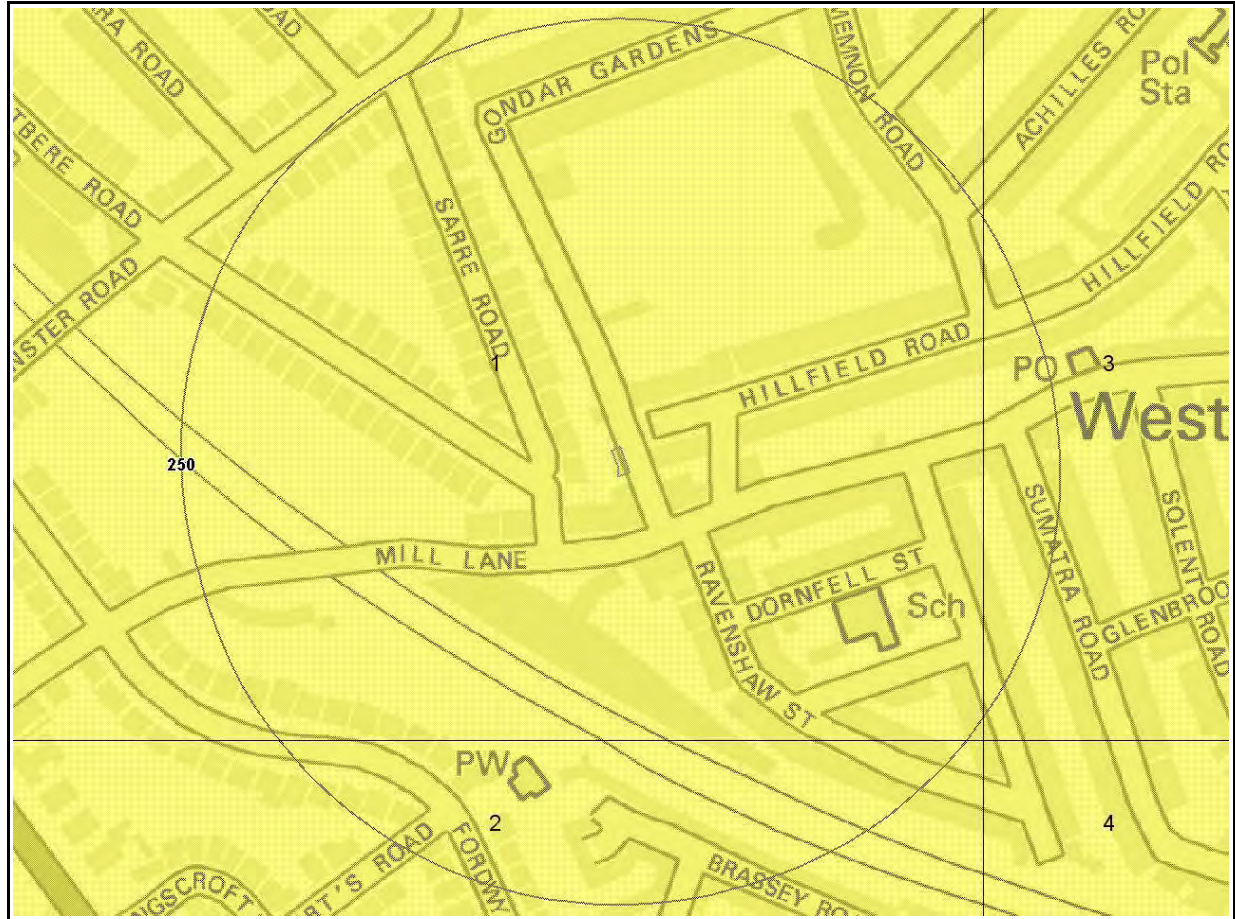


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# 4.5 Collapsible Deposits Map



