1 Geology

1.1 Artificial Ground Map

NW N NE

W E

SW S SE

Artificial Ground Legend

Mapping sourced from Ordnance Survey®

Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

1 Geology

1.1 Artificial Ground

1.1.1Artificial/ Made Ground

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

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

Database searched and no data found.

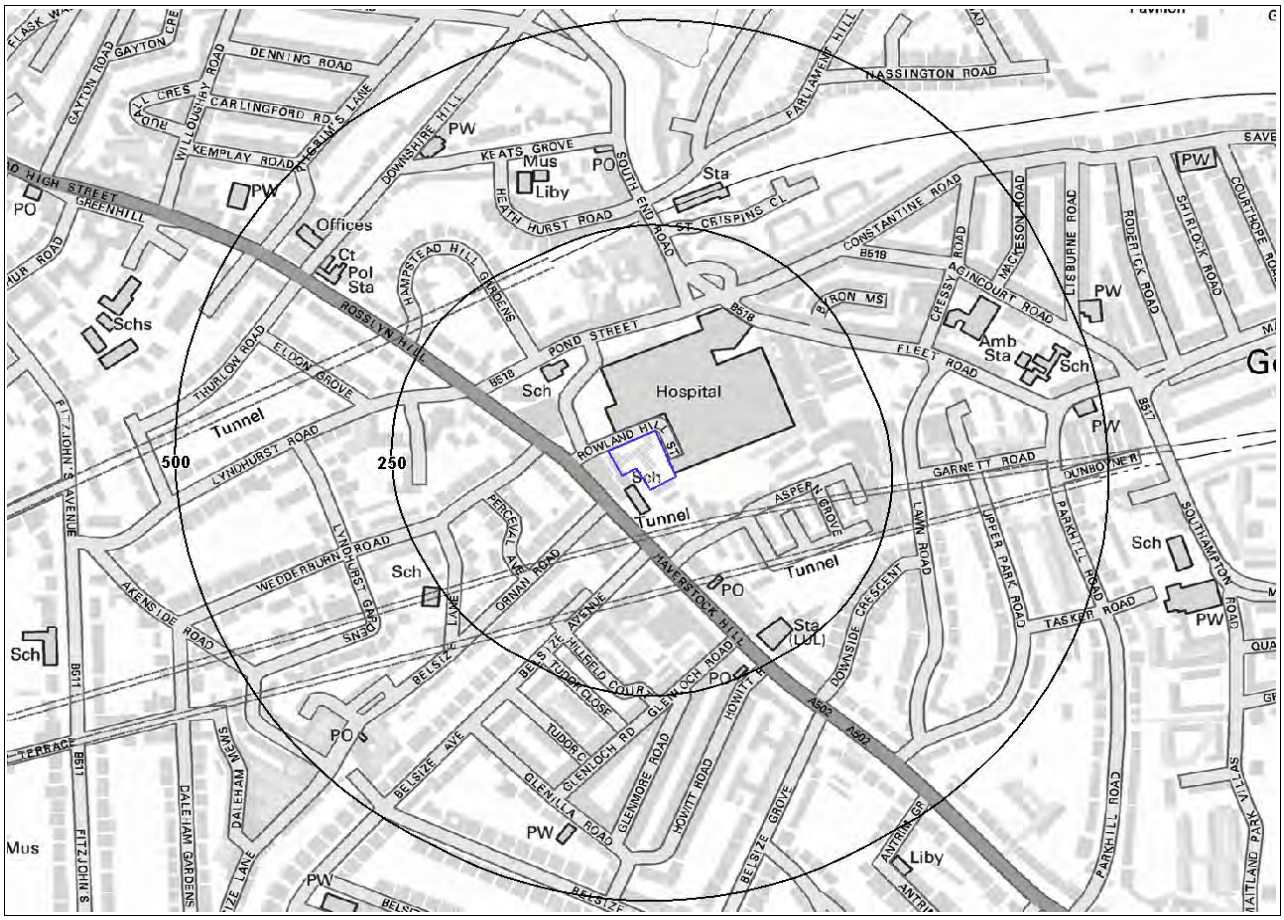
1.1.2 Permeability of Artificial Ground

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

Database searched and no data found.

1.2 Superficial Deposits and Landslips Map

NW N NE



W E

SW S SE

Superficial Deposits and Landslips Legend

Mapping sourced from Ordnance Survey

Site Outline

500
1000
Search Buffers (m)

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.

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.

1.2.4 Landslip Permeability

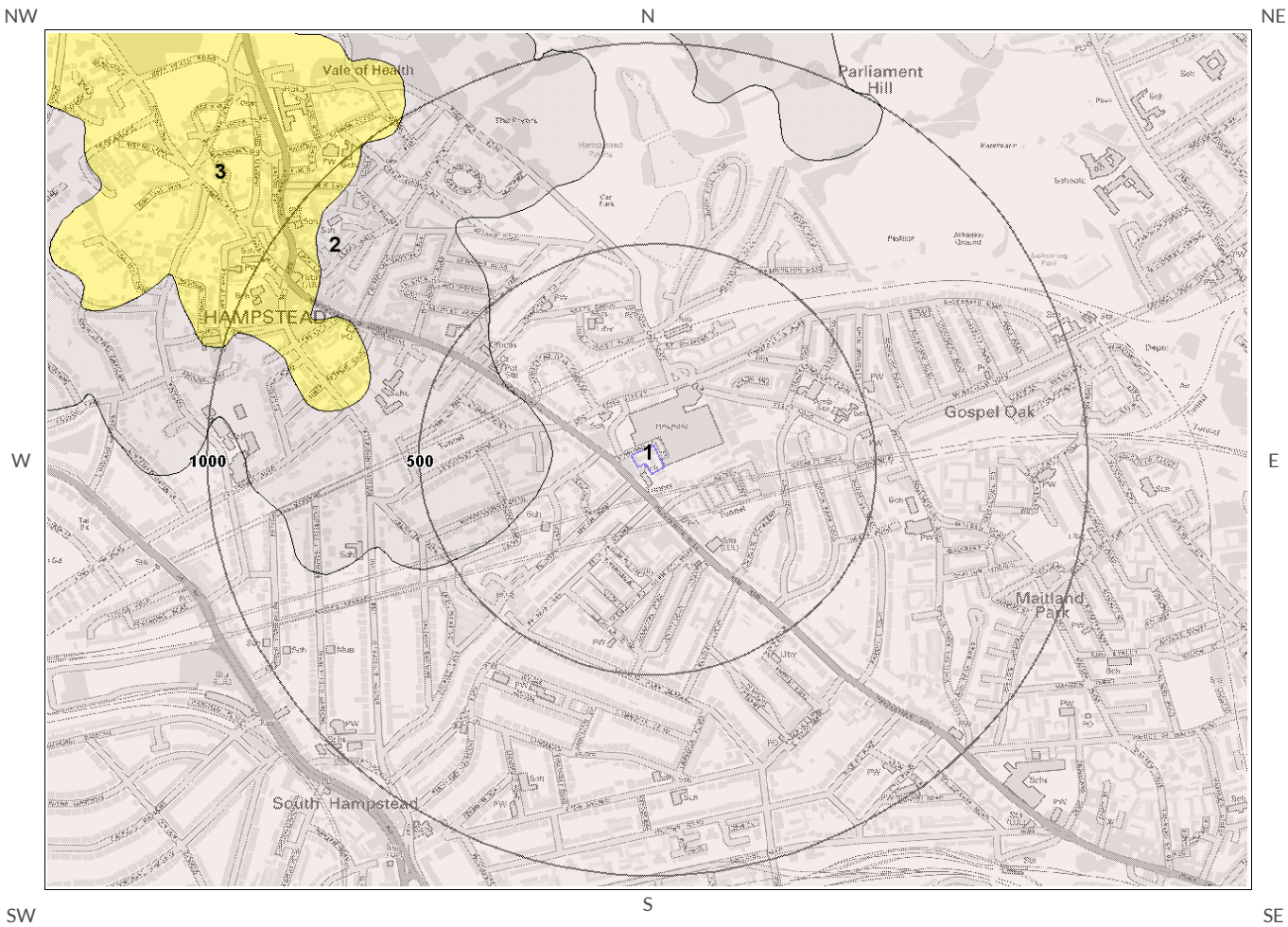
Are there any records relating to permeability of landslips within the study site* boundary? No

Database searched and no data found.

---

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

1.3 Bedrock and Faults Map



Bedrock and Faults Legend

Mapping sourced from Ordnance Survey

Site Outline

500
1000
Search Buffers (m)

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	Description	Rock Age
1	0.0	On Site	LC-CLSS	London Clay Formation - Clay, Silt And Sand	Eocene
2	185.0	W	CLGB-CLSS	Claygate Member - 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.

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

1.4 Radon Data

1.4.1 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

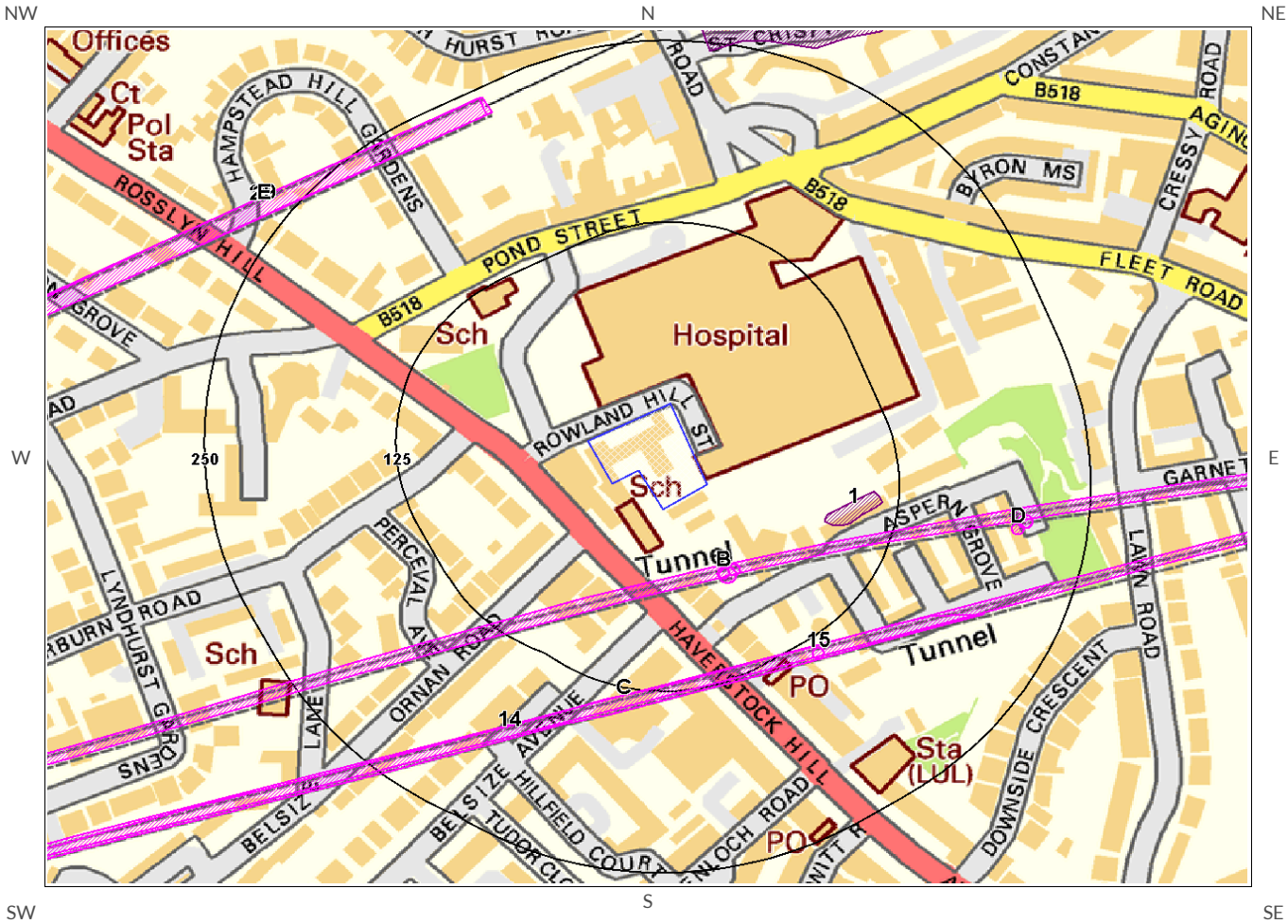
---

1.4.2 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

---

2 Ground Workings Map



Ground Workings Legend

Mapping sourced from Ordnance Survey

Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

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	80.0	E	527360 185282	Unspecified Ground Workings	1940
2	244.0	N	527417 185670	Cuttings	1865

2.2 Historical Underground Working 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? Yes

The following Historical Underground Working Features are provided by GroundSure:

ID	Distance (m)	Direction	NGR	Use	Date
3A	46.0	S	527029 185170	Tunnel	1974
4A	46.0	S	527029 185170	Tunnel	1995
5A	46.0	S	527029 185170	Tunnel	1965
6A	46.0	S	527029 185170	Tunnel	1958
7B	54.0	SE	527274 185237	Air Shaft	1940
8B	55.0	SE	527277 185236	Air Shaft	1912
9B	56.0	SE	527282 185240	Air Shaft	1920
10C	117.0	S	527203 185151	Tunnel	1974
11C	117.0	S	527203 185151	Tunnel	1995
12C	117.0	S	527203 185151	Tunnel	1958

ID	Distance (m)	Direction	NGR	Use	Date
13C	117.0	S	527203 185151	Tunnel	1965
14	117.0	S	526842 185044	Tunnel	1866
15	133.0	SE	527336 185182	Unspecified Shaft	1866
16D	201.0	E	527466 185268	Air Shaft	1912
17D	204.0	E	527471 185273	Air Shaft	1920
18E	231.0	NW	526647 185330	Tunnel	1974
19	231.0	NW	526647 185330	Tunnel	1965
20E	231.0	NW	526647 185330	Tunnel	1995
21	231.0	NW	526845 185427	Tunnel	1958
Not shown	526.0	SW	526752 185021	Unspecified Shaft	1866
Not shown	541.0	SW	526706 185071	Air Shaft	1920
Not shown	594.0	W	526591 185300	Ventilating Shaft	1865
Not shown	607.0	SW	526419 184933	Tunnels	1957
Not shown	607.0	SW	526419 184933	Tunnels	1973
Not shown	607.0	SW	526419 184933	Tunnels	1968
Not shown	607.0	SW	526419 184933	Tunnels	1989
Not shown	713.0	E	528025 185363	Tunnel	1965
Not shown	713.0	E	528025 185363	Tunnel	1995
Not shown	713.0	E	528025 185363	Tunnel	1974
Not shown	772.0	SW	526326 184952	Tunnels	1957
Not shown	772.0	SW	526326 184952	Tunnels	1968
Not shown	772.0	SW	526326 184952	Tunnels	1973
Not shown	772.0	SW	526326 184952	Tunnels	1989
Not shown	791.0	SW	526464 184994	Air Shaft	1973
Not shown	791.0	SW	526464 184994	Air Shaft	1989
Not shown	793.0	SW	526461 184996	Air Shaft	1940
Not shown	795.0	SW	526461 184995	Air Shaft	1920
Not shown	870.0	W	526240 185137	Tunnel	1958
Not shown	973.0	S	526978 184220	Tunnel	1957
Not shown	973.0	S	526978 184220	Tunnel	1973

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	973.0	S	526978 184220	Tunnel	1989
Not shown	973.0	S	526978 184220	Tunnel	1968

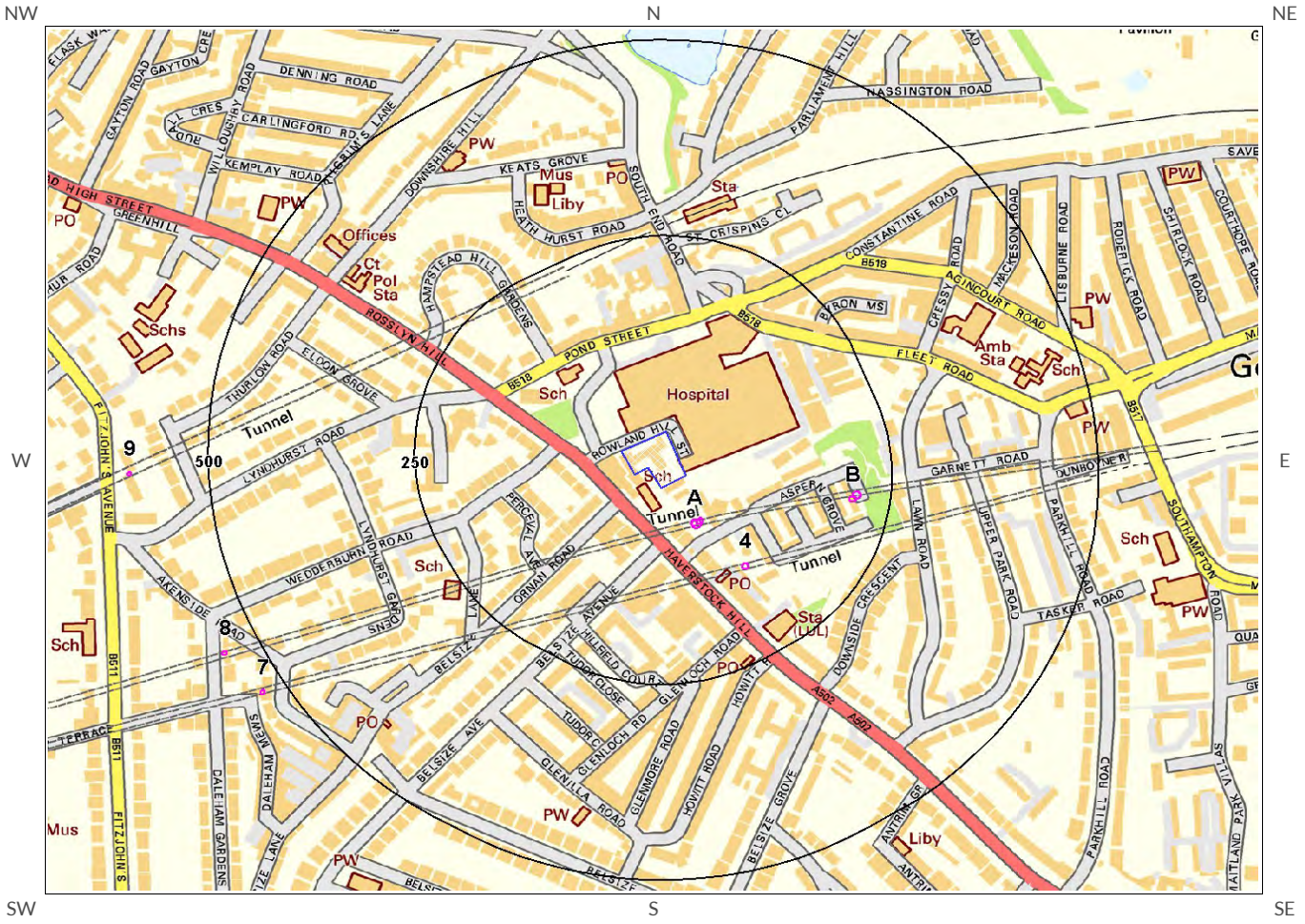
2.3 Current Ground Workings

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

Database searched and no data found.

3 Mining, Extraction & Natural Cavities Map



Mining, Extraction and Natural Cavities Legend

Mapping sourced from Ordnance Survey

Site Outline

250 / 500 Search Buffers (m)

Historical Mining

Non-Coal Mining Cavities

Natural Cavities

Non-Coal Mining

Highly likely

Likely

Unlikely

Highly unlikely

Rare

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? Yes

The following Historical Mining information is provided by GroundSure:

ID	Distance (m)	Direction	NGR	Details	Date
1A	54.0	SE	527274 185237	Air Shaft	1940
2A	55.0	SE	527277 185236	Air Shaft	1912
3A	56.0	SE	527282 185240	Air Shaft	1920
4	133.0	SE	527336 185182	Unspecified Shaft	1866
5B	201.0	E	527466 185268	Air Shaft	1912
6B	204.0	E	527471 185273	Air Shaft	1920
7	526.0	SW	526752 185021	Unspecified Shaft	1866
8	541.0	SW	526706 185071	Air Shaft	1920
9	594.0	W	526591 185300	Ventilating Shaft	1865
Not shown	791.0	SW	526464 184994	Air Shaft	1973
Not shown	791.0	SW	526464 184994	Air Shaft	1989
Not shown	793.0	SW	526461 184996	Air Shaft	1940
Not shown	795.0	SW	526461 184995	Air Shaft	1920

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 and no data 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

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.

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.

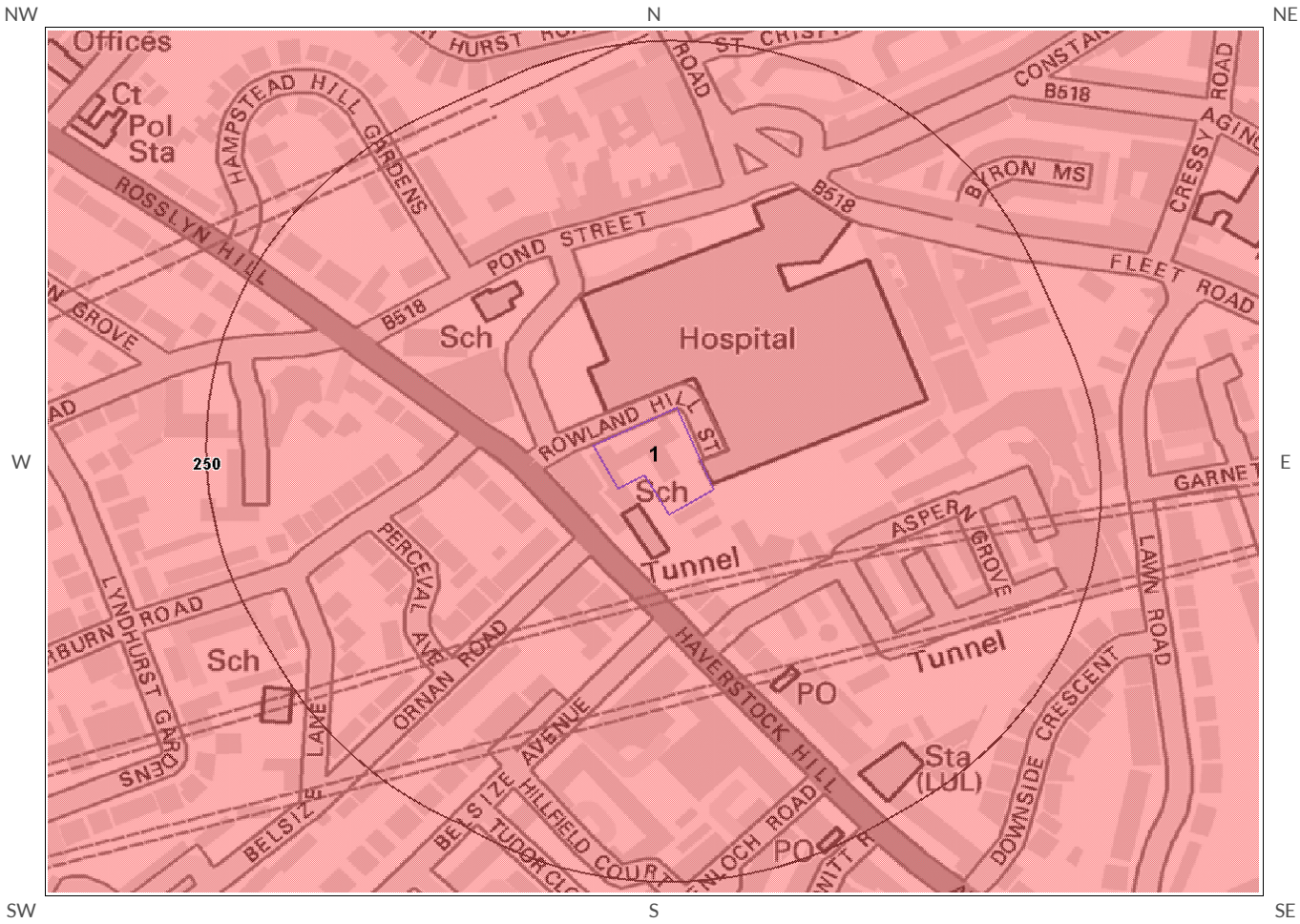
Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

4 Natural Ground Subsidence

4.1 Shrink-Swell Clay Map



Shrink Swell Clay Legend

Mapping sourced from Ordnance Survey

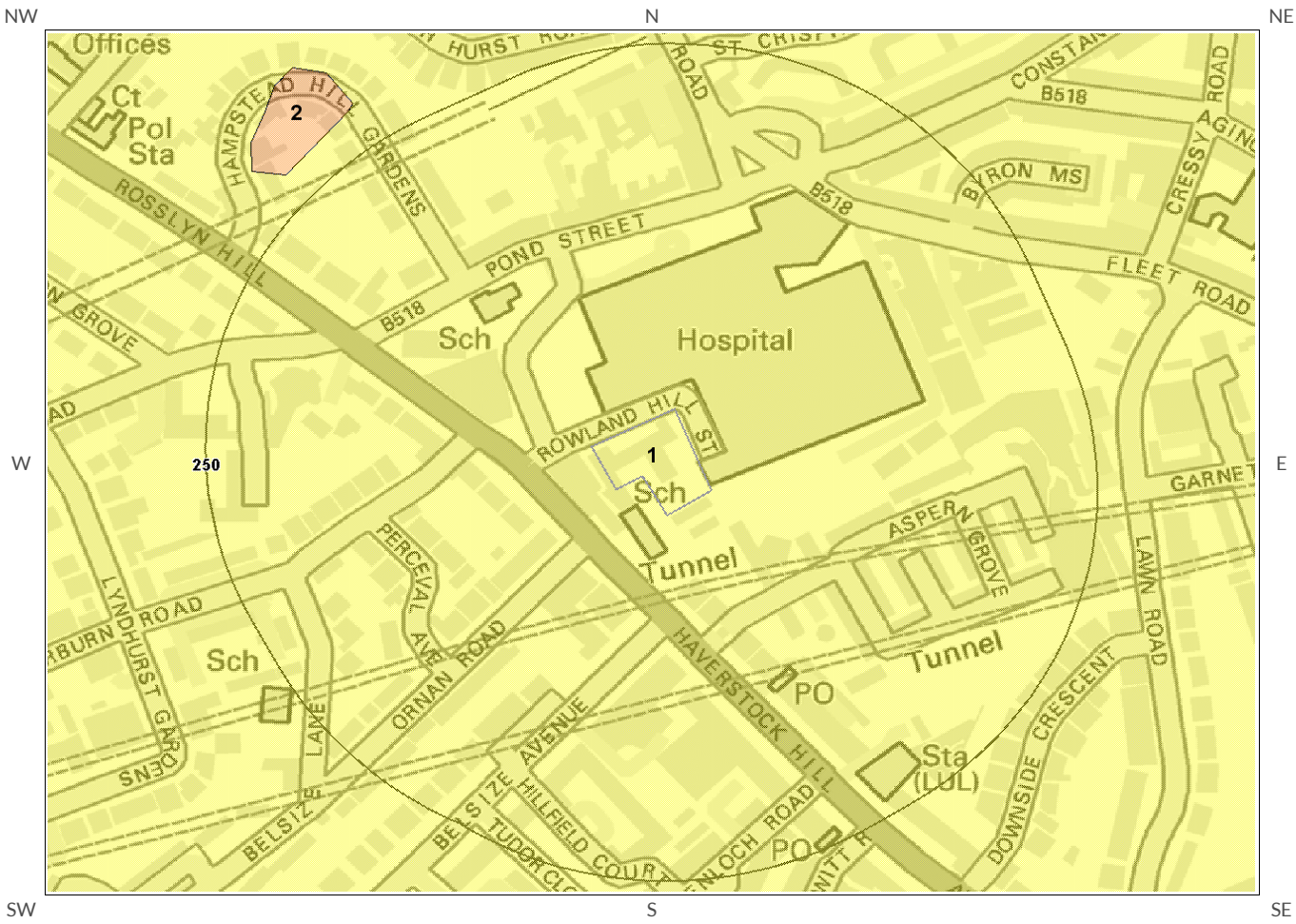
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

4.2 Landslides Map



Landslides Legend

Mapping sourced from Ordnance Survey

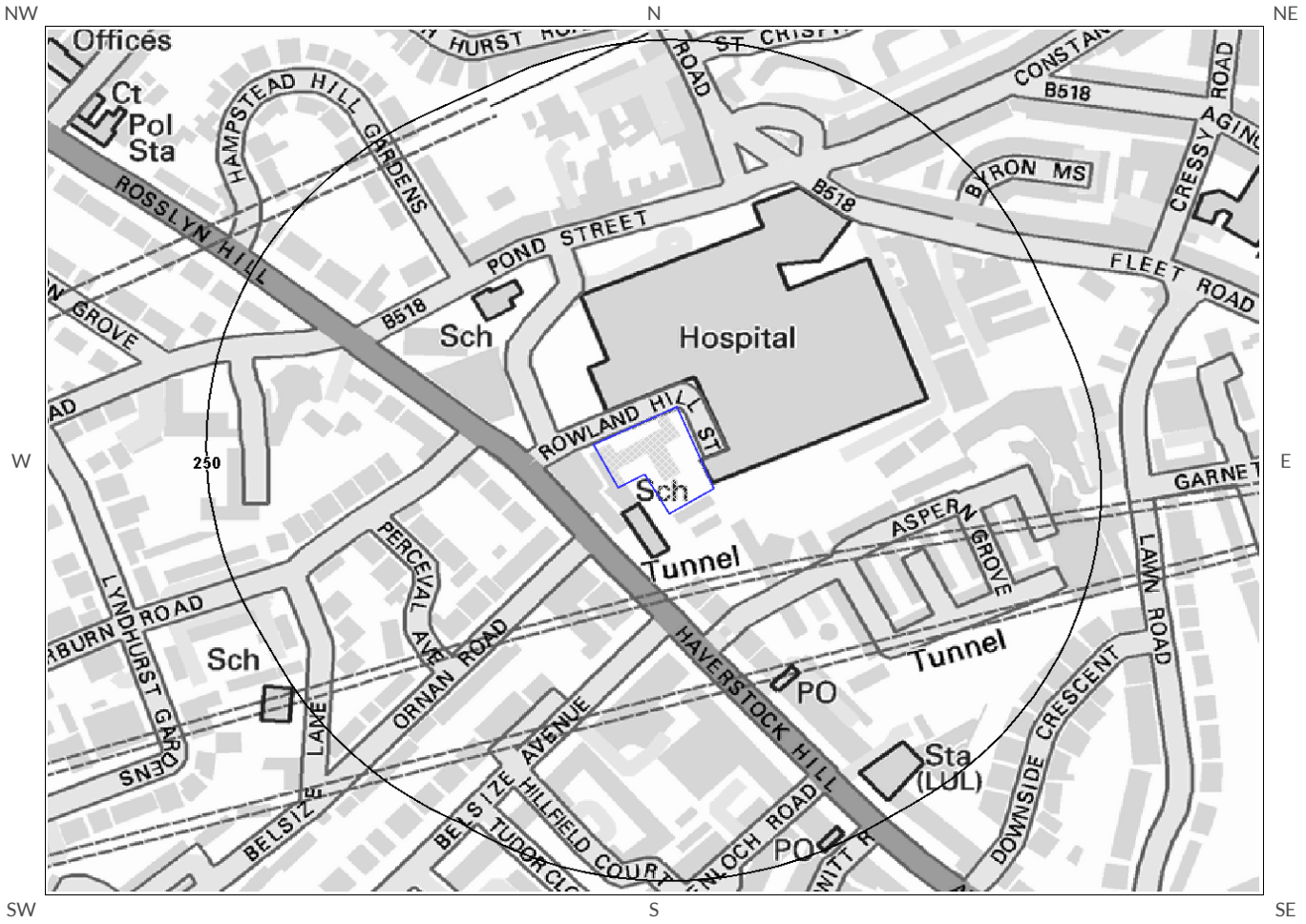
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