Collapsible Deposits Legend

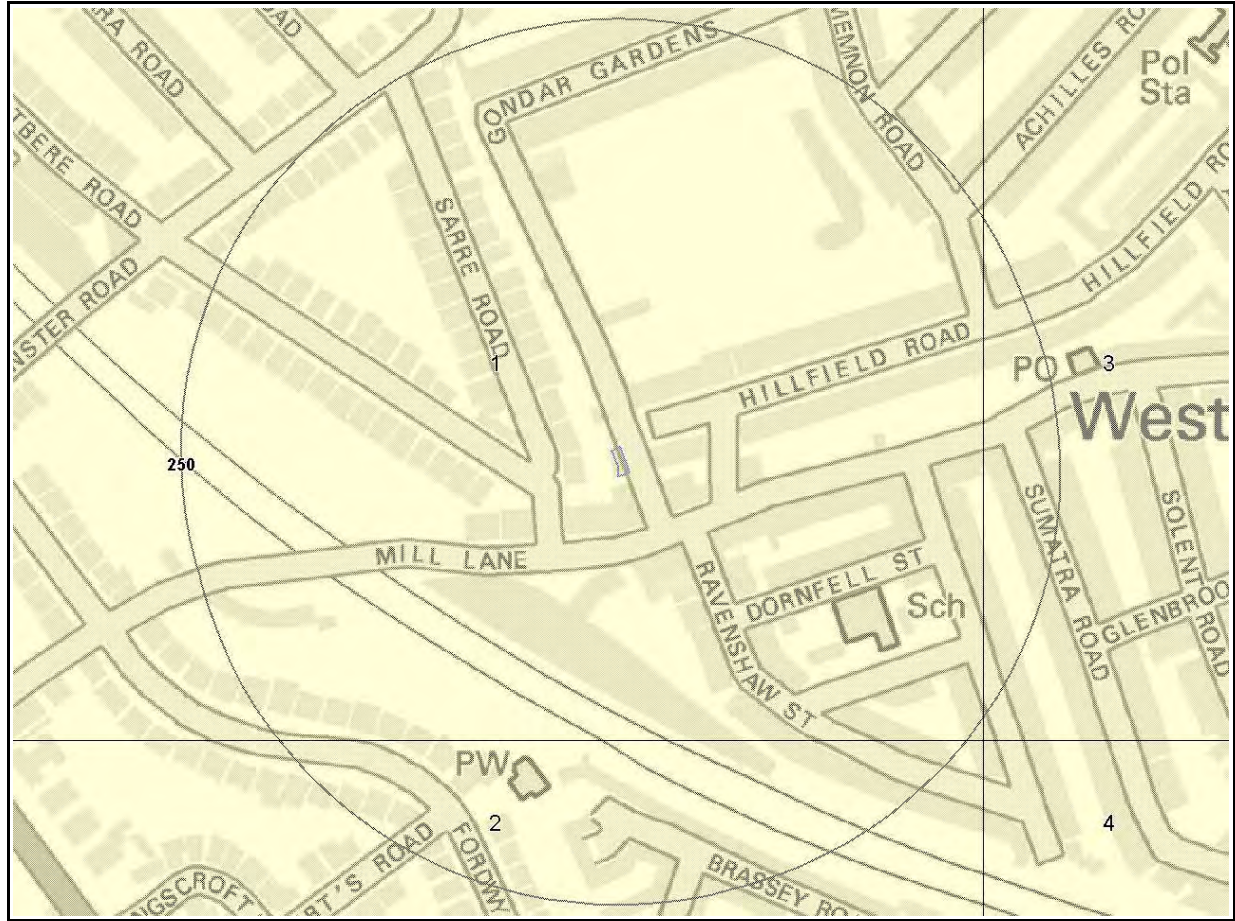


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# 4.6 Running Sand Map



Running Sand Legend



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- - 
  -
- Site Outline
- Search Buffers (m)
- - 
  - 
  - 
  - 
  -
- No Data / Null
- Negligible
- Very Low
- Low
- Moderate
- High

## 4. Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

**What is the maximum hazard rating of natural subsidence within the study site\* boundary?      Moderate**

### 4.1 Shrink – Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m) *	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

### 4.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)*	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

### 4.3 Ground Dissolution of Soluble Rocks

The following Soluble Rocks information provided by the British Geological Survey:

Distance (m)*	Direction	Hazard Rating	Details
0.0	On site	Null-Negligible	Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

### 4.4 Compressible Deposits

The following Compressible Ground information provided by the British Geological Survey:

\*This includes an automatically generated 50m buffer zone around the study site boundary.



ID	Distance (m)*	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

## 4.5 Collapsible Deposits

The following Collapsible Rocks information is provided by the British Geological Survey:

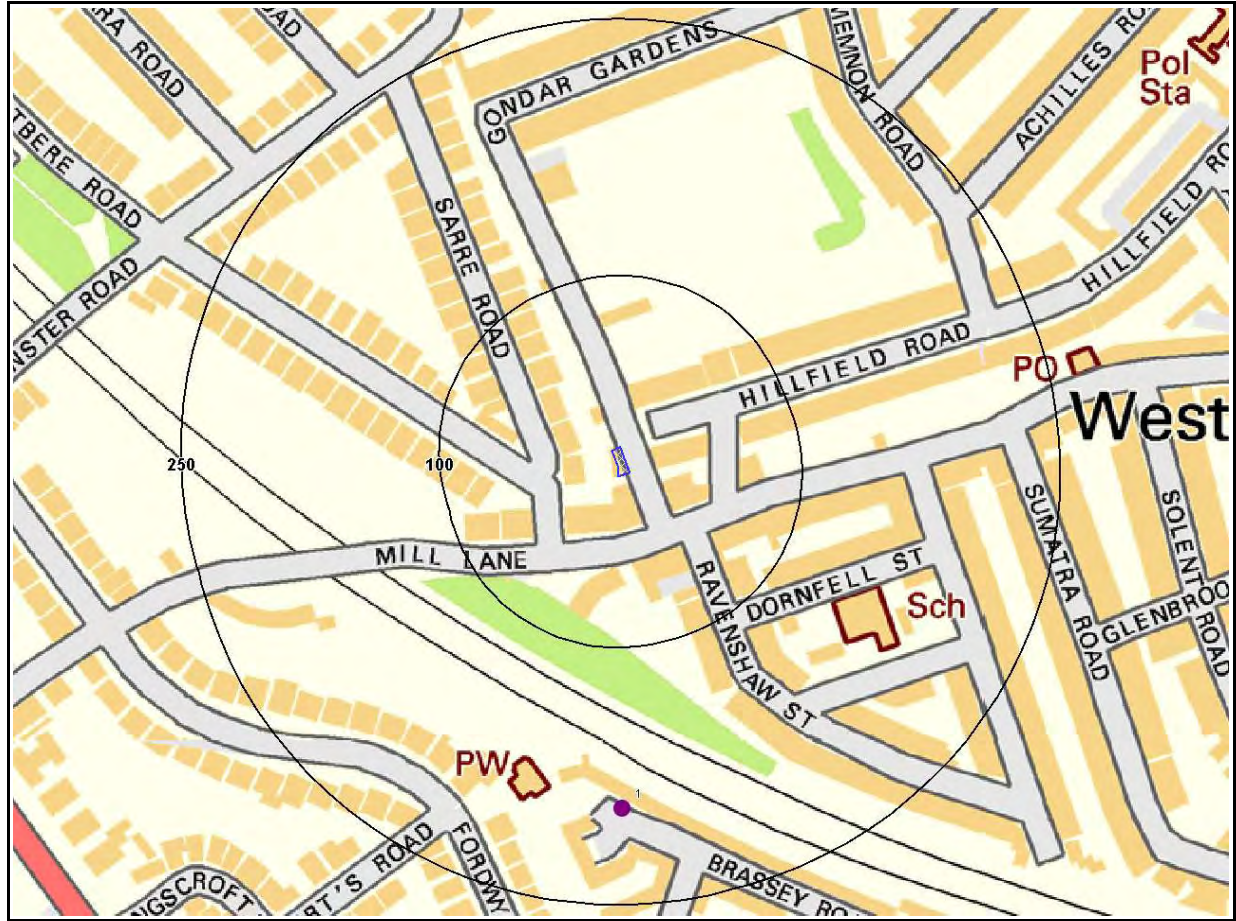
ID	Distance (m)*	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

## 4.6 Running Sands

The following Running Sands information is provided by the British Geological Survey:

ID	Distance (m)*	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

# 5. Borehole Records Map



Borehole Records Legend



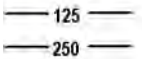
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Site Outline



Borehole Locations



Search Buffers (m)

## 5. Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

**Records of boreholes within 250m of the study site boundary: 1**

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length (m)	Borehole Name
1	194.0	S	524790,18 4960	TQ28SW85	15.24	MAPESBURY RD WILLESDEN

Additional online information is available for the following boreholes listed above:

#1: [http://scans.bgs.ac.uk/sobi\\_scans/boreholes/590993](http://scans.bgs.ac.uk/sobi_scans/boreholes/590993)

## 6. Estimated Background Soil Chemistry

**Records of background estimated soil chemistry within 250m of the study site boundary: 1**

For further information on how this data is calculated and limitations upon its use, please see the GroundSure GeoInsight User Guide, available on request.

Distance (m)*	Direction	Sample Type	Estimated Geometric Mean Soil Concentrations (mg/kg)				
			Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	London	No data	No data	No data	No data	No data

\*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

## 7. Contacts

### FIND

Telephone: 0845 521 1410  
support@findmaps.co.uk  
The Top Floor, 222 Borough High Street  
London, SE1 1JX



### British Geological Survey Enquiries

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143. Fax: 0115 936 3276.  
Email: enquiries@bgs.ac.uk  
Web: www.bgs.ac.uk  
BGS Geological Hazards Reports and general geological enquiries



### British Gypsum

British Gypsum Ltd, East Leake, Loughborough, Leicestershire,  
LE12 6HX  
Tel: www.british-gypsum.com



### The Coal Authority

200 Lichfield Lane, Mansfield, Notts NG18 4RG  
Tel: 0845 762 6848  
DX 716176 Mansfield 5 www.coal.gov.uk



### Johnson Poole & Bloomer Limited

Harris and Pearson Building, Brettel Lane, Brierley Hill, West  
Midlands DY5 3LH  
Tel: +44 (0) 1384 262 000  
Email: enquiries.gs@jpb.co.uk  
Website: www.jpb.co.uk



### Ordnance Survey

Romsey Road, Southampton SO16 4GU  
Tel: 08456 050505



### Getmapping PLC

Virginia Villas, High Street, Hartley Witney,  
Hampshire RG27 8NW  
Tel: 01252 845444



### Peter Brett Associates

Caversham Bridge House, Waterman Place, Reading  
Berkshire RG1 8DN  
Tel: +44 (0)118 950 0761 E-mail: reading@pba.co.uk



### Acknowledgements

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This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.



## Standard Terms and Conditions

### 1 Definitions

In these conditions unless the context otherwise requires:

"**Beneficiary**" means the Client or the customer of the Client for whom the Client has procured the Services.

"**Commercial**" means any building which is not Residential.

"**Commission**" means an order for Consultancy Services submitted by a Client.

"**Consultancy Services**" mean consultancy services provided by GroundSure including, without limitation, carrying out interpretation of third party and in-house environmental data, provision of environmental consultancy advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"**Contract**" means the contract between GroundSure and the Client for the performance of the Services which arises upon GroundSure's acceptance of an Order or Commission and which shall incorporate these conditions, the relevant GroundSure User Guide, proposal by GroundSure and the content of any subsequent report, and any agreed amendments in accordance with clause 11.

"**Client**" means the party that submits an Order or Commission.

"**Data Provider**" means any third party providing Third Party Content to GroundSure.

"**Data Report**" means reports comprising factual data with no professional interpretation in respect of the level of likely risk and/or liability available from GroundSure.

"**GroundSure**" means GroundSure Limited, a company registered in England and Wales under number 03421028 and whose registered office is at GroundSure Ltd, c/o Top Right Group Limited, The Prow, 1 Wilder Walk, London W1B 5AP, United Kingdom.

"**GroundSure Materials**" means all materials prepared by GroundSure as a result of the provision of the Services, including but not limited to Data Reports, Mapping and Risk Screening Reports.

"**Intellectual Property**" means any patent, copyright, design rights, service marks, moral rights, data protection rights, know-how, trade mark or any other intellectual property rights.

"**Mapping**" an historical map or a combination of historical maps of various ages, time periods and scales available from GroundSure.

"**Order**" means an order form submitted by the Client requiring Services from GroundSure in respect of a specified Site.

"**Order Website**" means online platform via which Orders may be placed.

"**Report**" means a Risk Screening Report or Data Report for commercial or residential property available from GroundSure relating to the Site prepared in accordance with the specifications set out in the relevant User Guide.

"**Residential**" means any building used as or suitable for use as an individual dwelling.

"**Risk Screening Report**" means one of GroundSure's risk screening reports, comprising factual data with interpretation in respect of the level of likely risk and/or liability, excluding "**Consultancy Services**".

"**Services**" means the provision of any Report, Mapping or Consultancy Services which GroundSure has agreed to carry out for the Client/Beneficiary on these terms and conditions in respect of the Site.

"**Site**" means the landsite in respect of which GroundSure provides the Services.

"**Third Party Content**" means any data, database or other information contained in a Report or Mapping which is provided to GroundSure by a Data Provider.

"**User Guide**" means the relevant current version of the user guide, available upon request from GroundSure.

### 2 Scope of Services

2.1 GroundSure agrees to carry out the Services in accordance with the Contract and to the extent set out therein.

2.2 GroundSure shall exercise all the reasonable skill, care and diligence to be expected of experienced environmental consultants in the performance of the Services.

2.3 The Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in the Contract.

2.4 Terms and conditions appearing on a Client's order form, printed stationery or other communication, including invoices, to GroundSure, its employees, servants, agents or other representatives or any terms implied by custom, practice or course of dealing shall be of no effect and these terms and conditions shall prevail over all others.

2.5 If a Client/Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to procure such insurance, but makes no warranty that such insurance shall be available from insurers or offered on reasonable terms. GroundSure does not endorse or recommend any particular insurance product, policy or insurer. Any insurance purchased shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. The Client/Beneficiary should take independent advice to ensure that the insurance policy requested and/or offered is suitable for its requirements.

2.6 GroundSure's quotations/proposals are valid for a period of 30 days only. GroundSure reserves the right to withdraw any quotation at any time before GroundSure accepts an Order or Commission. GroundSure's acceptance of an Order or Commission shall be effective only where such acceptance is in writing and signed by GroundSure's authorised representative or where accepted via GroundSure's Order Website.