4.3 Ground Dissolution Soluble Rocks Map



Ground Dissolution Soluble Rocks Legend

Mapping sourced from Ordnance Survey

Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

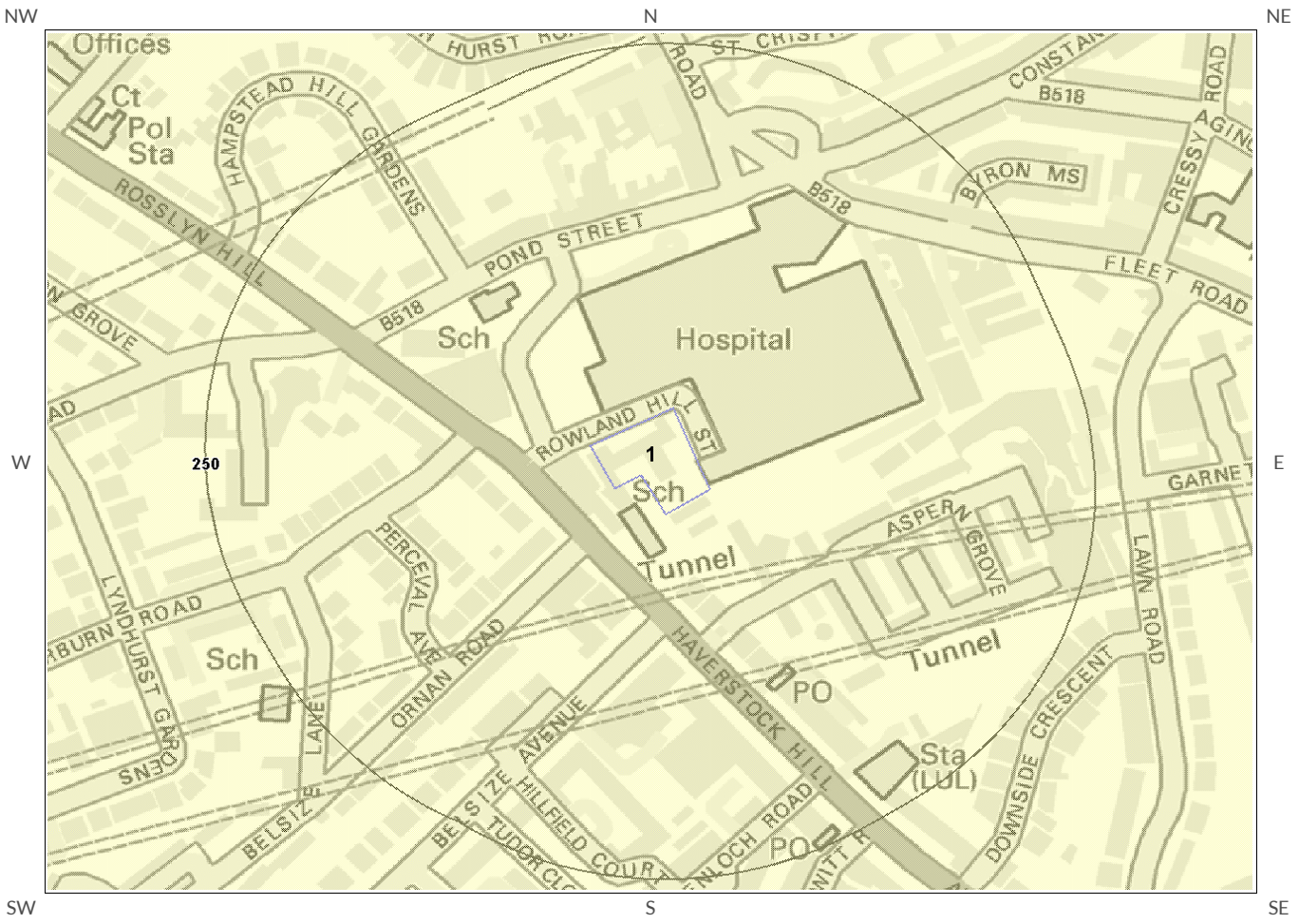
Very Low

Low

Moderate

High

4.4 Compressible Deposits Map



Compressible Deposits Legend

Mapping sourced from Ordnance Survey

Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

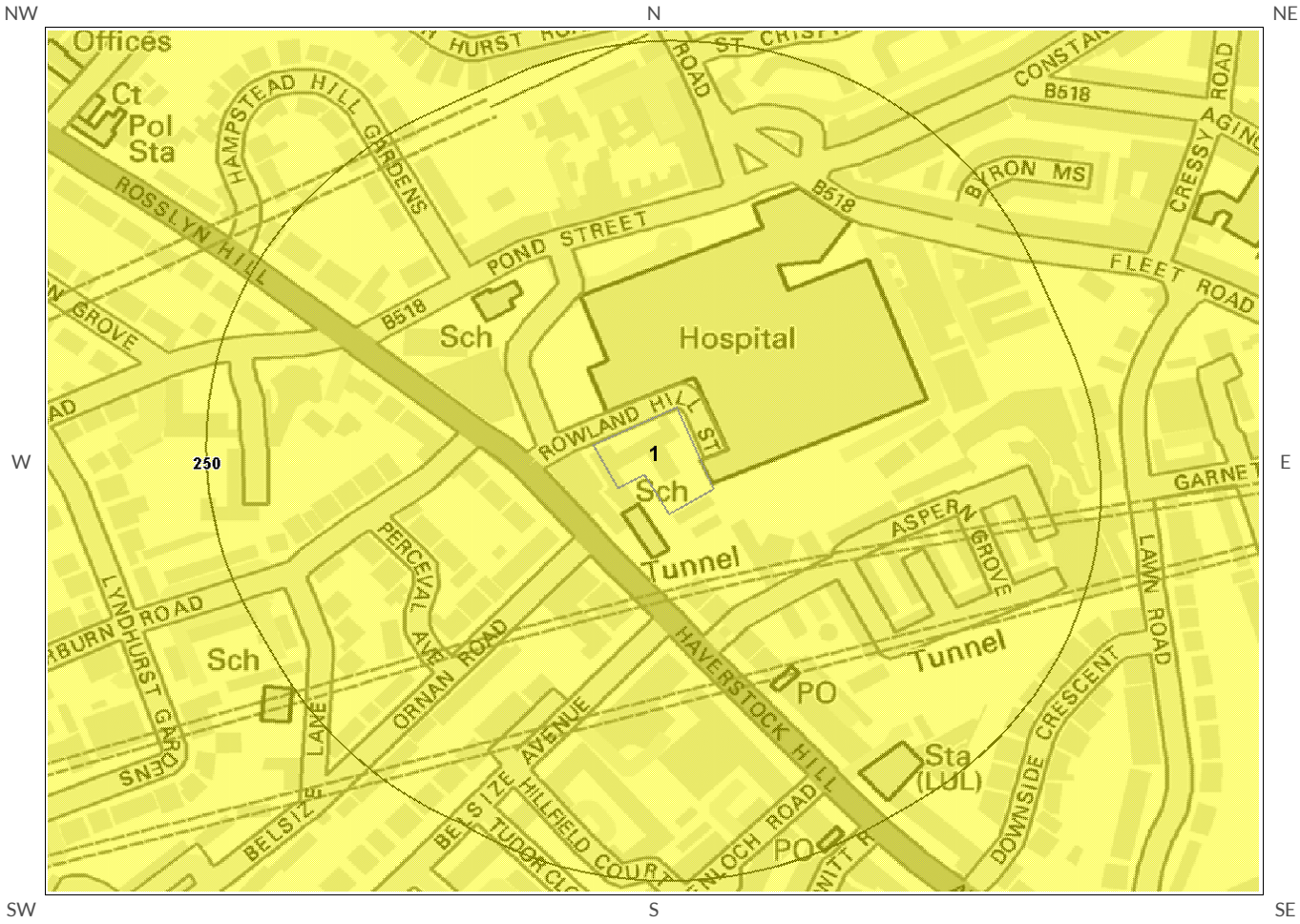
Very Low

Low

Moderate

High

4.5 Collapsible Deposits Map



Collapsible Deposits Legend

Mapping sourced from Ordnance Survey

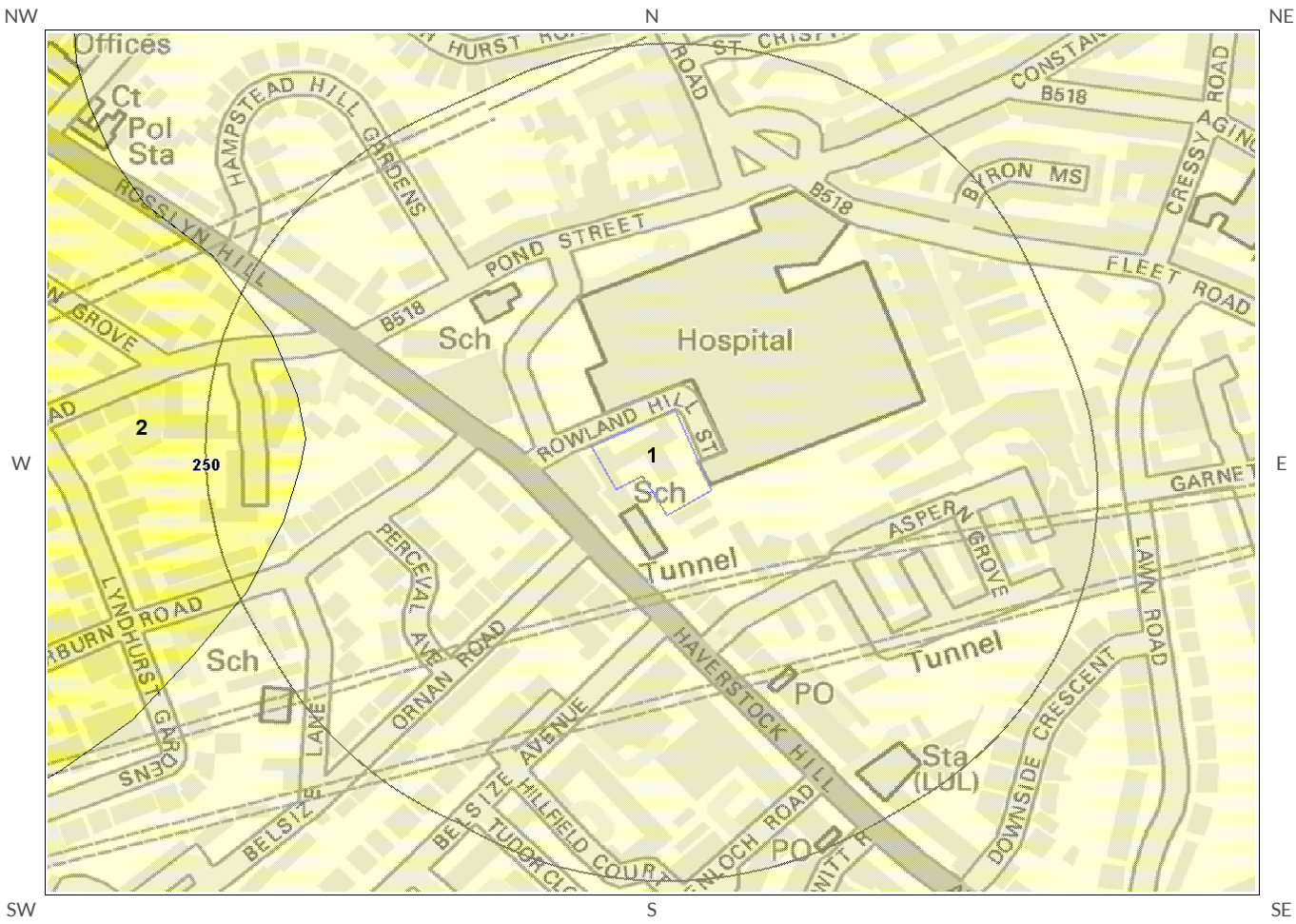
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

4.6 Running Sand Map



Running Sand Legend

Mapping sourced from Ordnance Survey

Site Outline

125
250
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.

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

4.3 Ground Dissolution of Soluble Rocks

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

Distance (m)	Direction	Hazard Rating	Details
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 Deposits information provided by the British Geological Survey:

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 provided by the British Geological Survey:

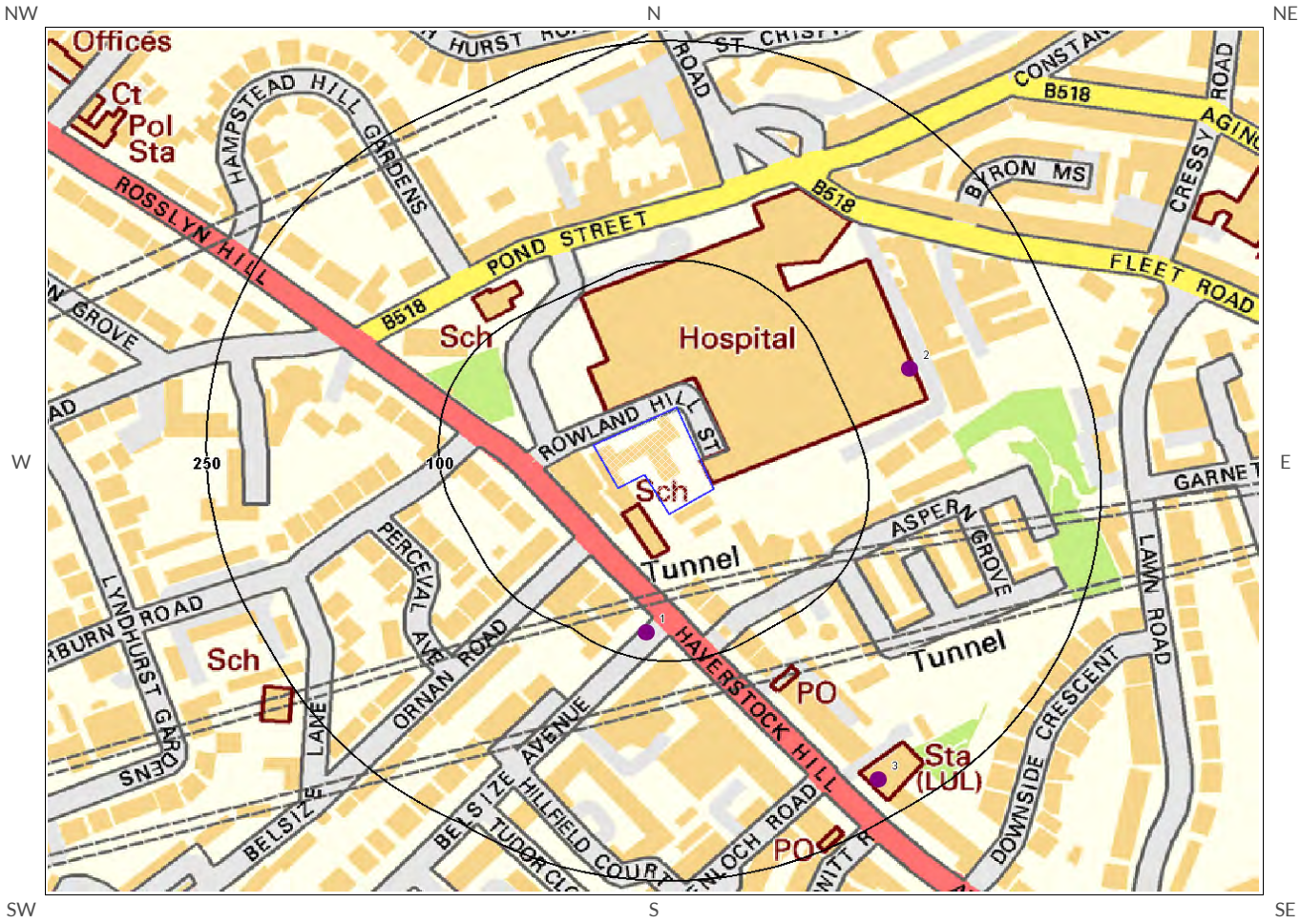
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible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

4.6 Running Sands

The following Running Sands information 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

Mapping sourced from Ordnance Survey

Site Outline

Borehole Locations

125
250
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: 3

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	82.0	S	527220 185200	TQ28NE38	6.09	JUNCTION OF BELSIZE AVE HAMPSTEAD
2	148.0	NE	527390 185380	TQ28NE277	177.0	ROYAL FREE HOSPITAL
3	224.0	SE	527370 185100	TQ28NE48	43.58	BELSIZE PARK STATION ISLINGTON

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

#1: scans.bgs.ac.uk/sobi_scans/boreholes/590626
#2: scans.bgs.ac.uk/sobi_scans/boreholes/590865
#3: scans.bgs.ac.uk/sobi_scans/boreholes/590636

6 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary: 4

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	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
186.0	W	London	No data	No data	No data	No data	No data
186.0	W	London	No data	No data	No data	No data	No data
186.0	W	London	No data	No data	No data	No data	No datac

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

Contact Details

GroundSure Helpline
Telephone: 08444 159 000
info@groundsure.com

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

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

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: **enquiries@phe.gov.uk**
Main switchboard: 020 7654 8000

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
Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444
Website:**http://www1.getmapping.com/**

Peter Brett Associates
Caversham Bridge House
Waterman Place
Reading
Berkshire RG1 8DN
Tel: +44 (0)118 950 0761 E-mail:**reading@pba.co.uk**
Website:**http://www.peterbrett.com/home**

Report Reference: CGL01-1325241
Client Reference: CG/08753/JJM01

Standard Terms and Conditions

1 Definitions

In these terms and conditions unless the context otherwise requires:
"Beneficiary" means the person or entity for whose benefit the Client has obtained the Services.
"Client" means the party or parties entering into a Contract with GroundSure.
"Commercial" means any building or property which is not Residential.
"Confidential Information" means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by GroundSure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

"Support Services" means Support Services provided by GroundSure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.
"Contract" means the contract between GroundSure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.
"Third Party Data Provider" means any third party providing Third Party Content to GroundSure.
"Data Reports" means reports comprising factual data with no accompanying interpretation.
"Fees" has the meaning set out in clause 5.1.
"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028.
"GroundSure Materials" means all materials prepared by GroundSure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.
"Intellectual Property" means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.
"Mapping" means a map, map data or a combination of historical maps of various ages, time periods and scales.
"Order" means an electronic, written or other order form submitted by the Client requesting Services from GroundSure in respect of a specified Site.
"Ordnance Survey" means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.
"Order Website" means the online platform through which Orders may be placed by the Client and accepted by GroundSure.
"Report" means a Risk Screening Report or Data Report for Commercial or Residential property.
"Residential" means any building or property used as or intended to be used as a single dwelling.
"Risk Screening Report" means a risk screening report comprising factual data with an accompanying interpretation by GroundSure.
"Services" means any Report, Mapping and/or Support Services which GroundSure has agreed to provide by accepting an Order pursuant to clause 2.6.
"Site" means the area of land in respect of which the Client has requested GroundSure to provide the Services.
"Third Party Content" means data, database information or other information which is provided to GroundSure by a Third Party Data Provider.
"User Guide" means the user guide, as amended from time to time, available upon request from GroundSure and on the website (www.GroundSure.com) and forming part of this Contract.

2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 GroundSure agrees to provide the Services in accordance with the Contract.
2.2 GroundSure shall exercise reasonable skill and care in the provision of the Services.
2.3 Subject to clause 7.3 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 writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.
2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.
2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. In addition you acknowledge and agree that GroundSure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.
2.6 GroundSure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by GroundSure. GroundSure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by GroundSure. GroundSure's acceptance of an Order shall be binding only when made in writing and signed by GroundSure's authorised representative or when accepted through the Order Website.

3 The Client's obligations

3.1The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to GroundSure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.
3.3 The Client shall supply to GroundSure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as GroundSure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.
3.4 Where the Client's approval or decision is required to enable GroundSure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.
3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the GroundSure Materials, or use the GroundSure Materials in a manner for which they were not intended. The Client may make the GroundSure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.
3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that GroundSure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

4 Reliance

4.1The Client acknowledges that the Services provided by GroundSure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by GroundSure to be reliable.
4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

(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, and

(v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.
4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by GroundSure. Any party considering such Reports and Services does so at their own risk.

5 Fees and Disbursements

5.1GroundSure shall charge and the Client shall pay fees at the rate and frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by GroundSure. 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 (together "Fees").
5.2 The Client shall pay all outstanding Fees to GroundSure in full without deduction, counterclaim or set off within 30 days of the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.
5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of GroundSure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

6 Intellectual Property and Confidentiality

6.1 Subject to

(i) full payment of all relevant Fees and

(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the GroundSure Materials.

6.2 All Intellectual Property in the GroundSure Materials are and shall remain owned by GroundSure or GroundSure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.
6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the GroundSure Materials shall:

(i) not remove, suppress or modify any trade mark, 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 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;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the GroundSure Materials in order to advise the Beneficiary in a professional capacity. However, GroundSure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person 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.

7.Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of GroundSure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by GroundSure or its employees, agents or subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 GroundSure shall not be liable for

(i) loss of profits;

(ii) loss of business;

(iii) depletion of goodwill and/or similar losses;

(iv) loss of anticipated savings;

(v) loss of goods;

(vi) loss of contract;

(vii) loss of use;

(viii) loss or corruption of data or information;

(ix) business interruption;

(x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the GroundSure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of GroundSure's internet ordering service.

7.5 GroundSure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 GroundSure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of GroundSure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against GroundSure in relation to the Services or other matters arising pursuant to the Contract.

8 GroundSure's right to suspend or terminate

8.1 If GroundSure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, GroundSure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 GroundSure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to GroundSure within 30 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 term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon GroundSure's acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are
(a) supplied to the Client's specification(s) and in any event
(b) by their nature cannot be returned.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) 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 and/or Beneficiary any property of the Client and/or Beneficiary in GroundSure's possession or control; and

(ii) 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 or suspension. In respect of any Support Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination or suspension of the Contract.

11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of GroundSure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to GroundSure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through GroundSure.

12.3 GroundSure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of GroundSure.

12.4 No failure on the part of GroundSure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, 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.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 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 Third Party Data Providers;

(viii) changes in law; or

(ix) any other reason beyond GroundSure's reasonable control.

In the event that GroundSure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then GroundSure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 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.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 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.

12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 GroundSure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at GroundSure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law

APPENDIX C

BGS borehole logs

GEOLOGICAL SURVEY OF GREAT BRITAIN

RECORD OF SHAFT OR BORE FOR MINERALS

(*For Survey use only*)

6-inch Map Registered No. TQ 28 NE/7

Name of Shaft or Bore given by Geological Survey:

Name and Number given by owner: Hampstead Hill Gdns. Tube bore.

For whom made

Town or Village Hampstead County

Exact site Junction of Hampstead Hillgds. and Haverstock Hill { Attach a tracing from a map, or a sketch-map, if possible.

Purpose for which made

Nat. Grid Reference 2696 · 8596

1" N.S.Map No.	1" O.S.Map No.	Confidential or not
256		

Ground Level at shaft bore relative to O.D. 252 ft. If not ground level give O.D. of beginning of shaft bore

Made by Date of sinking 1900

Information from LCC Date received

Examined by

SPECIMEN NUMBERS AND ADDITIONAL NOTES

MS593

(*For Survey use only*) Geological Classification	DESCRIPTION OF STRATA	Thickness Ft.	Thickness In.	Depth Ft.	Depth In.
	Macadam.	1	-		
	clay	51		52	-

(5412) Wt.32837/PS.134 2m 10/64 G.W.B.Ltd. Gp.863

GEOLOGICAL SURVEY OF GREAT BRITAIN

RECORD OF SHAFT OR BORE FOR MINERALS

(*For Survey use only*)
6-inch Map Registered No.
TQ28NE/38

Name of Shaft or Bore given by Geological Survey:

Name and Number given by owner:
C 16.

Nat. Grid Reference
2722. 8520

For whom made

Town or Village Hampstead. County

Exact site Junction of Belsize Av. and Haverstock Hill. {Attach a tracing from a map, or a sketch-map, if possible.

1" N.S.Map No.	1" O.S.Map No.	Confidential or not
256		

Purpose for which made

Ground Level at shaft / bore relative to O.D. 234' If not ground level give O.D. of beginning of shaft / bore

Made by Date of sinking 1900.

Information from LCC. Date received

Examined by

SPECIMEN NUMBERS AND ADDITIONAL NOTES

(*For Survey use only*) Geological Classification	DESCRIPTION OF STRATA	Thickness Ft.	Thickness In.	Depth Ft.	Depth In.
MGR LC	Made Ground	4	-		
	Clay	16	-	20	- (6.10)
	For Hampstead Tube Rly.				

(5412) Wt.32837/P93.134 2m. 10/64 O.W.B.Ltd. Gp.863

69, Upper Ground,
S.E.1.

The London Passenger Transport
Board,
55, Broadway,
S.W.1.

TQ28NE/48

2737.8510

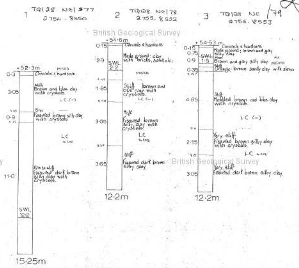
256

April/May, 1941.

STRATA DETAILS OF TRIAL HOLE DRILLED BY
MESSRS. R. RICHARDS & CO. FOR THE LONDON
PASSENGER TRANSPORT BOARD, 55 BROADWAY, S.W.1.
Site - Belsize Park.

— Belsize Park Stn
not sited.

	Thickness.		Depth.	
	Ft.	In.	Ft.	In.
Ashes	0	6"	0	6"
Made up Ground	7	6	8	0
Mud with water	1	0	9	0
Made up Yellow Clay	3	6	12	6
Yellow Clay	12	6	25	0
Blue Clay	118	0	143	0



KEY PLAN

Scale 1:1250

Size A2 16½" x 23⅜" — 420mm x 594mm

div	job no.	drg. no.	rev.
G	3287 SW	01	

JOB DMES OFFICES & WORKSHOPS CRESSY ROAD CAMDEN

TITLE
TRIAL BORINGS 1-3
KEY PLAN & SECTIONS

scale VERTICAL 1:100

date	drawn	checked
21 . 7 . 1971		H.C.T.