### 3 The Client's obligations

3.1 The Client shall ensure the Beneficiary complies with and is bound by the terms and conditions set out in the Contract and shall provide that Groundsure may in its own right enforce such terms and conditions against the Beneficiary pursuant to the Contracts (Rights of Third parties) Act 1999. The Client shall be liable for all breaches of the Contract by the Beneficiary as if they were breaches by the Client. The Client shall be solely responsible for ensuring that the Report/Mapping ordered is appropriate and suitable for the Beneficiary's needs.

3.2 The Client shall (or shall procure that the Beneficiary shall) supply to GroundSure as soon as practicable and without charge all information necessary and accurate relevant data including any specific and/or unusual environmental information relating to the Site known to the Client/Beneficiary which may pertain to the Services and shall give such assistance as GroundSure shall reasonably require in the performance of the Services (including, without limitation, access to a Site, facilities and equipment as agreed in the Contract).

3.3 Where Client/Beneficiary approval or decision is required, such approval or decision shall be given or procured in reasonable time as not to delay or disrupt the performance of any other part of the Services.

3.4 The Client shall not and shall not knowingly permit the Beneficiary to, save as expressly permitted by these terms and conditions, re-sell, alter, add to, amend or use out of context the content of any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the Site, or providing funding in relation to the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.5 The Client is responsible for maintaining the confidentiality of its user name and password if using GroundSure's internet ordering service and accepts responsibility for all activity that occurs under such account and password.

### 4 Reliance

4.1 Upon full payment of all relevant fees and subject to the provisions of these terms and conditions, the Client and Beneficiary are granted an irrevocable royalty-free licence to access the information contained in a Report, Mapping or in a report prepared by GroundSure in respect of or arising out of Consultancy Services. The Services may only be used for the benefit of the Client and those persons listed in clauses 4.2 and 4.3.

4.2 In relation to Data Reports, Mapping and Risk Screening Reports, the Client shall be entitled to make Reports available to (i) the Beneficiary, (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate), (iv) the first purchaser or first tenant of the Site (v) the professional advisers and lenders of the first purchaser or tenant of the Site. Accordingly GroundSure shall have the same duties and obligations to those persons in respect of the Services as it has to the Client and those persons shall have the benefit of any of the Client's rights under the Contract as if those persons were parties to the Contract. For the avoidance of doubt, the limitations of GroundSure's liability as set out in clauses 7 and 11.6 shall apply.

4.3 In relation to Consultancy Services, reliance shall be limited to the Client, Beneficiary and named parties on the Report.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise agreed in writing with GroundSure, any other party considering the information supplied by GroundSure as part of the Services, including (but not limited to) insurance underwriters, does so at their own risk and GroundSure has no legal obligations to such party unless otherwise agreed in writing.

4.5 The Client shall not and shall not knowingly permit any person (including the Beneficiary) who is provided with a copy of any Report, (except as permitted herein or by separate agreement with GroundSure) to: (a) remove, suppress or modify any trade mark, copyright or other proprietary marking from the Report or Mapping; (b) create any product which is derived directly or indirectly from the data contained in the Report or Mapping; (c) combine the Report or Mapping with, or incorporate the Report or Mapping into any other information data or service; or (d) re-format or otherwise change (whether by modification, addition or enhancement) data or images contained in the Report or Mapping.

4.6 Notwithstanding clause 4.5, if the Client acts in a professional capacity, it may make reasonable use of a Report and/or findings made as a result of Consultancy Services to advise Beneficiaries. However, GroundSure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or a third party.

### 5 Fees and Disbursements

5.1 GroundSure shall charge the Client fees at the rate and frequency specified in the Contract together, in the case of Consultancy Services, with all proper disbursements incurred by GroundSure in performing the Services. For the avoidance of doubt, the fees payable for the Services are as set out in GroundSure's written proposal, Order Website or Order acknowledgement form. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services.

5.2 Unless GroundSure requires prepayment, the Client shall promptly pay all fees disbursements and other monies due to GroundSure in full without deduction, counterclaim or set off together with such value added tax or other tax as may be required within 30 days from the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("**Payment Date**"). GroundSure reserves the right to charge interest which shall accrue on a daily basis from 30 days after the date of Payment Date until the date of payment (whether before or after judgment) at the rate of five per cent per annum above the Bank of England base rate from time to time.

5.3 In the event that the Client disputes the amount payable in respect of GroundSure's invoice it shall notify GroundSure no later than 28 days after the date thereof that it is in dispute. In default of such notification the Client shall be deemed to have agreed the amount thereof. As soon as reasonably practicable following receipt of a notification in respect of any disputed invoice, a member of the management team at GroundSure shall contact the Client and the parties shall use all reasonable endeavours to resolve the dispute.