GLC ILEA

Dept of Architecture and Civic Design

Architect Roger Walters

01-633 5000 Ext. 8381

NOTES

1 Newlyn Datum Levels
2 ⌖ Denotes Trial Boring
3 WS Denotes Water Strike
4 SWL Denotes Standing Water Level at the time of boring in July 1971

REVISIONS

no.	date

COPY

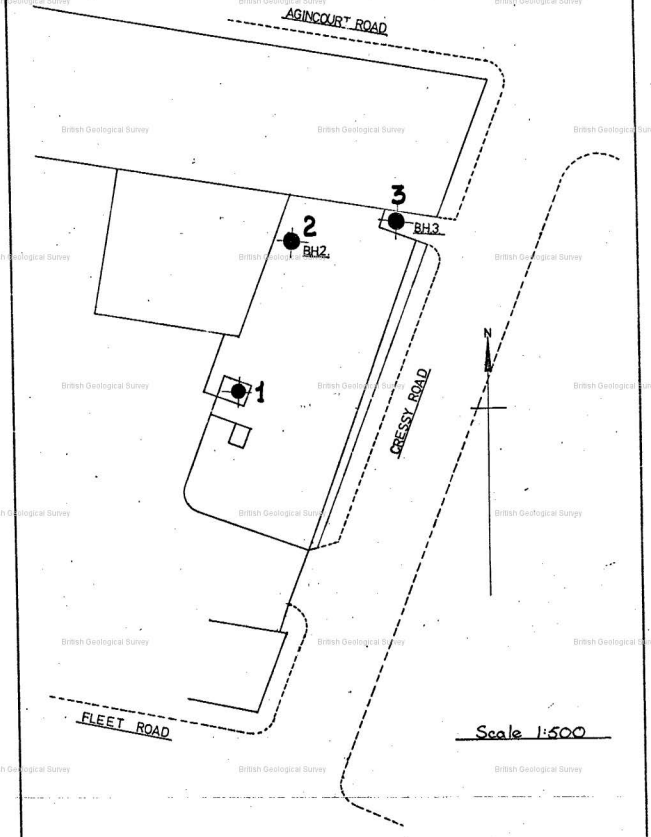
reference

div.	job no.	drg. no.	rev.
G	3287 SW	01	

Size A2 16½" x 23⅜" — 420mm x 594mm

DUPLICATE. TQ/28NE/77-74.

1" = 25ft. 607



Site plan showing the location of Boreholes

GROUND EXPLORATIONS Ltd. 69/76 Alpha Street, Slough, Bucks.	Drwn. by: WBH Ckd. by: BW	Report No. 5332
	Date June 1971	Figure No. 1

GROUND EXPLORATIONS LTD.

TQ/28NE/77
2754.8550.

BOREHOLE NO. 1

Contract Name Cressy Road, Camden
Report No. 5332/BW/MA

Client Greater London Council, Department of Architecture
Address and Civic Design, The County Hall, London, S.E.1.
ORDER NO.: BC.85977

Site Address Cressy Road, Camden, London, N.W.3.

Standing Water Level 12.2 m.
Method of Boring Shell and auger
Water Struck -
Diameter 0.15m.
Ground Level 52.295m. O.D.
Start 7.6.71. Finish 9.6.71.

Remarks

JARS metres				CORES metres		BULK metres	
1530	0.75	1550	15.25	1531	1.05		
1532	2.3	1551	Water	1533	2.6		
1534	3.5			1535	4.1		
1536	4.7			1537	5.65		
1538	6.25			1539	7.15		
1540	7.75			1541	8.7		
1542	9.3			1543	10.2		
1544	10.8			1545	11.75		
1546	12.35			1547	13.25		
1548	13.85			1549	14.8		

Description	Thickness m	Depth m
Concrete and hardcore.	0.3	0.3
Stiff Brown and blue clay with crystals	3.05	3.35
Firm Fissured brown silty clay with crystals	0.9	4.25
Firm to stiff fissured dark brown silty clay with crystals.	11.0	15.25
TOTALS	15.25	15.25

Notes 1. Descriptions are in accordance with B.S. Code of Practice C.P. 2001
Clients are requested to compare with samples submitted.
2. Core samples are nominally 4 ins. diameter and 18 ins. long.
Depths shown are to top of sample.

TQ 28 NE /77-79.

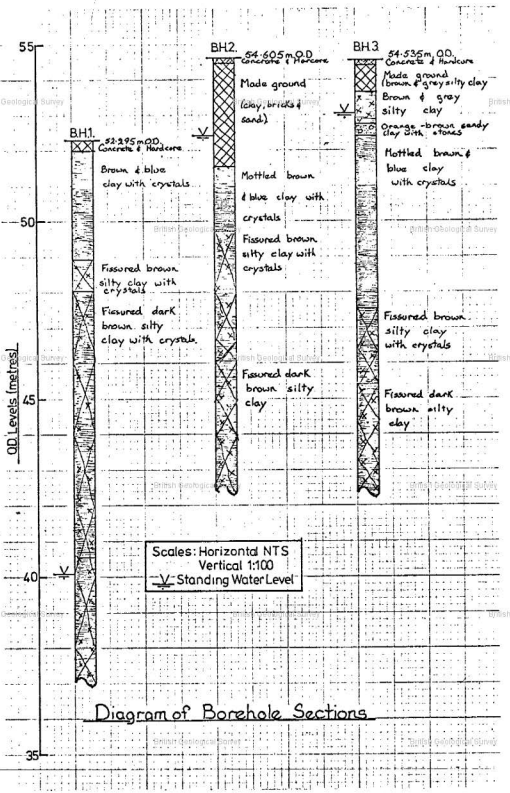


Diagram of Borehole Sections

GROUND EXPLORATIONS Ltd.	Drwn. by: WBH Ckd. by: BW	Report No.	5332
68/76 Alpha Street, Slough, Bucks.	Date July 1971	Figure No.	2

ROYAL FREE HOSPITAL 256

TQ 28/198

[redacted]

Owner ROYAL FREE HAMPSTEAD NHS | Licence No.

Occupier | IGS Ref. No.

Nat. Grid Ref. TQ 2739 8538

Status OBH

Ground Level m OD ft. OD

Level of Well Top 59.28 m OD ft. OD

Aquifer UPPER CHALK

Rest Water Level 95.65 m bwt ft. bwt

(Date 26/7/99 m OD ft. OD

Construction

Depth bwt m	Dia mm	Linings (below well top) From m	To m	Dia mm	Type
114	300	0	114	200	plain
177	200				

Summary of Geological Section	Thickness m	Depth m
LONDON CLAY	69	69
WR RB	21	90
Thanet Sands	11	101
UPPER CHALK	76	177

Abstraction Rates

gph

gpd

Type of Pump

Chem./Bact. Anal. YES NO

Well Driller Soil Mechanics

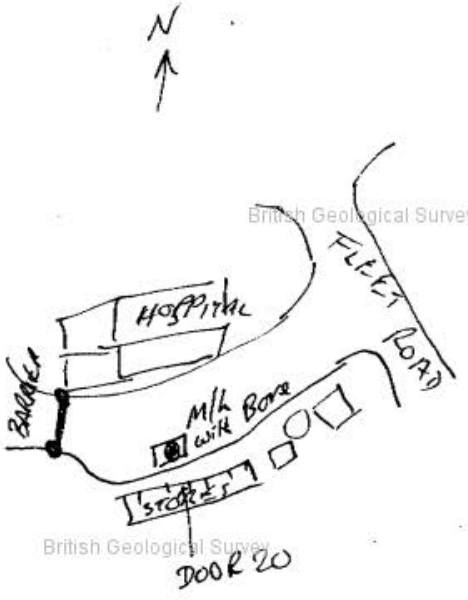
If insufficient space has been allowed, continue in 'Notes' overleaf.

This record has already been entered, but contains some geological information.

* Not found as registered!

ACCESSION NUMBER 360914

Site Plan



Notes

Borehole originally drilled for abstraction. Due to extremely low yield converted to OBH.

ENVIRONMENT---AGENCY

EASTERN LS THAMES EA

256

TQ 28 NE

ROYAL FREE HOSPITAL

TQ28/ 198

Owner ROYAL FREE HAMPSTEAD NHT	Licence No.	Nat. Grid Ref. TQ 2739 8538	
Occupier " "	IGS Ref. No.	Status OBH	
Ground Level	m OD	ft. OD	Aquifer CHALK
Level of Well Top	m OD	ft. OD	
Rest Water Level 95.65	m bwt	ft. bwt	
(Date 26/7/99)	m OD	ft. OD	

Construction

Depth bwt m	Dia. mm	Linings (below well top) From	To m	Dia. mm	Type
114	300	0	114	200	plain
177	200				

Summary of Geological Section	Thickness	Depth

Abstraction Rates — Type of Pump

gph — Chem./Bact. Anal. YES NO

gpd — Well Driller [illegible] Soil Mechanics

If insufficient space has been allowed, continue in 'Notes' overleaf.

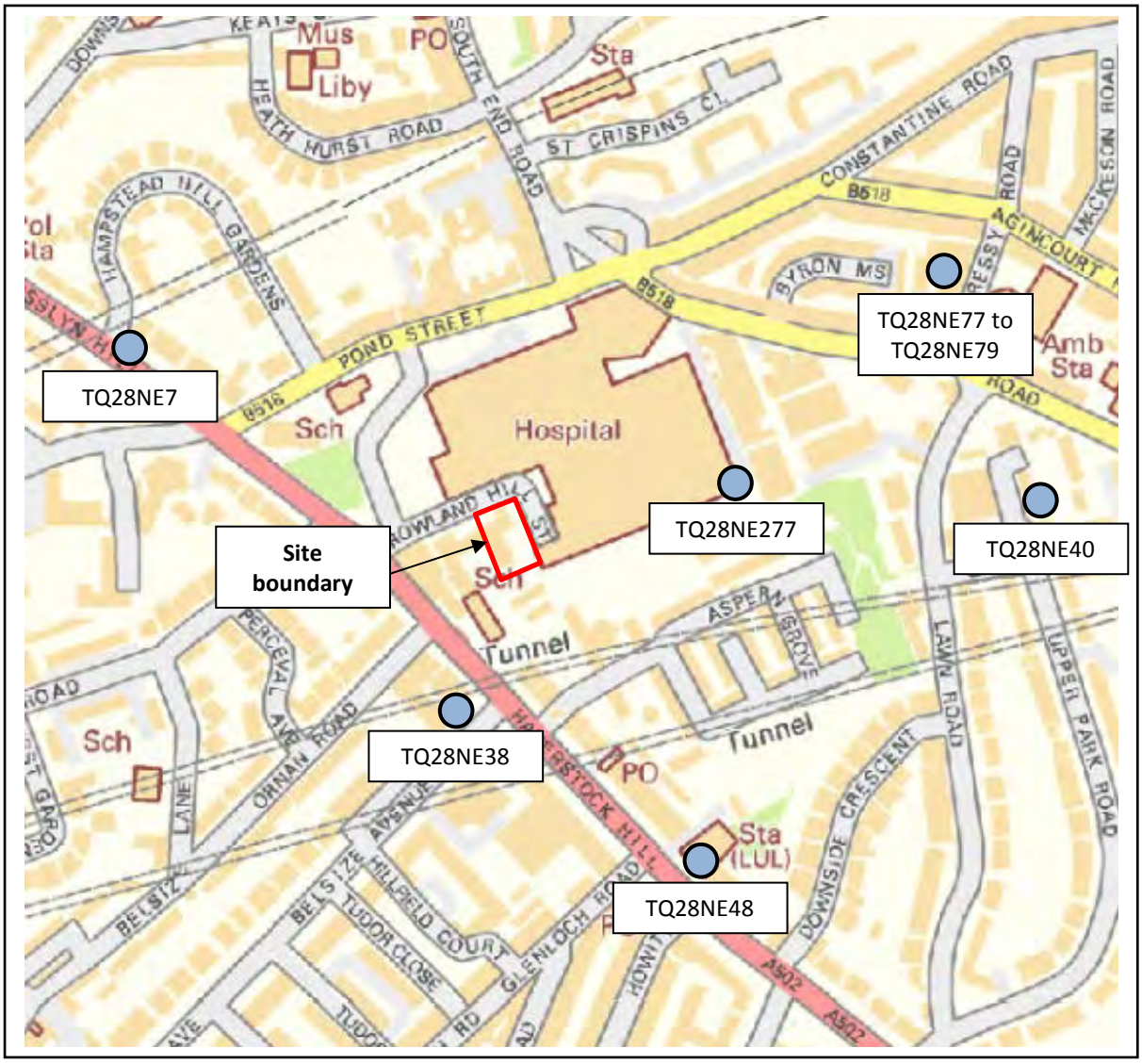


Figure taken from the BGS geoindex (www.bgs.ac.uk)

Not to scale

N

Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title **BGS borehole location plan**	

APPENDIX D

CPG4 flowcharts

Figure 1. Subterranean (ground water) flow screening chart

The Developer should consider each of the following questions in turn, answering either "yes", "unknown" or "no" in each instance.

Consideration should be given to both the temporary and permanent works, along with the proposed surrounding landscaping and drainage associated with a proposed basement development.

Question 1a: Is the site located directly above an aquifer?

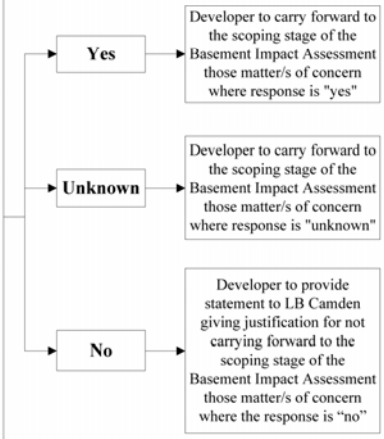
Question 1b: Will the proposed basement extend beneath the water table surface?

Question 2: Is the site within 100m of a watercourse, well (used/disused) or potential spring line?
Question 3: Is the site within the catchment of the pond chains on Hampstead Heath?

Question 4: Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?

Question 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)?

Question 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 (not just the pond chains on Hampstead Heath) or spring line.



Notes / sources of information

Question 1: In LB Camden, all areas where the London Clay does not outcrop at the surface are considered to be an aquifer. This includes the River Terrace Deposits, the Claygate Member and the Bagshot Formation. The location of the geological strata can be established from British Geological Survey maps (e.g. 1:50,000 and 1:10,000 scale). Note that the boundaries are indicative and should be considered to be accurate to ±50m at best.
Additionally, the Environment Agency (EA) "Aquifer Designation Maps" can be used to identify aquifers. These can be found on the "Groundwater maps" available on the EA website (www.environment-agency.gov.uk) follow "At home & leisure" > "What's in Your Backyard" > "Interactive Maps" > "Groundwater". Knowledge of the thickness of the geological strata present and the level of the groundwater table is required. This may be known from existing information (for example nearby site investigations), however, it may not be known in the early stages of a project. Determination of the water table level may form part of the site investigation phase of a BIA.
Question 2: Watercourses, wells or spring lines may be identified from the following sources:

- Local knowledge and/or site walkovers
- Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). If features are marked (they are not always) the following symbols may be present: W; Spr; water is indicated by blue colouration. (check the key on the map being used)
- British Geological Survey maps (e.g. 1:10,000 scale, current and earlier editions). Current maps will show indicative geological strata boundaries which are where springs may form at the ground surface; of relevance are the boundary between the Bagshot Formation with the Claygate Member and the Claygate Member with the London Clay. Note that the boundaries are indicative should be considered to be accurate to ±50m. Earlier geological maps (e.g. the 1920's 1:10560 scale) maps show the location of some wells.
- Aerial photographs
- "Lost Rivers of London" by Nicolas Barton, 1962. Shows the alignment of rivers in London and their tributaries.
- The British Geological Survey (BGS) GeoIndex includes "Water Well" records. See www.bgs.ac.uk and follow "Online data" > "GeoIndex" > "Onshore GeoIndex".
- The location of older wells can be found in well inventory/catalogue publications such as "Records of London Wells" by G. Barrow and L. J. Wills (1913) and "The Water Supply of the County of London from Underground Sources" by S Buchan (1938).
- The Environment Agency (EA) "Source Protection Zone Maps" can be used to identify aquifers. These can be found on the "Groundwater maps" available on the EA website (www.environment-agency.gov.uk) follow "At home & leisure" > "What's in Your Backyard" > "Interactive Maps" > "Groundwater".
- The EA hold records of licensed groundwater abstraction boreholes. LB Camden is within the North East Area of the Thames Region. Details can be found on the EA website.
- LB Camden Environmental Health department may hold records of groundwater wells in the Borough.

Where a groundwater well or borehole is identified, it will be necessary to determine if it is extending into the Lower Aquifer (Chalk) or the Upper Aquifer (River Terrace Deposits, Bagshot Formation, Claygate Member etc). It is water wells extending into the Upper Aquifer which are of concern with regard to basement development.
Question 3: Figure 14 in the attached study, (prepared using data supplied by the City of London Corporation's hydrology consultant, Haycocks Associates) shows the catchment areas of the pond chains on Hampstead Heath.
Question 4: This will be specific to the proposed development and will be a result of the proposed landscaping of areas above and surrounding a proposed basement.
Question 5: This will be specific to the proposed development and will be a result of the chosen drainage scheme adopted for the property.
Question 6: The lowest point will be specific to the proposed development. Knowledge of local ponds may be taken from

- Local knowledge and/or site walkovers
- Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). If features are marked (they are not always) the following symbols may be present: W; Spr; water is indicated by blue colouration. (check the key on the map being used)
- Aerial photographs

Figure 2. Slope stability screening flowchart

The Developer should consider each of the following questions in turn, answering either "yes", "unknown" or "no" in each instance.

Consideration should be given to both the temporary and permanent works, along with the proposed surrounding landscaping and drainage associated with a proposed basement development.

Question 1: Does the existing site include slopes, natural or manmade, greater than 7°? (approximately 1 in 8)

Question 2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7°? (approximately 1 in 8)

Question 3: Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°? (approximately 1 in 8)

Question 4: Is the site within a wider hillside setting in which the general slope is greater than 7°? (approximately 1 in 8)

Question 5: Is the London Clay the shallowest strata at the site?

Question 6: Will any tree/s 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? (Note that consent is required from LB Camden to undertake work to any tree/s protected by a Tree Protection Order or to tree/s in a Conservation Area if the tree is over certain dimensions).

Question 7: Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?

Question 8: Is the site within 100m of a watercourse or a potential spring line?

Question 9: Is the site within an area of previously worked ground?

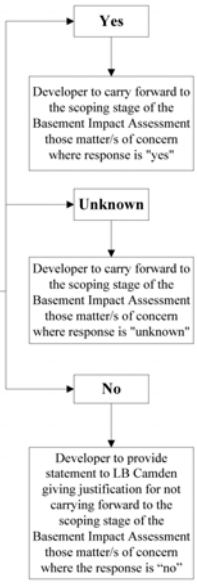
Question 10: Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?

Question 11: Is the site within 50m of the Hampstead Heath ponds?

Question 12: Is the site within 5m of a highway or pedestrian right of way?

Question 13: Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?

Question 14: Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?