### 6 Intellectual Property and Confidentiality

6.1 Subject to the provisions of clause 4.1, the Client and the Beneficiary hereby acknowledge that all Intellectual Property in the Services and Content are and shall remain owned by either GroundSure or the Data Providers and nothing in these terms purports to transfer or assign any rights to the Client or the Beneficiary in respect of the Intellectual Property.

6.2 The Client shall acknowledge the ownership of the **Third Party Content** where such **Third Party Content** is incorporated or used in the Client's own documents, reports, systems or services whether or not these are supplied to a third party.

6.3 Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client acknowledges that the proprietary rights subsisting in copyright, database rights and any other intellectual property rights in respect of any data and information contained in any Report are and shall remain (subject to clause 11.1) the property of GroundSure and/or any third party that has supplied data or information used to create a Report, and that these conditions do not purport to grant, assign or transfer any such rights in respect thereof to a Client and/or a Beneficiary.

6.5 The Client shall (and shall procure that any recipients of the Report as permitted under clause 4.2 shall):

- (i) not remove, suppress or modify any trademark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

- (ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;
  - (iii) not create any product or report which is derived directly or indirectly from the data contained in the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);
  - (iv) not combine the Services with or incorporate such Services into any other information data or service; and
  - (v) not reformat or otherwise change (whether by modification, addition or enhancement), data contained in the Services (save that those acting in a professional capacity to the Beneficiary shall not be in breach of this clause 6.5(v) where such reformatting is in the normal course of providing advice based upon the Services), in each case of parts (iii) to (v) inclusive, whether or not such product or report is produced for commercial profit or not.
- 6.6 The Client and/or Beneficiary shall and shall procure that any party to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.
- 6.8 Save as otherwise set out in these terms and conditions, any information provided by one party ("**Disclosing Party**") to the other party ("**Receiving Party**") shall be treated as confidential and only used for the purposes of these terms and conditions, except in so far as the Receiving Party is authorised by the Disclosing Party to provide such information in whole or in part to a third party.

## 7 Liability

### THE CLIENT'S ATTENTION IS DRAWN TO THIS PROVISION

- 7.1 Subject to the provisions of this clause 7, GroundSure shall be liable to the Beneficiary only in relation to any direct losses or damages caused by any negligent act or omission of GroundSure in preparing the GroundSure Materials and provided that the Beneficiary has used all reasonable endeavours to mitigate any such losses.
- 7.2 GroundSure shall not be liable for any other losses or damages incurred by the Beneficiary, including but not limited to:
- (i) loss of profit, revenue, business or goodwill, losses relating to business interruption, loss of anticipated savings, loss of or corruption to data or for any special, indirect or consequential loss or damage which arise out of or in connection with the GroundSure Materials or otherwise in relation to a Contract;
  - (ii) any losses or damages that arise as a result of the use of all or part of the GroundSure Materials in breach of these terms and conditions or contrary to the terms of the relevant User Guide;
  - (iii) any losses or damages that arise as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such part is based on any Third Party Content or any reasonable interpretation of Third Party Content. The Client accepts, and shall procure that any other Beneficiary shall accept, that it has no claim or recourse to any Data Provider in relation to Third Party Content; and/or
  - (iv) any loss or damage to a Client's computer, software, modem, telephone or other property caused by a delay or loss of use of GroundSure's internet ordering service.
- 7.3 GroundSure's total liability in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with the GroundSure Materials or otherwise in relation to the Contract shall be limited to £10 million in total (i) for any one claim or (ii) for a series of connected claims brought by one or more parties.
- 7.4 For the duration of the liability periods set out in clauses 7.5 and 7.6 below, GroundSure shall maintain professional indemnity insurance in respect of its liability under these terms and conditions provided such insurance is readily available at commercially viable rates. GroundSure shall produce evidence of such insurance if reasonably requested by the Client. A level of cover greater than GroundSure's current level of cover may be available upon request and agreement with the Client.
- 7.5 Any claim under the Contract in relation to Data Reports, Mapping and Risk Screening Reports, must be brought within six years from the date when the Beneficiary became aware that it may have a claim and in no event may a claim be brought twelve years or more after completion of such a Contract. For the avoidance of doubt, any claim in respect of which proceedings are notified to GroundSure in writing prior to the expiry of the time periods referred to in this clause 7.5 shall survive the expiry of those time periods provided the claim is actually commenced within six months of notification.
- 7.6 Any claim under the Contract in relation to Consultancy Services, must be brought within six years from the date the Consultancy Services were completed.
- 7.7 he Client accepts and shall procure that any other Beneficiary shall accept that it has no claim or recourse to any Data Provider or to GroundSure in respect of the acts or omissions of any Data Provider and/or any Third Party Content provided by a Data Provider.
- 7.8 Nothing in these terms and conditions:
- (i) excludes or limits the liability of GroundSure for death or personal injury caused by GroundSure's negligence, or for fraudulent misrepresentation; or
  - (ii) shall affect the statutory rights of a consumer under the applicable legislation.