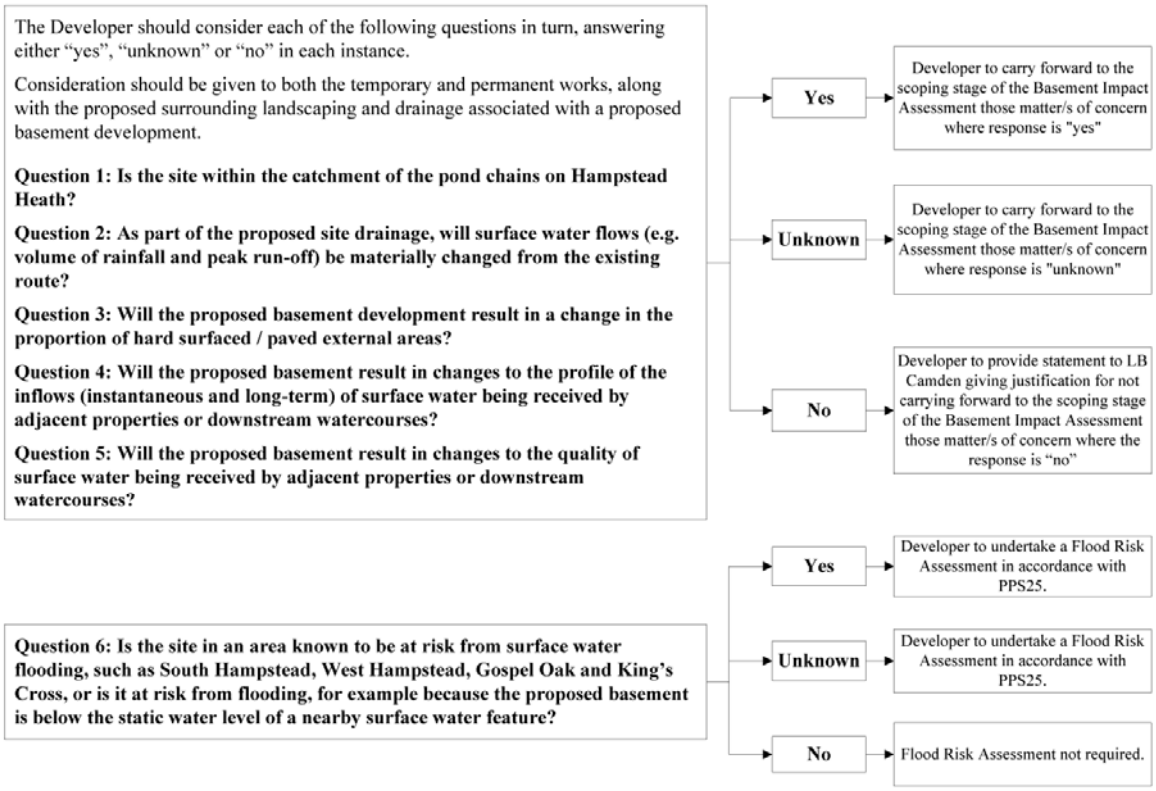
Notes / sources of information

Question 1, 3 & 4: The current surface slope can be determined by a site topographical survey. Slopes may be estimated from 1:25,000 OS maps, however in many urban areas such maps will not show sufficient detail to determine surface slopes on a property-by-property scale, just overall trends. With regard to slopes associated with infrastructure, e.g. cuttings, it should be ensured that any works do not impact on critical infrastructure.
Question 2: This will be specific to the proposed development and will be a result of the proposed landscaping of areas above and surrounding a proposed basement.
Question 5: The plan footprint of the outcropping geological strata can be established from British Geological Survey maps (e.g. 1:50,000 and 1:10,000 scale). Note that the boundaries are indicative and should be considered to be accurate to ±50m at best.
Question 6: this is a project specific determination, subject to relevant Tree Preservation Orders etc.
Question 7: this can be assessed from local knowledge and on-site observations of indicative features, such as cracking. Insurance firms may also give guidance, based on post code. Soil maps can be used to identify high-risk soil types. Relevant guidance is presented in BRE Digest 298 "Low-rise building foundations: the influence of trees in clay soils" (1999); BRE Digest 240 "Low-rise buildings on shrinkable clay soils: part 1" (1993); and BRE Digest 251 "Assessment of damage in low-rise buildings" (1995).
Question 8: Watercourses or spring lines may be identified from the following sources:

- Local knowledge and/or site walkovers
- Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). If features are marked (they are not always) the following symbol may be present "Spr"; water is indicated by blue colouration. (check the key on the map being used)
- Geological maps will show indicative geological strata boundaries which are where springs may form at the ground surface; of relevance are the boundary between the Bagshot Formation with the Claygate Member and the Claygate Member with the London Clay. Note that the boundaries are indicative should be considered to be accurate to ±50m at best. British Geological Survey maps (e.g. 1:10,000 scale, current and earlier editions).
- Aerial photographs
- "Lost Rivers of London" by Nicolas Barton, 1962. Shows the alignment of rivers in London and their tributaries.

Question 9: Worked ground includes, for example, old pits, brickyards, cuttings etc. Information can be gained from local knowledge and/or site walkovers, and from historical Ordnance Survey maps (at 1:25,000 or 1:10,000 scale, or better) and British Geological Survey maps (at 1:10,000 scale, current and earlier editions). Earlier geological maps (e.g. the 1:10560 scale series from the 1920s) include annotated descriptions such as "old pits", "formerly dug", "brickyard" etc.
Question 10: In LB Camden, all areas where the London Clay does not outcrop at the surface are considered to be an aquifer. This includes the River Terrace Deposits, the Claygate Member and the Bagshot Formation. The general footprint of the geological strata can be assessed from British Geological Survey maps (e.g. 1:50,000 and 1:10,000 scale). Note that the boundaries are indicative and should be considered to be accurate to ±50m at best.
The Environment Agency (EA) Aquifer Designation Maps can be used to identify aquifers. These are available from the EA website (www.environment-agency.gov.uk), by clicking on 'At home & leisure' > 'What's in Your Backyard' > 'Interactive Maps' > 'Groundwater'.
Details are required of the thickness of the geological strata present and the level or depth of the groundwater table. This may be known from existing information (for example nearby site investigations); however, it may not be known in the early stages of a project. Determination of the water table level may form part of the site investigation phase of a BIA and may require specialist advice to answer. Depth of proposed development is project specific.
Question 11: From local knowledge and/or site walkovers, and from Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). In relation to the stability and integrity of the pond structures and dams, the guidance of a Panel Engineer should be sought. (Details of Panel Engineers can be found on the Environment Agency website: http://www.environment-agency.gov.uk/business/sectors/64253.aspx). Duty of care needs to be undertaken during any site works in the vicinity of the ponds.
Question 12: From local knowledge and/or site walkovers, and from Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). Any works should not impact on critical infrastructure.
Question 13: From local knowledge and/or site walkovers. May find some details on neighbouring properties from searches of LB Council databases, e.g. planning applications and/or building control records.
Question 14: From local knowledge and/or site walkovers, from Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale) and directly from those responsible for tunnels (e.g. TfL or Network Rail). Any works should not impact on critical infrastructure.

Figure 3. Surface flow and flooding screening flowchart



Notes / sources of information

Question 1: Figure 14 in the attached study (prepared using data supplied by the City of London Corporation's hydrology consultant, Haycocks Associates) shows the catchment areas of the pond chains on Hampstead Heath

Question 2: This will be specific to the proposed development and will be a result of the proposed landscaping of areas above and surrounding a proposed basement. The developer should provide documentation of discussion with Thames Water to confirm that the sewers have capacity to receive any increased wastewater flows.

Question 3: This will be specific to the proposed development and will be a result of the chosen drainage scheme adopted for the property

Question 4: This will be specific to the proposed development and will be a result of the proposed landscaping and chosen drainage scheme adopted for the property. SUDS will be required to compensate any increases in peak flow.

Question 5: This will be specific to the proposed development and will be a result of the proposed landscaping and chosen drainage scheme adopted for the property. SUDS will be required to compensate any increases in peak flow.

Question 6: The principles outlined in PPS25 should be followed to ensure that flood risk is not increased.

APPENDIX E

CGL borehole logs

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH1**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	04-04-14 07-04-14	73.83	E 527,515.0 N 185,342.0	
Client				Sheet
Pegasus Life Ltd				1 of 3

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
0.20-0.50 0.30	B1 ES24			72.93		(0.90) 0.90	Paving slab over dark brown sandy very clayey fine to coarse subrounded to subangular gravel of brick. Sand is fine to coarse. Occasional cobble of brick. [MADE GROUND]	
1.00	D2			72.33		(0.60) 1.50	Soft to firm dark orange brown slightly silty CLAY with occasional fine to coarse subangular to angular gravel of flint. [HEAD DEPOSITS]	
1.50		N6					Firm, becoming stiff, dark orange brown slightly silty CLAY. Occasional selenite crystals noted. [WEATHERED LONDON CLAY FORMATION] 1.50 - 3.00 Occasional partings of light orange fine to medium sand noted.	
2.00 2.25 2.50-3.00	ES25 D4 U100	14 blows						
3.25 3.50	D6	N9						
4.25 4.50-5.10 4.50	D8 U100	18 blows 82						
5.70 6.00	D10	N15				(9.30)		
7.00 7.50-7.95	D12 U100	30 blows						
8.10 8.10 8.50	D14 D15	93						
9.00		N20						
10.00	D17							

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. No groundwater encountered.

3. Installation details; 0.0-1.2mbgl: plain pipe with bentonite backfill, 1.2-20.0mbgl: slotted pipe with gravel backfill, 20.0-21.0mbgl: bentonite backfill, 21.0-30.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	JJM	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH1**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	04-04-14 07-04-14	73.83	E 527,515.0 N 185,342.0	
Client				Sheet
Pegasus Life Ltd				2 of 3

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
10.50-10.95	U100	32 blows		63.03		10.80		
11.00	D19						Stiff to very stiff closely fissured dark grey brown silty CLAY. Frequent fine selenite crystals noted. [LONDON CLAY FORMATION]	
11.50	D20							
12.00		N18						
13.00	D22							
13.50-13.95	U100	26 blows						
14.00	D24							
14.00		97						
14.50	D25							
15.00		N18						
16.00	D27							
16.50-16.95	U100	31 blows						
17.00	D29							
17.50	D30							
18.00		N28						
19.00	D32						19.00 Occasional coarse selenite crystals.	
19.50-19.95	U100	30 blows						
20.00	D34						20.00 Becoming very stiff.	
20.00		100						
20.50	D35					(19.65)		

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. No groundwater encountered.

3. Installation details; 0.0-1.2mbgl: plain pipe with bentonite backfill, 1.2-20.0mbgl: slotted pipe with gravel backfill, 20.0-21.0mbgl: bentonite backfill, 21.0-30.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	JJM	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH1**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	04-04-14 07-04-14	73.83	E 527,515.0 N 185,342.0	
Client				Sheet
Pegasus Life Ltd				3 of 3

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
21.00		N32					Stiff to very stiff closely fissured dark grey brown silty CLAY. Frequent fine selenite crystals noted. [LONDON CLAY FORMATION] *(continued)*	
22.00	D37							
22.50-22.95	U100	57 blows						
23.00	D39							
23.50	D40							
24.00		N41						
25.00	D42							
25.50-25.95	U100	52 blows						
26.00	D44							
26.50	D45							
27.00		N43						
28.00	D47							
28.50-28.95	U100	52 blows						
29.00	D49							
29.50-30.45	D50							
30.00		N43		43.38		30.45	*(Borehole terminated at 30.45m)*	

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. No groundwater encountered.

3. Installation details; 0.0-1.2mbgl: plain pipe with bentonite backfill, 1.2-20.0mbgl: slotted pipe with gravel backfill, 20.0-21.0mbgl: bentonite backfill, 21.0-30.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	JJM	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH2**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	08-04-14	72.68	E 527,233.0 N 185,344.0	
Client				Sheet
Pegasus Life Ltd				1 of 2

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
0.30-0.50	B1						Dark brown clayey very gravelly fine to coarse sand. Gravel is fine to coarse subrounded to subangular of brick. Occasional cobble of brick. [MADE GROUND]	
0.30	ES26							
0.75	D2					(1.50)		
1.20		N12		71.18		1.50		
							Firm dark orange brown silty CLAY. Occasional fine selenite crystals. [WEATHERED LONDON CLAY FORMATION]	
2.00	D4						1.50 - 2.50 Occasional partings of light orange sand noted.	
2.20-2.65	U100	15 blows						
2.30	ES28							
2.70	D6							
3.00	D7							
3.50		N11						
4.25	D9							
4.50-4.95	U100	20 blows						
5.50	D12							
6.00		N12				(9.70)		
6.45	D11							
7.00	D14							
7.50-7.95	U100	26 blows						
8.00	D16							
8.00		79						
8.50	D17							
9.00		N21						
10.00	D19							

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. No groundwater encountered.

3. Installation details; 0.0-1.0mbgl: plain pipe with bentonite backfill, 1.0-5.0mbgl: slotted pipe with gravel backfill, 5.0-6.0mbgl: bentonite backfill, 6.0-15.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	JJM	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH2**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	08-04-14	72.68	E 527,233.0 N 185,344.0	
Client				Sheet
Pegasus Life Ltd				2 of 2

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
10.50-10.95	U100	32 blows					Firm dark orange brown silty CLAY. Occasional fine selenite crystals. [WEATHERED LONDON CLAY FORMATION] *(continued)*	
11.00	D21			61.48		11.20		
11.00		107					Stiff closely fissured dark grey brown silty clay. Frequent fine selenite crystals. [LONDON CLAY FORMATION]	
11.50	D22							
12.00		N20						
13.00	D24					(4.25)		
13.50-13.95	U100	36 blows						
14.00	D26							
14.50	D27							
15.00		N22		57.23		15.45		
							(Borehole terminated at 15.45m)	

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. No groundwater encountered.

3. Installation details; 0.0-1.0mbgl: plain pipe with bentonite backfill, 1.0-5.0mbgl: slotted pipe with gravel backfill, 5.0-6.0mbgl: bentonite backfill, 6.0-15.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	JJM	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				BH3
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	02-04-14	73.35	E 527,244.0 N 158,293.0	
Client				Sheet
Pegasus Life Ltd				1 of 2

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
0.30-0.50	B1					(0.80)	Grass over slightly sandy slightly gravelly clay with occasional rootlets. Sand is fine to medium. Gravel is fine to coarse sub rounded to angular of brick, dolomite, siltstone and flint with occasional metallic objects.	
0.30	ES27			72.55		0.80	[MADE GROUND]	
1.00	D2						Soft dark orange brown occasionally green grey slightly silty CLAY with occasional fine to coarse subangular to angular gravel of flint. [HEAD DEPOSITS]	
1.50		N8						
2.10	ES29					(2.60)		
2.25	D4							
2.50-2.95	U100	16 blows						
3.00	D6							
3.25	D7			69.95		3.40		
3.50		N14					Firm closely fissured dark orange brown CLAY with frequent fine selenite crystals [WEATHERED LONDON CLAY FORMATION]	
4.25	D9						4.25 Occasional medium to coarse angular claystone gravel.	
4.50-4.95	U100	26 blows						
5.00	D11							
5.50	D12							
6.00		N15						
						(6.40)		
7.00	D14							
7.50-7.95	U100	28 blows						
8.00	D16						8.00 Becoming dark brown.	
8.50	D17							
9.00		N22					9.00 Becoming stiff.	
				63.55		9.80		
10.00	D19						Stiff closely fissured dark grey brown CLAY with frequent fine selenite crystals. [LONDON CLAY FORMATION]	

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. No groundwater encountered.

3. Installation details; 0.0-1.0mbgl: plain pipe with bentonite backfill, 1.0-5.0mbgl: slotted pipe with gravel backfill, 5.0-6.0mbgl: bentonite backfill, 6.0-20.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	GJK	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH3**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	02-04-14	73.35	E 527,244.0 N 158,293.0	
Client				Sheet
Pegasus Life Ltd				2 of 2

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
10.50-10.95	U100	27 blows					Stiff closely fissured dark grey brown CLAY with frequent fine selenite crystals. [LONDON CLAY FORMATION] *(continued)*	
11.00	D21							
11.50	D22							
12.00		N27						
13.00	D24							
13.50-13.95	U100	30 blows						
14.50	D26							
15.00		N25				(10.65)		
16.00	D28							
16.50-16.95	U100	36 blows						
17.50	D30							
18.00		N27						
19.00	D32							
19.50-19.95	U100	36 blows						
20.00	D34							
				52.90		20.45	*(Borehole terminated at 20.45m)*	

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. No groundwater encountered.

3. Installation details; 0.0-1.0mbgl: plain pipe with bentonite backfill, 1.0-5.0mbgl: slotted pipe with gravel backfill, 5.0-6.0mbgl: bentonite backfill, 6.0-20.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	GJK	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH4**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	31-03-14	72.48	E 527,245.0 N 158,317.0	
Client				Sheet
Pegasus Life Ltd				1 of 2

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
0.00-0.45	B1						Dark red brown and black slightly clayey sand and gravel. Sand is fine to coarse. Gravel is fine to coarse, subangular to angular, brick, tarmac and siltstone. Occasional cobbles of brick. [MADE GROUND]	
0.30	ES2			72.03		0.45		
0.50	D2						Soft to firm green grey slightly silty CLAY with occasional fine to coarse subangular to angular gravel of flint. [HEAD DEPOSITS]	
1.00-14.00	D3			71.58		0.90		
1.50		N16					Firm to stiff dark orange brown slightly silty CLAY. [WEATHERED LONDON CLAY FORMATION]	
2.30-2.50	D5		1				2.35 Thin band of weak mudstone.	
2.50-3.00	U100	11 blows No recovery.						
2.60	ES28							
3.00-3.45	U100	13 blows 53						
3.00								
3.50	D8							
4.00	D9							
4.50		N21					4.50 Becoming stiff.	
5.50	D11					(9.10)		
6.00-6.45	U100	21 blows						
7.00	D13							
7.50		N22						
8.00		58						
8.50	D15							
9.00-9.45	U100	25 blows						
9.50	D17							
10.00	D18			62.48		10.00	Stiff dark grey brown silty CLAY. Frequent fine selenite crystals noted. [LONDON CLAY FORMATION]	

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth
	Seepage	2.35			

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. Groundwater seepage noted from the claystone band (2.35mbgl) and band of silty sand (18.7-18.9mbgl).

3. Installation details; 0.0-1.2mbgl: plain pipe with bentonite backfill, 1.2-20.0mbgl: slotted pipe with gravel backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	JJM	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH4**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	31-03-14	72.48	E 527,245.0 N 158,317.0	
Client				Sheet
Pegasus Life Ltd				2 of 2

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
10.50		N26					Stiff dark grey brown silty CLAY. Frequent fine selenite crystals noted. [LONDON CLAY FORMATION] *(continued)*	
11.00		93						
11.50	D20							
12.00-12.45	U100	32 blows						
12.50	D22							
12.50		103						
13.00	D23							
13.00		91						
13.50		N21						
14.50	D25							
15.00-15.45	U100	40 blows				(10.45)		
15.50	D27							
15.50		110						
16.00	D28							
16.50		N6						
17.00		103						
17.50	D30							
18.00-18.45	U100	38 blows						
			2				18.70 - 18.90 Grey silty sand (driller description).	
19.00	D32							
19.00-19.45	D33							
19.50		N27						
20.00	D35							
				52.03		20.45		
							(Borehole terminated at 20.45m)	

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth
	Seepage	18.70			

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. Groundwater seepage noted from the claystone band (2.35mbgl) and band of silty sand (18.7-18.9mbgl).

3. Installation details; 0.0-1.2mbgl: plain pipe with bentonite backfill, 1.2-20.0mbgl: slotted pipe with gravel backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	JJM	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH5**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	03-04-14	73.77	E 527,229.0 N 185,299.0	
Client				Sheet
Pegasus Life Ltd				1 of 3

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
0.30-0.50 0.30	B1 ES23/01					(1.00)	Grass over firm dark orange brown slightly sandy slightly gravelly clay. Sand is fine. Gravel is fine to medium and occasionally coarse sub angular to angular of brick, concrete and flint. Occasional cobbles of brick and concrete.	
				72.77		1.00	[MADE GROUND]	
1.00	D2						Soft to firm dark orange brown slightly sandy slightly gravelly silty CLAY. Sand is fine. Gravel is fine to medium subangular to subrounded to flint and mudstone with occasional fine selenite crystals. Occasionally mottled green grey.	
1.50		N7					[HEAD DEPOSITS]	
						(2.20)		
2.25 2.25 2.50-2.95	D4 ES23/02 U100	12 blows						
3.00	D6			70.57		3.20		
3.25	D7						Firm to stiff closely fissured dark orange brown CLAY with frequent fine selenite crystals.	
3.50		N13					[WEATHERED LONDON CLAY FORMATION]	
4.25	D9							
4.50-4.95	U100	21 blows						
5.00	D11		1					
5.40-5.70	D12						5.40 - 5.70 Weak claystone band.	
6.00		N15						
						(6.60)		
7.00	D14							
7.50-7.95	U100	19 blows						
8.00	D16							
8.50	D17							
9.00		N21					9.00 Becoming stiff.	
				63.97		9.80		
10.00	D19						Stiff closely fissured dark grey brown silty CLAY with frequent fine selenite crystals. [LONDON CLAY FORMATION]	

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth
	Seepage	5.40			

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. Groundwater seepage noted from the claystone bands (5.4-5.7mbgl, 17.3-17.5mbgl and 27.2-27.4mbgl).