## 8 GroundSure right to suspend or terminate

- 8.1 In the event that GroundSure reasonably believes that the Client or Beneficiary as applicable has not provided the information or assistance required to enable the proper performance of the Services, GroundSure shall be entitled on fourteen days written notice to suspend all further performance of the Services until such time as any such deficiency has been made good.
- 8.2 GroundSure may additionally terminate the Contract immediately on written notice in the event that:
- (i) the Client shall fail to pay any sum due to GroundSure within 28 days of the Payment Date; or
  - (ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an Administration Order made against it or if a Receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or
  - (iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or
  - (iv) the Client or the Beneficiary breaches any material term of the Contract (including, but not limited to, the obligations in clause 4) incapable of remedy or if remediable, is not remedied within 14 days of notice of the breach.

## 9 Client's Right to Terminate and Suspend

- 9.1 Subject to clause 10.2, the Client may at any time after commencement of the Services by notice in writing to GroundSure require GroundSure to terminate or suspend immediately performance of all or any of the Services.
- 9.2 The Client waives all and any right of cancellation it may have under the Consumer Protection (Distance Selling) Regulations 2000 (as amended) in respect of the Order of a Report/Mapping. This does not affect the Beneficiary's statutory rights.

## 10 Consequences of Withdrawal, Termination or Suspension

- 10.1 Upon termination or any suspension of the Services, GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client/Beneficiary any property of the Client/ Beneficiary in GroundSure's possession or control.
- 10.2 In the event of termination/suspension of the Contract under clauses 8 or 9, the Client shall pay to GroundSure all and any fees payable in respect of the performance of the Services up to the date of termination/suspension. In respect of any Consultancy Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination/suspension of the Contract.