3. Installation details; 0.0-1.2mbgl: plain pipe with bentonite backfill, 1.2-20.0mbgl: slotted pipe with gravel backfill, 20.0-21.0: bentonite backfill, 21.0-30.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	GJK	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH5**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	03-04-14	73.77	E 527,229.0 N 185,299.0	
Client				Sheet
Pegasus Life Ltd				2 of 3

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
10.50-10.95	U100	28 blows					Stiff closely fissured dark grey brown silty CLAY with frequent fine selenite crystals. [LONDON CLAY FORMATION] *(continued)*	
11.00	D21							
11.50	D22							
12.00		N22						
13.00	D24							
13.50-13.95	U100	32 blows						
14.00	D26							
14.50-15.45	D27							
15.00		N26						
16.00-16.95	D29							
16.50-17.00	U100	27 blows						
17.30-17.50	D31		2				17.30 - 17.50 Claystone band.	
18.00		N33						
19.00	D33							
19.50-19.95	U100	33 blows						
20.00	D35					(20.65)		
20.50	D36							

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth
	Seepage	17.30			

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. Groundwater seepage noted from the claystone bands (5.4-5.7mbgl, 17.3-17.5mbgl and 27.2-27.4mbgl).

3. Installation details; 0.0-1.2mbgl: plain pipe with bentonite backfill, 1.2-20.0mbgl: slotted pipe with gravel backfill, 20.0-21.0: bentonite backfill, 21.0-30.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	GJK	RJB

BOREHOLE LOG

Project				BOREHOLE No
Bartram's Convent, Hampstead				**BH5**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	03-04-14	73.77	E 527,229.0 N 185,299.0	
Client				Sheet
Pegasus Life Ltd				3 of 3

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
21.00		N31					Stiff closely fissured dark grey brown silty CLAY with frequent fine selenite crystals. [LONDON CLAY FORMATION] *(continued)*	
22.00	D38							
22.50-22.95	U100	30 blows						
23.00	D40							
23.50	D41							
24.00		N36					24.00 Becoming very stiff.	
25.00	D43							
25.50-25.95	U100	34 blows						
26.00	D45							
26.50	D46							
27.00		N43	3				27.20 - 27.40 Claystone band.	
28.00	D48							
28.50-28.95	U100	40 blows						
29.00	D50							
29.50	D41							
30.00		N40		43.32		30.45	*(Borehole terminated at 30.45m)*	

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth
	Seepage	27.20			

General Remarks

1. ES = environmental sample, D = small disturbed sample, B = bulk sample, SPT 'N' = Standard Penetration Test 'N' value.

2. Groundwater seepage noted from the claystone bands (5.4-5.7mbgl, 17.3-17.5mbgl and 27.2-27.4mbgl).

3. Installation details; 0.0-1.2mbgl: plain pipe with bentonite backfill, 1.2-20.0mbgl: slotted pipe with gravel backfill, 20.0-21.0: bentonite backfill, 21.0-30.45mbgl: arisings backfill. Gas tap, bung and flush cover installed.

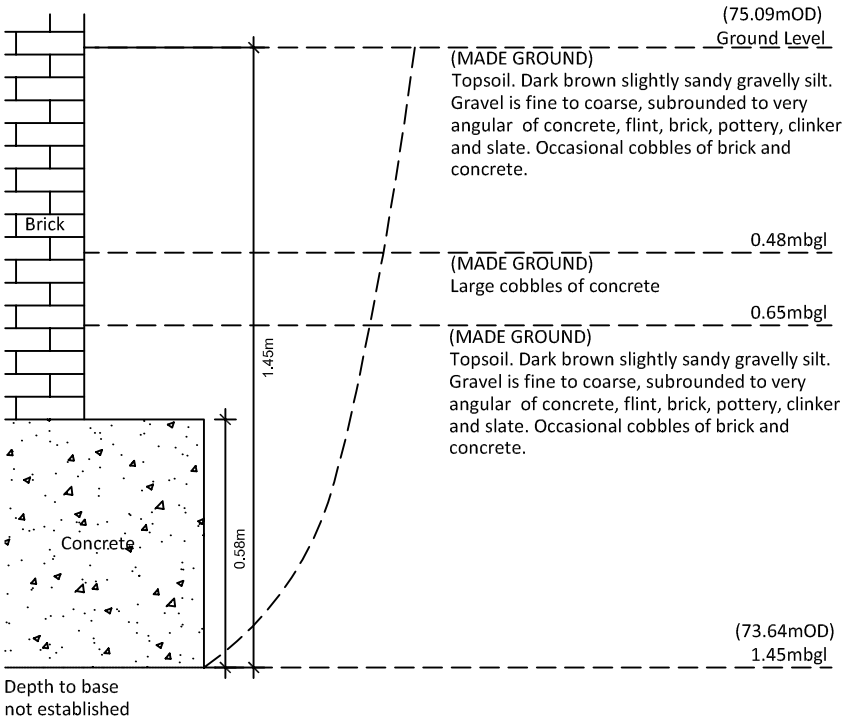
Method/ Plant Used	Field Crew	Logged By	Checked By
Pilcon 1 Ton	GWD	GJK	RJB

APPENDIX F

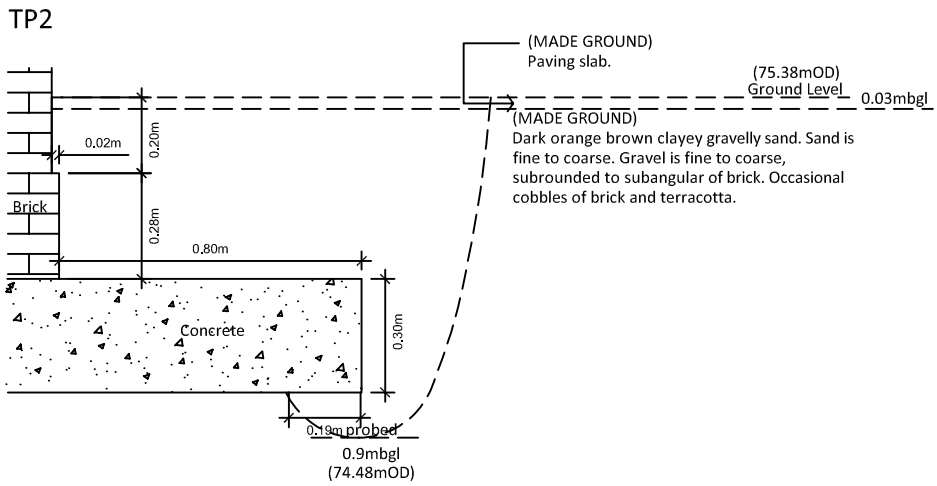
CGL foundation inspection

details and logs

TP1

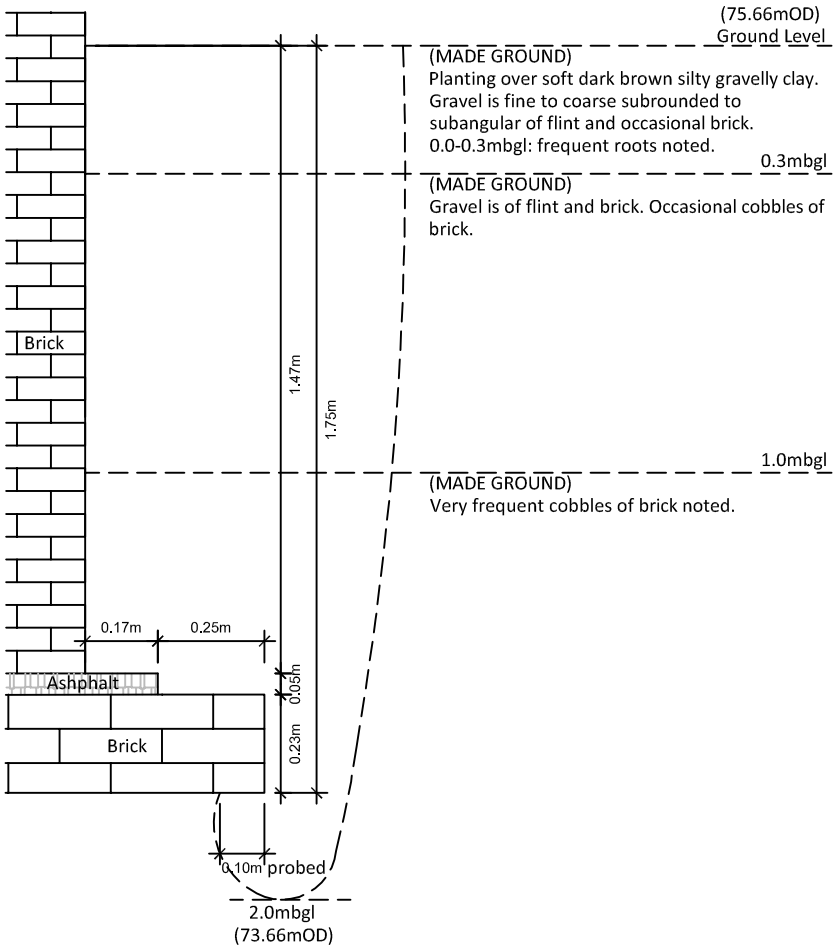


Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP1**	



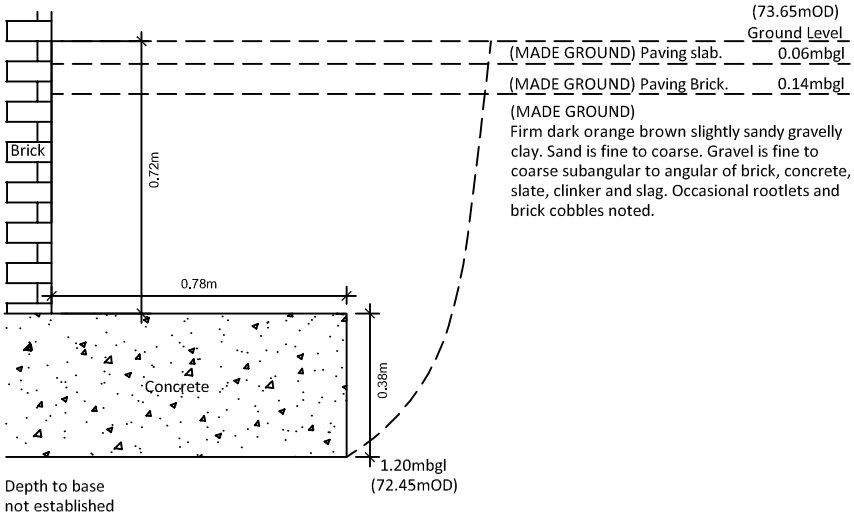
Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP2**	

TP3



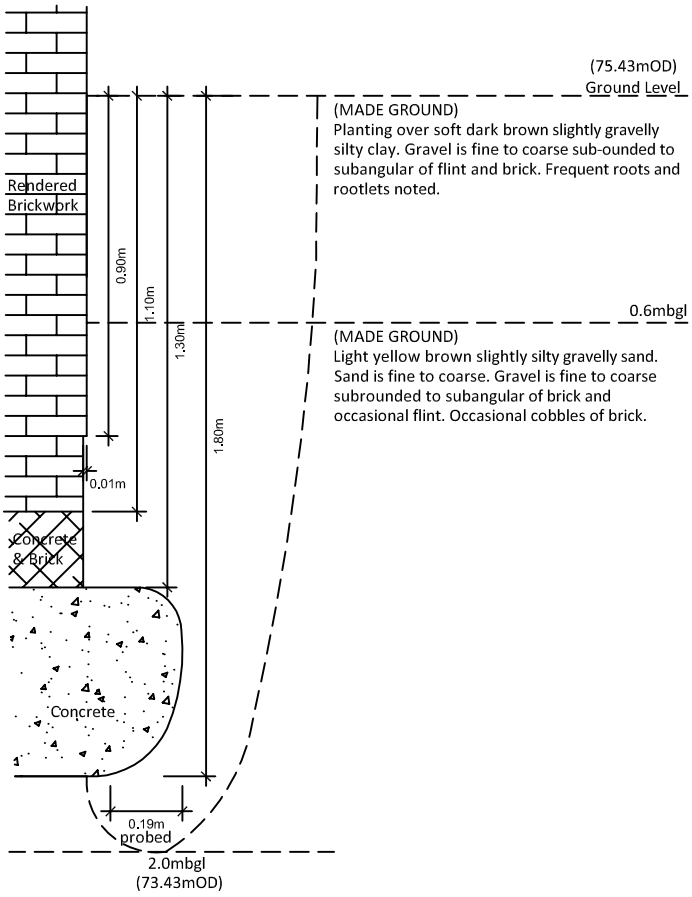
Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP3**	

TP3a



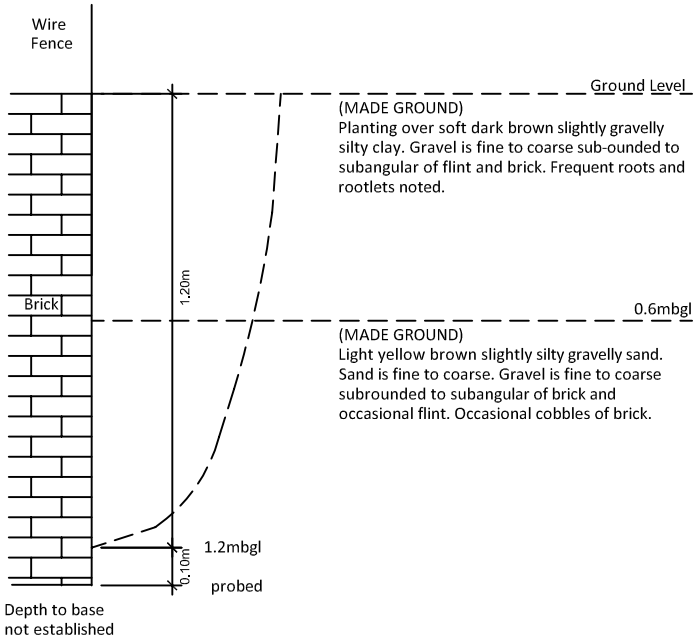
Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP3a**	

TP4
Side A (south-west side)



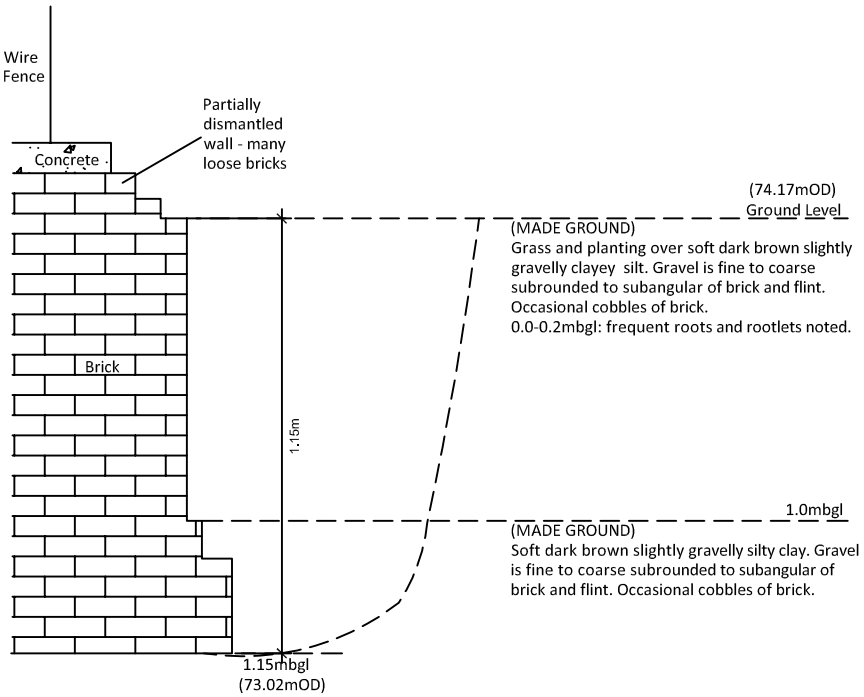
Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP4 Side A**	

TP4
Side B (south-east side)



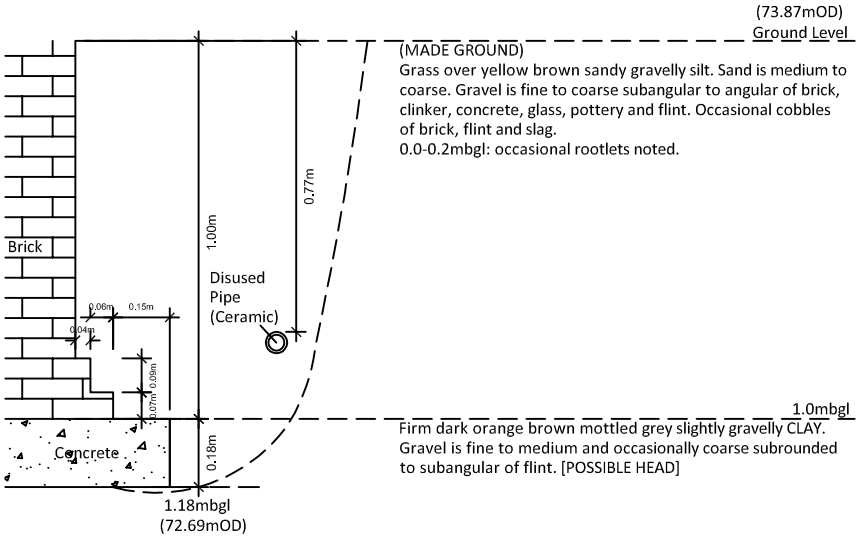
Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP4 Side B**	

TP5a



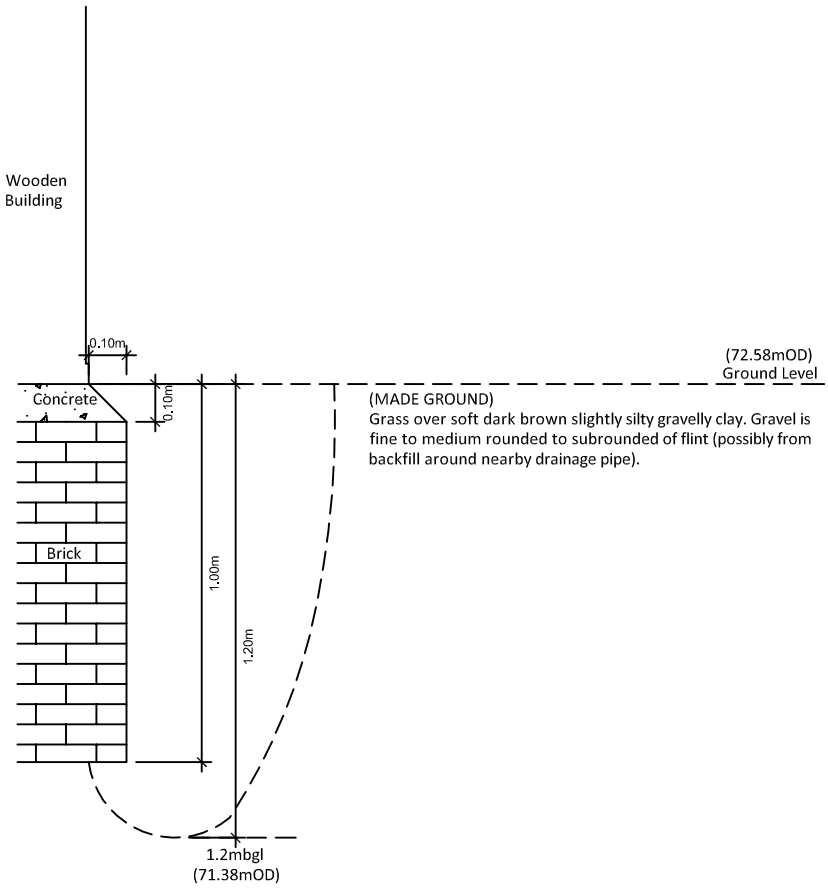
Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP5a**	