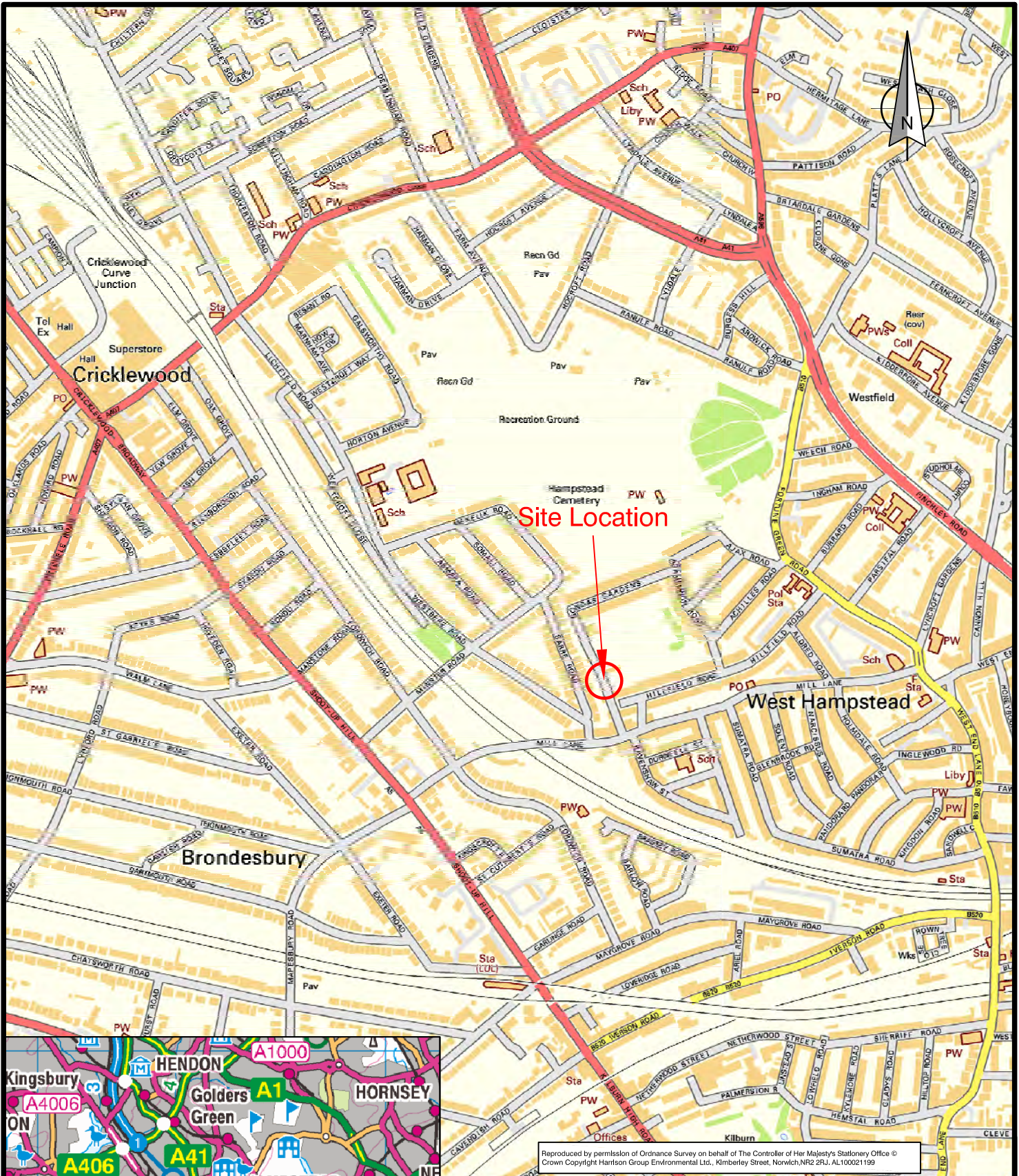
## 11 General

- 11.1 The mapping contained in the Services is protected by Crown copyright and must not be used for any purpose outside the context of the Services or as specifically provided in these terms.
- 11.2 GroundSure reserves the right to amend these terms and conditions. No variation to these terms shall be valid unless signed by an authorised representative of GroundSure.
- 11.3 No failure on the part of GroundSure to exercise and no delay in exercising, any right, power or provision under these terms and conditions shall operate as a waiver thereof.
- 11.4 Save as expressly provided in clauses 4.2, 4.3, 6.3 and 11.5, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.
- 11.5 The Secretary of State for Communities and Local Government acting through Ordnance Survey may enforce breach of clause 6.1 of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.
- 11.6 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:
- (i) the Client or Beneficiary's failure to provide facilities, access or information;
  - (ii) fire, storm, flood, tempest or epidemic;
  - (iii) Acts of God or the public enemy;
  - (iv) riot, civil commotion or war;
  - (v) strikes, labour disputes or industrial action;
  - (vi) acts or regulations of any governmental or other agency;
  - (vii) suspension or delay of services at public registries by Data Providers; or
  - (viii) changes in law.
- 11.7 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.
- 11.8 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email and on the second working day after the day of posting if sent by first class post.
- 11.9 The Contract constitutes the entire contract between the parties and shall supersede all previous arrangements between the parties.
- 11.10 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.
- 11.11 These terms and conditions shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with these terms and conditions shall be subject to the exclusive jurisdiction of the English courts.
- 11.12 If the Client or Beneficiary has a complaint about the Services, notice can be given in any format eg writing, phone, email to the Compliance Officer at GroundSure who will respond in a timely manner.

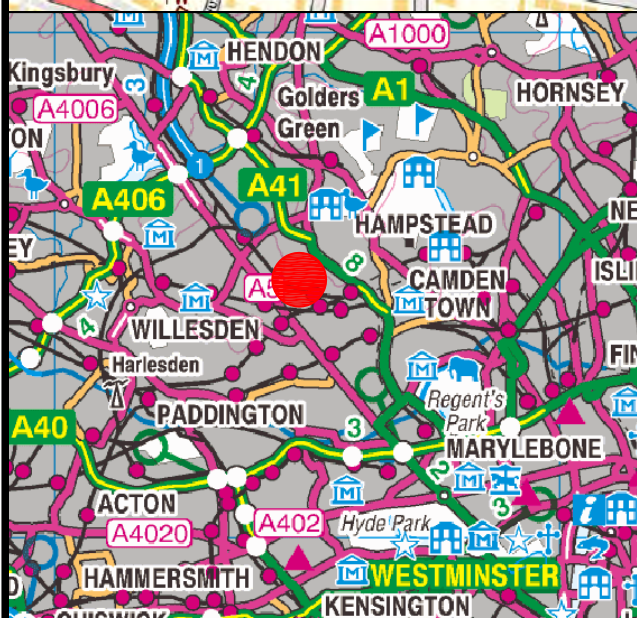
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# PLANS





Site Location



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Client :	
Project : Gondar Gardens	
Job No : GL17300	Date : April 2013
Drawing Title : Site Location Plan	
Drawing No : GL17300 - DR001	
Scale : 1 : 10000 @ A4	
Drawn by : YN	Checked by : JK
Eastings :	Northings :

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