TP5b

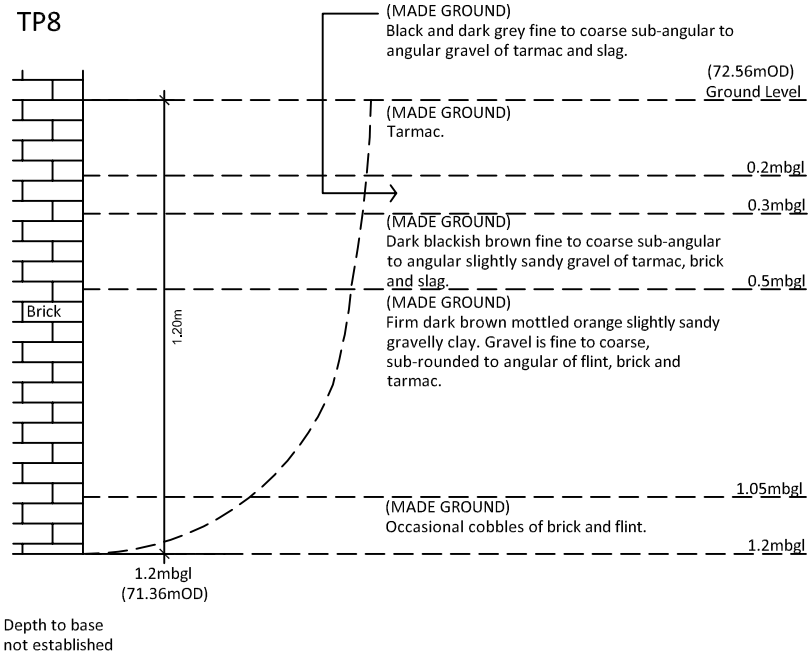


Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP5b**	

TP7

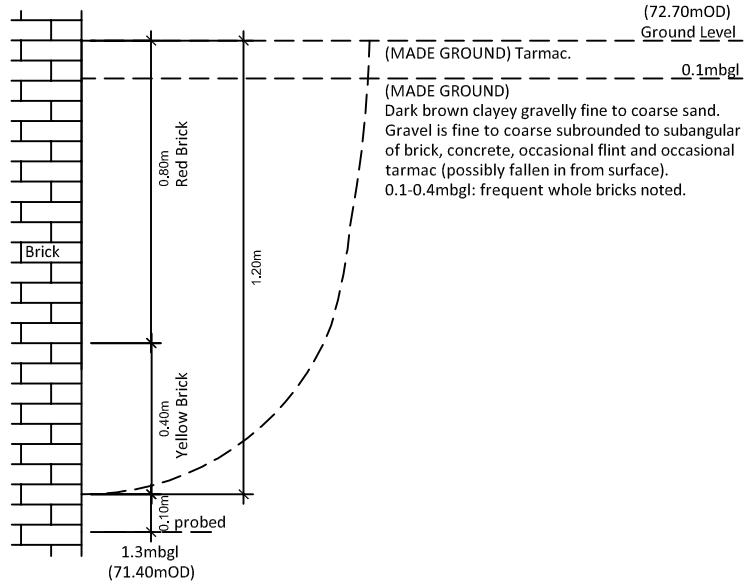


Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP7**	



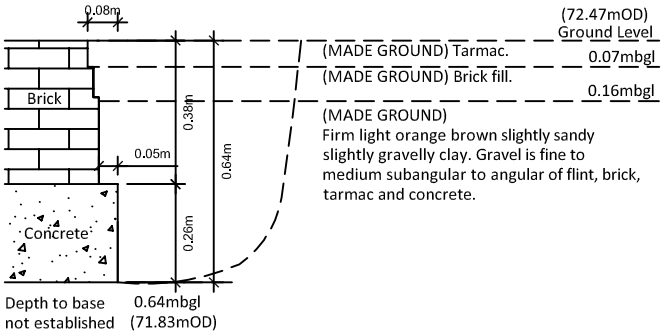
Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP8**	

TP9



Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP9**	

TP10



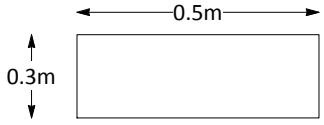
Client	Project	Job No
Pegasus Life Ltd	**Bartram's Convent, Hampstead**	**CG/08753**
CGL	Title: **Foundation Inspection Pit TP10**	

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP1**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	31-03-14	75.09	E 527,205.0 N 185,341.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
0.30	ES1						Dark brown slightly sandy gravelly silt. Gravel is fine to coarse, subrounded to angular of concrete, flint, brick, pottery, clinker and slate. Occasional cobbles of brick and concrete. [MADE GROUND]
							0.48 - 0.65 Large cobble of concrete.
						(1.45)	
				73.64		1.45	
							(Pit terminated at 1.45m)

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

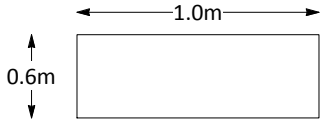
Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	GJK	RJB

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP2**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	31-03-14	75.38	E 572,198.0 N 185,328.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
0.30	ES50			74.48		(0.90) 0.90	Paving slab over dark orange brown clayey gravelly sand. Sand is fine to coarse. Gravel is fine to coarse subrounded to subangular of brick. Occasional cobbles of brick and terracotta. [MADE GROUND]
							(Pit terminated at 0.9m)

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

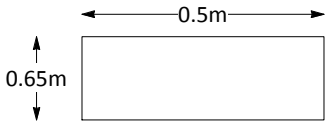
Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	JJM	RJB

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP3**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	08-04-14	75.66	E 527,203.0 N 185,309.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
							Planting over soft dark brown silty gravelly clay. Gravel is fine to coarse subrounded to subangular of flint and occasional brick. [MADE GROUND] 0.00 - 0.20 Frequent rootlets noted.
0.20	ES11						
0.30	ES21/01						0.30 Gravel is of flint and brick with occasional cobbles of brick.
0.50	ES12						
1.00	ES21/02					(2.00)	1.00 Very frequent cobbles of brick.
				73.66		2.00	*(Pit terminated at 2m)*

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

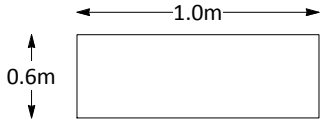
Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	GJK	RJB

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP3a**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	31-03-14	73.65	E 527,212.0 N 185,317.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
0.30	ES53			72.45		(1.20) 1.20	Paving slab and brickwork over firm dark orange brown slightly sandy very gravelly clay. Sand is fine to coarse. Gravel is fine to coarse subangular to angular of brick, concrete, slate, clinker and slag. Occasional cobbles of brick and rootlets noted. [MADE GROUND]
							(Pit terminated at 1.2m)

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

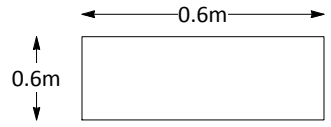
Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	GJK	RJB

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP4**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	07-04-14	75.43	E 527,211.0 N 185,296.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
							Planting over soft dark brown slightly gravelly silty clay. Gravel is fine to coarse, subrounded to subangular of flint and brick. Frequent roots and rootlets noted. [MADE GROUND]
0.30	ES13					(0.60)	
0.30	ES20/01						
				74.83		0.60	
0.60	ES20/02						Light yellow brown slightly silty gravelly fine to coarse sand. Gravel is fine to coarse subrounded to subangular of brick and occasional flint. Occasional cobbles of brick. [MADE GROUND]
1.00	ES14					(1.40)	
1.70	ES20/03						
				73.43		2.00	
2.00	ES20/04						*(Pit terminated at 2m)*

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

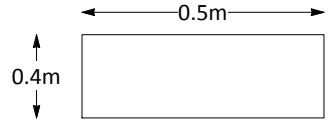
Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	GJK	RJB

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP5a**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	01-04-14	74.17	E 527,228.0 N 185,292.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
0.20	ES10					(1.15)	Grass and planting over soft dark brown slightly gravelly clayey silt. Gravel is fine to coarse subrounded to subangular of brick and flint. Occaisonal cobbles of brick. [MADE GROUND] 0.00 - 0.20 Frequent roots and rootlets. 1.00 Becoming silty clay.
				73.02		1.15	*(Pit terminated at 1.15m)*

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	JJM	RJB

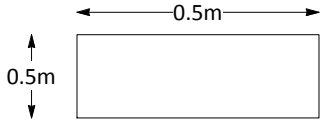
CGL TP LOG CG08753.GPJ GINT STD AGS 3_1.GDT 11/9/14

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP5b**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	31-03-14	73.87	E 527,232.0 N 185,289.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
0.20	ES51					(1.00)	Grass over sandy gravelly silt. Sand is medium to coarse. Gravel is fine to coarse subangular to angular of brick, flint, pottery, glass, slag and claystone. Occasional cobbles of brick, flint and slag. [MADE GROUND]
				72.87		1.00	
						(0.18)	Firm dark orange brown mottled grey slightly gravelly clay. Gravel is fine to medium subrounded to subangular of flint. [MADE GROUND]
				72.69		1.18	
							(Pit terminated at 1.18m)

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

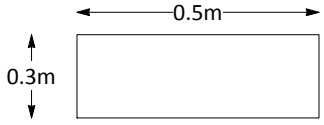
Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	GJK	RJB

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP7**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	31-03-14	72.58	E 527,255.0 N 185,292.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
0.40	ES54			71.38		(1.20) 1.20	Grass over soft dark brown slightly silty gravelly clay. Gravel is fine to medium, rounded to subrounded of flint (possibly from backfill around nearby drainage pipe) [MADE GROUND]
							(Pit terminated at 1.2m)

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

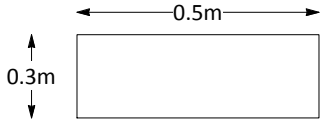
Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	JJM	RJB

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP8**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	07-04-14	72.56	E 527,245.0 N 185,332.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
						(0.50)	Tarmac over dark black brown slightly sandy fine to coarse subangular to angular gravel of tarmac, brick and slag. Occasional cobbles of brick. [MADE GROUND]
				72.06		0.50	
						(0.55)	Dark brown mottled orange slightly sandy very clayey fine to coarse subrounded to subangular gravel of flint, brick and tarmac. [MADE GROUND]
				71.51		1.05	
						(0.15)	Dark brown slightly sandy clayey fine to coarse subrounded to angular gravel of flint and brick. Occasional cobbels of flint. [MADE GROUND]
				71.36		1.20	1.05 Occasional cobbles of brick and flint.
							(Pit terminated at 1.2m)

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

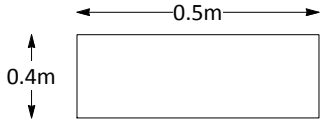
Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	GJK	RJB

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP9**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	01-04-14	72.70	E 527,239.0 N 185,344.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
0.60	ES15			71.40		(1.30) 1.30	Tarmac over dark brown clayey gravelly fine to coarse sand. Gravel is fine to coarse subrounded to subangular of brick, concrete, flint and occasional tarmac (possibly fallen in from surface). [MADE GROUND] 0.10 - 0.40 Frequent whole bricks noted.
							(Pit terminated at 1.3m)

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

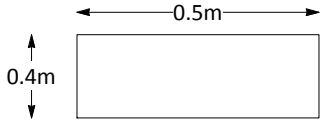
Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	JJM	RJB

TRIAL PIT LOG

Project				TRIAL PIT No
Bartram's Convent, Hampstead				**TP10**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/08753	01-04-14	72.47	E 527,234.0 N 185,324.0	
Client				Sheet
Pegasus Life Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION
0.20	ES51			71.83		(0.64) 0.64	Tarmac and brick fill over firm light orange brown slightly sandy slightly gravelly clay. Gravel is fine to coarse subangular to angular of flint, brick, tarmac and concrete. [MADE GROUND]
							(Pit terminated at 0.64m)

Plan



Stability:

General Remarks

1. ES = environmental sample
2. No groundwater encountered.
3. Pit backfilled with arisings

Method/ Plant Used	Field Crew	Logged By	Checked By
Hand excavated	GWD	GJK	RJB

APPENDIX G

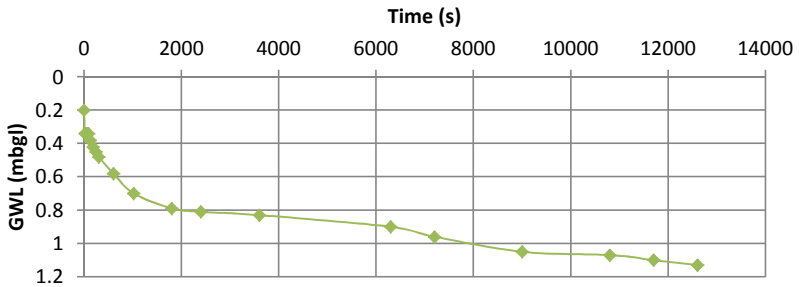
Ground gas and groundwater monitoring

record and falling head test record.

Falling Head Test - BH3

Bartram's Convent, Hampstead
CG/08753
17/04/2014

Time (mins)	Time(s)	Depth (m)	H (m)	H/Ho
0	0	0.2	4.76	1
0.25	15	0.34	4.62	0.970588235
0.5	30	0.34	4.62	0.970588235
0.75	45	0.34	4.62	0.970588235
1	60	0.34	4.62	0.970588235
1.5	90	0.34	4.62	0.970588235
2	120	0.38	4.58	0.962184874
3	180	0.42	4.54	0.953781513
4	240	0.45	4.51	0.947478992
5	300	0.48	4.48	0.941176471
10	600	0.58	4.38	0.920168067
17	1020	0.7	4.26	0.894957983
30	1800	0.79	4.17	0.87605042
40	2400	0.81	4.15	0.871848739
60	3600	0.83	4.13	0.867647059
105	6300	0.9	4.06	0.852941176
120	7200	0.96	4	0.840336134
150	9000	1.05	3.91	0.821428571
180	10800	1.07	3.89	0.817226891
195	11700	1.1	3.86	0.81092437
210	12600	1.13	3.83	0.804621849



General Approach (After Horvslev 1951)

Initial GW depth	0.2	mbgl
Well depth	4.96	mbgl
Well pipe diameter	50	mm
F	0.1375	intake Factor - Fig 6 BS5930
D	0.05	m - Diameter of standpipe
H1	4.76	m
H2	3.83	m
t1	0	s
t2	12600	s
A	0.001963495	m2

$$k = \frac{A}{F(t_2 - t_1)} \ln \frac{H_1}{H_2}$$

k = **2.46367E-07** **m/s**

GAS MONITORING RECORD SHEET

JOB DETAILS			
Site:	Bartram's Convent	Job No:	CG/08753
Date:	16/04/2014	Engineer:	JJM
Time:	0700	Client	Pegasus Life Ltd

METEOROLOGICAL & SITE INFORMATION

State of ground:	Dry	X	Moist		Wet				
Wind:	Calm		Light	X	Moderate		Strong		
Cloud cover:	None	X	Slight		Cloudy		Overcast		
Precipitation:	None	X	Slight		Moderate		Heavy		
Barometric pressure (mb):	1020-1021		Local pressure system*:	Rising			Air temperature (°C):	6.6-16.0	

Well No.	Time (s)	Flow (l/hr)	dA (PA)	O_2 (% vol. in air)	CO_2 (% vol. in air)	CH_4 (% vol. in air)	PID (ppm)	Depth to GW (mbgl)	Comments
BH1	0	0.0	0.0	18.9	0.1	0.1	4.1	DRY	
	15	0.0	0.0	19.5	0.4	0.1			Base of well at 20.2mbgl
	30	0.0	0.0	19.4	0.5	0.1			
	45	0.0	0.0	19.3	0.5	0.1			
	60	0.0	0.0	19.3	0.5	0.1			
	90	0.0	0.0	19.2	0.5	0.1			
	120	0.0	0.0	19.2	0.5	0.1			
	150	0.0	0.0	19.2	0.5	0.1			
	180			19.2	0.5	0.1			
	240								
	300								
BH2	0	0.0	0.0	19.6	0.1	0.1	7.3	1.45	
	15	0.0	0.0	19.6	0.1	0.1			Base of well at 5.01mbgl
	30	0.0	0.0	19.5	0.1	0.1			
	45	0.0	0.0	19.4	0.2	0.1			
	60	0.0	0.0	19.4	0.2	0.1			
	90	0.0	0.0	19.4	0.2	0.1			
	120	0.0	0.0	19.4	0.2	0.1			
	150	0.0	0.0	19.4	0.2	0.1			
	180			19.4	0.2	0.1			
	240								
	300								
BH3	0	0.0	0.0	19.1	0.2	0.1	4.0	DRY	
	15	0.0	0.0	17.8	1.7	0.1			Base of well at 4.96mbgl
	30	0.0	0.0	17.4	1.8	0.1			
	45	0.0	0.0	17.3	1.8	0.1			
	60	0.0	0.0	17.3	1.8	0.1			
	90	0.0	0.0	17.3	1.8	0.1			
	120	0.0	0.0	17.3	1.8	0.1			
	150	0.0	0.0	17.3	1.8	0.1			
	180			17.3	1.8	0.1			
	240								
	300								
BH4	0	0.0	0.0	18.5	3.4	0.1	1.2	19.64	Base of well at
	15	0.0	0.0	18.5	1.9	0.1			20.02mbgl
	30	0.0	0.0	18.5	1.9	0.1			
	45	0.0	0.0	18.4	1.9	0.1			
	60	0.0	0.0	18.4	1.9	0.1			
	90	0.0	0.0	18.4	1.9	0.1			
	120	0.0	0.0	18.4	1.9	0.1			
	150			18.4	1.9	0.1			
	180			18.4	1.9	0.1			
	240								
	300								
BH5	0	0.0	0.0	18.3	1.7	0.1	1.0	17.56	Base of well at
	15	0.0	0.0	17.8	1.2	0.1			20.32mbgl
	30	0.0	0.0	17.7	1.2	0.1			
	45	0.0	0.0	17.7	1.2	0.1			
	60	0.0	0.0	17.7	1.2	0.1			
	90	0.0	0.0	17.7	1.2	0.1			
	120	0.0	0.0	17.7	1.2	0.1			
	150			17.7	1.2	0.1			
	180								
	240								
	300								

Notes:

The measurement of hydrogen sulphide and hydrocarbon free product is undertaken on a site specific basis, if deemed necessary.
** With reference to the Met Office rolling weather archive for* Northolt *weather station.*

GAS MONITORING RECORD SHEET

JOB DETAILS			
Site:	Bartram's Convent	Job No:	CG/08753
Date:	16/04/2014	Engineer:	JJM
Time:	0700	Client	Pegasus Life Ltd

METEOROLOGICAL & SITE INFORMATION

State of ground:	Dry	X	Moist		Wet				
Wind:	Calm		Light	X	Moderate		Strong		
Cloud cover:	None	X	Slight		Cloudy		Overcast		
Precipitation:	None	X	Slight		Moderate		Heavy		
Barometric pressure (mb):	1020-1021		Local pressure system*:		Rising		Air temperature (°C):	6.6-16.0	

Well No.	Time (s)	Flow (l/hr)	dA (PA)	O_2 (% vol. in air)	CO_2 (% vol. in air)	CH_4 (% vol. in air)	PID (ppm)	Depth to GW (mbgl)	Comments
EBH1 (front)	0	0.0	0.0	19.1	0.5	0.1	4.1	DRY	Base of well at 1.5mbgl
	15	0.0	0.0	19.9	0.1	0.1			
	30	0.0	0.0	19.9	0.1	0.1			
	45	0.0	0.0	19.9	0.1	0.1			
	60	0.0	0.0	19.9	0.1	0.1			
	90	0.0	0.0	19.8	0.1	0.1			
	120	0.0	0.0	19.8	0.1	0.1			
	150			19.8	0.1	0.1			
	180								
	240								
	300								
EBH2 (rear)	0	0.0	0.0	18.9	1.3	0.1	0.7	1.04	Base of well at 2.62mbgl
	15	0.0	0.0	18.2	3.4	0.1			
	30	0.0	0.0	18.1	3.6	0.1			
	45	0.0	0.0	18.1	3.6	0.1			
	60	0.0	0.0	18.0	3.6	0.1			
	90	0.0	0.0	18.0	3.6	0.1			
	120	0.0	0.0	18.0	3.6	0.1			
	150			18.0	3.6	0.1			
	180								
	240								
	300								

Notes:

The measurement of hydrogen sulphide and hydrocarbon free product is undertaken on a site specific basis, if deemed necessary.
** With reference to the Met Office rolling weather archive for* Northolt *weather station.*

GROUNDWATER MONITORING RECORD SHEET

JOB DETAILS			
Site:	Bartram's Convent	Job No:	CG/08753
Date:	16/04/2014	Engineer:	JJM
Time:	0700	Client	Pegasus Life Ltd
Weather:			

MONITORING & SAMPLING DETAILS								
Well / Borehole reference:	BH2	BH5						
Monitoring details								
Ground elevation (+mOD)								
Groundwater depth (mbgl)	1.45	17.56						
Groundwater elevation (+mOD)								
Depth to base of well (mbgl)	5.01	20.32						
Diameter of well (m)	0.05	0.05						
Condition of well	Good	Good						
Top of response zone (mbgl)								
Base of response zone (mbgl)								
Free product thickness (m)								
Hydrocarbon sheen noted (Y/N)	N	N						
Purging details								
Purge method	Bailer	Bailer						
Purged volume (litres)	21	12						
Recharge (good / poor)	Good	Poor						
Sampling details								
Sampling method	Bailer	Bailer						
Volume of water sample taken (litres)								
Volume of free product sample taken (litres)								
Colour / odours noted*	Light brown	Light brown						
In-situ measurements								
pH	7.6	6.9						
Temperature (^{o}C)	8.7	15.6						
Dissolved oxygen (mg/l)	1020	1870						
Redox potential (mV)								
Electrical conductivity (µS/cm)	2100	3740						
Total dissolved solids (ppt)	1.05	1.84						

* Respiratory protective equipment to be worn if odours are noted during initial monitoring & on sites which are potentially contaminated

NOTES

1. BH5 sampled from purged water

APPENDIX H

Chemical testing results

James Morrice
Card Geotechnics Ltd
4 Godalming Business Centre
Woolsack Way
Godalming
Surrey
GU7 1XW

t: 01483 310600
f: 01483 527285
e:

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 14-53313

Project / Site name:	Bartrams Convent	**Samples received on:**	10/04/2014
Your job number:	CG-08753	**Samples instructed on:**	11/04/2014
Your order number:	CG-08753-GJK01	**Analysis completed by:**	24/04/2014
Report Issue Number:	1	**Report issued on:**	24/04/2014
Samples Analysed:	3 soil samples		

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Rexona Rahman
Customer Services Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 14-53313

Project / Site name: Bartrams Convent
Your Order No: CG-08753-GJK01

Lab Sample Number				331469	331470	331471		
Sample Reference				BH1	BH4	BH5		
Sample Number				ES25	ES28	23/02		
Depth (m)				2.00	2.60	2.25		
Date Sampled				07/04/2014	10/04/2014	09/04/2014		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	20	20	19		
Total mass of sample received	kg	0.001	NONE	1.2	1.1	1.2		
General Inorganics								
pH	pH Units	N/A	MCERTS	6.8	6.7	6.9		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO_4	mg/kg	100	ISO 17025	410	16000	1800		
Organic Matter	%	0.1	MCERTS	0.2	0.2	0.1		
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20		
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20		
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	1.2	< 0.20		
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.33	< 0.10		
Fluoranthene	mg/kg	0.2	MCERTS	< 0.20	1.7	< 0.20		
Pyrene	mg/kg	0.2	MCERTS	< 0.20	1.4	< 0.20		
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	0.59	< 0.20		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.69	< 0.05		
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.47	< 0.10		
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	0.23	< 0.20		
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.35	< 0.10		
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20		
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Total PAH								
Total WAC-17 PAHs	mg/kg	1.6	NONE	< 1.6	7.0	< 1.6		
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	23	9.7		
Barium (aqua regia extractable)	mg/kg	1	MCERTS	76	87	70		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.0	1.1	1.0		
Boron (water soluble)	mg/kg	0.2	MCERTS	2.2	1.7	2.2		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.2	< 0.2		
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2		
Chromium (III)	mg/kg	1	NONE	52	55	55		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	52	55	55		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	28	34	28		
Lead (aqua regia extractable)	mg/kg	2	MCERTS	19	15	15		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3		
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	49	46	44		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	72	87	73		
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	81	76	83		

Analytical Report Number: 14-53313

Project / Site name: Bartrams Convent
Your Order No: CG-08753-GJK01

Lab Sample Number				331469	331470	331471		
Sample Reference				BH1	BH4	BH5		
Sample Number				ES25	ES28	23/02		
Depth (m)				2.00	2.60	2.25		
Date Sampled				07/04/2014	10/04/2014	09/04/2014		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10		

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10		

Analytical Report Number : 14-53313

Project / Site name: Bartrams Convent

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
331469	BH1	ES25	2.00	Brown clay.
331470	BH4	ES28	2.60	Brown clay.
331471	BH5	23/02	2.25	Brown clay.

Analytical Report Number : 14-53313

Project / Site name: Bartrams Convent

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	ISO 17025
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 14-52948

Project / Site name:	Bartrams Convent	**Samples received on:**	02/04/2014
Your job number:	CG-08753	**Samples instructed on:**	03/04/2014
Your order number:	CG-08753-GJK01	**Analysis completed by:**	14/04/2014
Report Issue Number:	1	**Report issued on:**	14/04/2014
Samples Analysed:	7 soil samples		

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Rexona Rahman
Customer Services Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Analytical Report Number: 14-52948

Project / Site name: Bartrams Convent
Your Order No: CG-08753-GJK01

Lab Sample Number				329214	329215	329216	329217	329218
Sample Reference				TP4	TP9	TP2	TP10	TP5B
Sample Number				ES13	ES15	ES50	ES51	ES52
Depth (m)				0.30	0.60	0.30	0.20	0.35
Date Sampled				01/04/2014	01/04/2014	31/03/2014	31/03/2014	31/03/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	14	11	19	15
Total mass of sample received	kg	0.001	NONE	1.1	1.2	1.6	1.4	1.1
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH	pH Units	N/A	MCERTS	7.5	7.9	8.3	8.8	8.6
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	ISO 17025	1300	1900	950	780	1500
Organic Matter	%	0.1	MCERTS	5.1	2.1	0.1	0.2	1.5
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.05	0.09	0.23	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	0.31	0.36	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	1.3	1.9	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	0.93	2.4	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	0.84	14	22	1.5	0.63
Anthracene	mg/kg	0.1	MCERTS	0.15	3.8	9.2	0.37	0.11
Fluoranthene	mg/kg	0.2	MCERTS	1.7	22	47	4.7	1.7
Pyrene	mg/kg	0.2	MCERTS	1.5	17	43	4.4	1.5
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.78	8.0	23	2.8	0.87
Chrysene	mg/kg	0.05	MCERTS	0.77	7.3	19	2.4	0.81
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.56	5.4	19	2.3	0.84
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.55	4.2	11	1.3	0.56
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.53	5.4	18	1.5	0.73
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	1.8	7.0	0.83	0.34
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	0.49	2.2	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	2.3	8.4	0.92	0.38
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	1.2	< 0.05	< 0.05
Total PAH								
Total WAC-17 PAHs	mg/kg	1.6	NONE	7.4	94	240	23	8.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	27	13	10	21
Barium (aqua regia extractable)	mg/kg	1	MCERTS	200	240	330	100	180
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.5	0.5	0.8	0.5	0.4
Boron (water soluble)	mg/kg	0.2	MCERTS	3.1	2.1	1.0	2.2	1.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	-	-	-	< 1.2	-
Chromium (III)	mg/kg	1	NONE	-	-	-	38	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	35	30	21	38	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	69	74	30	44	64
Lead (aqua regia extractable)	mg/kg	2	MCERTS	500	1100	83	110	1400
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.7	< 0.3	< 0.3	0.5
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	28	20	21	27	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	60	65	34	68	58
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	350	330	62	96	230

Analytical Report Number: 14-52948

Project / Site name: Bartrams Convent
Your Order No: CG-08753-GJK01

Lab Sample Number				329214	329215	329216	329217	329218
Sample Reference				TP4	TP9	TP2	TP10	TP5B
Sample Number				ES13	ES15	ES50	ES51	ES52
Depth (m)				0.30	0.60	0.30	0.20	0.35
Date Sampled				01/04/2014	01/04/2014	31/03/2014	31/03/2014	31/03/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	12	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	23	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	35	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	11	24	3.9	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	85	250	20	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	110	370	66	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	200	640	90	< 10

Analytical Report Number: 14-52948

Project / Site name: Bartrams Convent

Your Order No: CG-08753-GJK01

Lab Sample Number				329219	329220			
Sample Reference				TP3A	TP7			
Sample Number				ES53	ES54			
Depth (m)				0.30	0.40			
Date Sampled				31/03/2014	31/03/2014			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	22	14			
Total mass of sample received	kg	0.001	NONE	1.5	1.0			
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected			
General Inorganics								
pH	pH Units	N/A	MCERTS	8.3	8.0			
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Total Sulphate as SO_4	mg/kg	100	ISO 17025	860	370			
Organic Matter	%	0.1	MCERTS	0.2	1.5			
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05			
Total PAH								
Total WAC-17 PAHs	mg/kg	1.6	NONE	< 1.6	< 1.6			
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	11			
Barium (aqua regia extractable)	mg/kg	1	MCERTS	120	110			
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.7	0.3			
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	2.5			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	-			
Chromium (III)	mg/kg	1	NONE	40	-			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	40	26			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	42	64			
Lead (aqua regia extractable)	mg/kg	2	MCERTS	320	260			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	50	15			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	110	51			
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	110	94			

Analytical Report Number: 14-52948

Project / Site name: Bartrams Convent
Your Order No: CG-08753-GJK01

Lab Sample Number				329219	329220			
Sample Reference				TP3A	TP7			
Sample Number				ES53	ES54			
Depth (m)				0.30	0.40			
Date Sampled				31/03/2014	31/03/2014			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0			

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10			

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10			
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10			
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10			

Analytical Report Number : 14-52948

Project / Site name: Bartrams Convent

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
329214	TP4	ES13	0.30	Brown sandy topsoil with rubble.
329215	TP9	ES15	0.60	Brown sandy topsoil with rubble.
329216	TP2	ES50	0.30	Light brown sandy clay with gravel.
329217	TP10	ES51	0.20	Light brown clay and sand with rubble and brick.
329218	TP5B	ES52	0.35	Brown topsoil and clay with gravel and vegetation.
329219	TP3A	ES53	0.30	Light brown clay and sand with gravel.
329220	TP7	ES54	0.40	Brown topsoil and clay with gravel and vegetation.

Analytical Report Number : 14-52948

Project / Site name: Bartrams Convent

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	ISO 17025
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 14-53836

Replaces Analytical Report Number : 14-53836, issue no. 1

Project / Site name:	Bartrams Convent	**Samples received on:**	28/04/2014
Your job number:	CG-08753	**Samples instructed on:**	28/04/2014
Your order number:	CG/08753/JJM07	**Analysis completed by:**	07/05/2014
Report Issue Number:	2	**Report issued on:**	07/05/2014
Samples Analysed:	13 soil samples		

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Rexona Rahman
Customer Services Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 14-53836

Project / Site name: Bartrams Convent

Your Order No: CG/08753/JJM07

Lab Sample Number				334889	334890	334891	334892	334893
Sample Reference				BH1	BH1	BH1	BH1	BH2
Sample Number				5	23	33	48	5
Depth (m)				2.50	13.50	19.50	28.50	2.20
Date Sampled				04/04/2014	04/04/2014	04/04/2014	07/04/2014	08/04/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	18	20	17	19	22
Total mass of sample received	kg	0.001	NONE	0.61	0.66	0.61	0.67	0.71
General Inorganics								
pH	pH Units	N/A	MCERTS	7.2	7.3	8.0	8.9	8.0
Total Sulphate as SO_4	mg/kg	100	ISO 17025	830	1800	1300	1300	960
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.67	2.3	2.3	1.6	0.73
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	670	2300	2300	1600	730
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.34	1.1	1.2	0.79	0.37
Total Sulphur	mg/kg	100	NONE	350	5200	7500	6700	330

Analytical Report Number: 14-53836

Project / Site name: Bartrams Convent

Your Order No: CG/08753/JJM07

Lab Sample Number				334894	334895	334896	334897	334898
Sample Reference				BH2	BH2	BH5	BH5	BH5
Sample Number				15	25	5	10	20
Depth (m)				7.50	13.50	2.50	4.50	10.50
Date Sampled				08/04/2014	08/04/2014	03/04/2014	03/04/2014	03/04/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	20	19	18	19	18
Total mass of sample received	kg	0.001	NONE	0.69	0.61	0.77	0.74	0.70
General Inorganics								
pH	pH Units	N/A	MCERTS	7.5	8.0	7.8	7.6	8.0
Total Sulphate as SO_4	mg/kg	100	ISO 17025	12000	2000	2400	9200	1700
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	5.9	2.6	2.0	5.6	2.6
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	5900	2600	2000	5600	2600
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2.9	1.3	1.0	2.8	1.3
Total Sulphur	mg/kg	100	NONE	4800	5700	860	3200	5200

Analytical Report Number: 14-53836

Project / Site name: Bartrams Convent

Your Order No: CG/08753/JJM07

Lab Sample Number				334899	334900	334901		
Sample Reference				BH5	BH5	BH5		
Sample Number				30	39	49		
Depth (m)				16.50	22.50	28.50		
Date Sampled				03/04/2014	03/04/2014	03/04/2014		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	17	17	20		
Total mass of sample received	kg	0.001	NONE	0.85	0.82	0.71		
General Inorganics								
pH	pH Units	N/A	MCERTS	8.8	8.8	8.9		
Total Sulphate as SO_4	mg/kg	100	ISO 17025	770	1000	920		
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	1.2	1.2	1.7		
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	1200	1200	1700		
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.59	0.60	0.87		
Total Sulphur	mg/kg	100	NONE	3600	3900	8500		

Analytical Report Number : 14-53836

Project / Site name: Bartrams Convent

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
334889	BH1	5	2.50	Light brown clay.
334890	BH1	23	13.50	Brown clay.
334891	BH1	33	19.50	Brown clay.
334892	BH1	48	28.50	Brown clay.
334893	BH2	5	2.20	Light brown clay.
334894	BH2	15	7.50	Light brown clay.
334895	BH2	25	13.50	Brown clay.
334896	BH5	5	2.50	Light brown clay.
334897	BH5	10	4.50	Light brown clay.
334898	BH5	20	10.50	Brown clay.
334899	BH5	30	16.50	Brown clay.
334900	BH5	39	22.50	Brown clay.
334901	BH5	49	28.50	Brown clay.

Analytical Report Number : 14-53836

Project / Site name: Bartrams Convent

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES. Results reported corrected for extraction ratio (soil equivalent) as g/l and mg/kg; and upon the 2:1	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	ISO 17025
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

APPENDIX I

Geotechnical testing results

RESULTS OF TRIAXIAL COMPRESSION TESTS

Contract: Bartram's Convent, Hampstead
Report no: T14/1298

BH No	Depth of Sample m	Description of Sample	INDEX PROPERTIES				TRIAXIAL COMPRESSION						
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Soil Classification	Code	Lateral Pressure kPa	Compression Strength kPa	Cohesion kPa	Angle of Friction (degrees)	Bulk Density kg/m^3	Water Content (% dry wt)
1	2.50-2.95	Brown clay	78	27	51	CV	100US	50	165	85	0	2015	32.7
	13.50-13.95	Dark grey-brown clay	80	26	54	CV	100US	270	270	135	0	2150	26.9
	19.50-19.95	Dark grey-brown clay	80	27	53	CV	100US	390	295	150	0	2100	28.8
	28.50-28.95	Dark grey-brown clay	76	29	47	CV	100US	570	370	185	0	2110	27.5
2	2.20-2.65	Brown clay	80	25	55	CV	100US	44	110	55	0	2000	34.2
	7.50-7.95	Brown clay with occasional selenite crystals	82	28	54	CV	100US	150	200	100	0	2070	30.5
	13.50-13.95	Dark grey-brown clay	76	25	51	CV	100US	270	320	160	0	2140	26.7

TRIAXIAL COMPRESSION TEST CODE: **38-38mm dia specimen 100-100mm dia specimen**
U-Undrained CD-Consolidated Drained CU-Consolidated Undrained P-Pore water pressure measurement M-Multistage S- Single stage F-Functional R-Remoulded LV-Laboratory Vane Test

Albury S. I. Ltd Miltons Yard Petworth Road Witley Surrey GU8 5LH

RESULTS OF TRIAXIAL COMPRESSION TESTS

Contract: Bartram's Convent, Hampstead
Report no: T14/1298

BH No	Depth of Sample m	Description of Sample	INDEX PROPERTIES				TRIAXIAL COMPRESSION						
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Soil Classification	Code	Lateral Pressure kPa	Compression Strength kPa	Cohesion kPa	Angle of Friction (degrees)	Bulk Density kg/m^3	Water Content (% dry wt)
3	4.50-4.95	Brown clay with occasional selenite crystals	83	31	52	CV	100US	90	160	80	0	2040	32.8
	16.50-16.95	Dark grey-brown clay	72	26	46	CV	100US	330	300	150	0	2165	26.4
4	3.00-3.45	Brown clay with occasional selenite crystals	80	27	53	CV	100US	60	130	65	0	2030	33.4
	9.00-9.45	Dark brown clay with occasional selenite crystals	80	28	52	CV	100US	180	255	130	0	2030	29.6
	15.00-15.45	Dark brown clay	82	27	55	CV	100US	300	270	135	0	2095	30.1
5	2.50-2.95	Brown clay	76	28	48	CV	100US	50	125	65	0	2030	31.0
	4.50-4.95	Brown clay with occasional grey veining	78	28	50	CH/CV	100US	90	190	95	0	2095	30.9

TRIAXIAL COMPRESSION TEST CODE: **38-38mm dia specimen 100-100mm dia specimen**
U-Undrained CD-Consolidated Drained CU-Consolidated Undrained P-Pore water pressure measurement M-Multistage S- Single stage F-Functional R-Remoulded LV-Laboratory Vane Test

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RESULTS OF TRIAXIAL COMPRESSION TESTS

Contract: Bartram's Convent, Hampstead
Report no: T14/1298

BH No	Depth of Sample m	Description of Sample	INDEX PROPERTIES				TRIAXIAL COMPRESSION						
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Soil Classification	Code	Lateral Pressure kPa	Compression Strength kPa	Cohesion kPa	Angle of Friction (degrees)	Bulk Density kg/m^3	Water Content (% dry wt)
5	10.50-10.95	Dark grey-brown clay	82	28	54	CV	100US	210	245	125	0	2105	28.6
	16.50-16.95	Dark grey-brown clay	68	25	43	CH	100US	330	375	190	0	2165	26.1
	22.50-22.95	Dark grey-brown clay	69	26	43	CH	100US	450	340	170	0	2135	26.5
	28.50-28.95	Dark grey-brown clay	74	29	45	CV	100US	570	315	160	0	2125	27.9

TRIAXIAL COMPRESSION TEST CODE: **38-38mm dia specimen 100-100mm dia specimen**
U-Undrained CD-Consolidated Drained CU-Consolidated Undrained P-Pore water pressure measurement M-Multistage S- Single stage F-Functional R-Remoulded LV-Laboratory Vane Test

Albury S. I. Ltd Miltons Yard Petworth Road Witley Surrey GU8 5LH

APPENDIX J

Structural load information