A SOILS REPORT

FOR A STUDY OF CONDITIONS

AT A SITE SITUATED AT

207, SUMATRA ROAD, WEST HAMPSTEAD,

LONDON, N 17 6 RA.

REPORT PREPARED FOR

PROFESSOR KERRY HAMILTON,

Soarbond Limited,
17, Clarendon Road,
Ealing,
London W5 1 AA.
Tel: 0208 997 8663
E Mail: soarbond@yahoo.co.uk

Project No	Revision	Date	Prepared By	Check
1381	----------	12-10-18	K. Zablocki	Initials

Status
FINAL.

CONTENTS

INTRODUCTION

Soarbond received verbal instructions from Professor Kerry Hamilton in September 2018, to instruct a Soil Testing Laboratory to carry out a site specific soils test of the sub strata at 207 Sumatra Road, London NW6. This information was demanded by Campbell Reith Hill as basement specialist advisors to the London Borough of Camden planning department and this report has been prepared based on Ashdown's Soil Testing Results hereunder given.

The information is, in nearly all respects, that which would have been expected as the sub strata is London Blue Clay, which is so well documented. Our BIA clearly showed the information from six nearby soil testing locations which now can be seen to cross reference the details from the site specific testing.

We are hereby reporting back to the Client, Professor Kerry Hamilton at 207 Sumatra Road and, also, to the Camden planners and Campbell Reith Hill.

This report is part of that package and also includes, in the Appendices A and B, the published results of the soil testing and details of the trial pits carried out on site to show the extent of the existing spread brick footing foundations etc.

OBSERVATIONS

Purpose of Report:

The site under consideration is located under the main footprint of a terraced house at 207 Sumatra Road, NW6..

It is proposed to construct an extension to the existing, Victorian, " under the ground floor hall " basement area.

The site investigation was required to confirm subsoil conditions and hence provide exact information to facilitate the design of foundations / underpin retaining walls for the proposed basement development.

This report describes the work carried out and the encountered ground conditions and discusses their significance in relation to the proposed development. The factual information is contained in the Appendices and includes exploratory hole records, in situ test results, laboratory test results where these were mandated and the site layouts / trial pit cross sections plus photographs.

Graphical representation of the data is also indicated for ease of reference and for the purpose of engineering analysis / engineering interpretation and given in the Appendices.

Available Information:

The property is a large, four storey, terraced house situated on the south side of an east - west running road in West Hampstead. This row of houses was built during the late Victorian or, even, the early Edwardian period; about 120 years ago. The whole area is of a single Class Usage as C3 with West End Lane being mainly retail and a commercial zone with nearby transportation links etc. In the last few years, many neighbouring properties have been extended into their basements as well as converted into flats following the granting of planning permissions. This property is also near to the Network Rail and Thames-link lines in a cutting some 25 metres away to the south. The map given at the beginning of the soils report refers.

This area of West Hampstead is generally undulating ridges and 207 is to be found on one of these ridges with valleys all around.
West Hampstead has a deep band of London Blue Clay overlain with firm to very firm weathered brown London Clay and made ground.
This determines in London the nature of the make-up and the basic details of the sub soil / strata. It is understood that exact details of the soil to the underside of the proposed basement are as expected and very well documented in Geological Maps of the area.

We base our sensible conclusions on these likely soil strata build ups that were met. Further confirmation will always be useful and will be provided when the raft foundation is constructed at 3 to 4 metres below the original soil level. We do not feel that we need to introduce a caveat that there may be significant changes within 20 to 30 metres. It should be noted but, again, we feel that the possibility of changes in the geological profile are very slim.

The reader should also note that, generally, the nearby Victorian and Edwardian houses are nearly all three or four storeys high and bearing on shallow, spread brick footings i.e. from 800 mm to 2300 mm in depth close to the existing basement line. The walling does not appear to be suffering noticeable or extensive settlement problems at the moment, nor differential settlement or the like. This tends to indicate that the bearing strata is sufficient for its needs and 150 kN / m2 appears to be a sensible design criteria at 1.2 metre depth.

There are no mature trees and only a few bushes to be found on or near the site. This is normal for such a site with small front and rear gardens.

Description of the Site:

As described above and shown on plans, cross sections and the like, this terraced house is a typical late Victorian terraced house.

PROCEDURE

The site was investigated by means of two boreholes situated at the extremes of the site. One 6.0 metre borehole was dug in the rear garden whilst a second borehole was terminated, we understand, by an obstruction etc. A third borehole was started but could not be progressed very far for unknown reasons.
Two trial pits across the site were also dug by a Contractor and the details are given in Appendix B.
The boreholes were designated WS 01 and WS 02 whilst the trial pits were called up as Trial Pit 1 and Trial Pit 2.

The site works were carried out before and on 24th. September 2018.

Boreholes:

Light cable percussion techniques were used together with 150mm diameter temporary steel casing. One hole was drilled to a maximum depth of 6.0 metres below ground level whilst the second hole reached 2.3 metres..

Undisturbed samples were taken at regular intervals in the cohesive strata using conventional open drive sampling equipment.

Representative bulk disturbed samples were also taken at regular intervals and these were supplemented by small disturbed samples.

In situ standard penetration tests, using a split spoon sampler (SPT), were performed in order to assess the relative density of the soils encountered.

Trial Pits:

The trial pits were excavated by hand to the depths as shown on the cross sections and photographs.
They were taken to just below the bearing strata of the spread brick footing.
No representative disturbed samples or any other material testing of the strata was carried out.

The trial pits were logged by the design engineer.

The exploratory hole records as given in Appendix A were compiled using site observations, engineering descriptions of soil samples and the results of in-situ and laboratory testing.

All procedures were carried out in accordance with the up to date British Standards Code of Practice BS 5930 : 1990 and A2 : 2000 " Site Investigations " .

LABORATORY TESTING

Only a few basic laboratory tests were carried out on the materials. The results are given for the materials encountered within the results package.
We did not specifically require Liquid Limit, Plastic Limit, Modified Plastic Limit, Plasticity Index, Density, Particle Size Distribution, Sulphate content determination, pH values or Undrained Triaxial Compressive Testing to be confirmed. As 100 % passed the 425 µmm sieve, we can confirm that the sub-strata material was monolithic clay.

CHEMICAL ANALYSIS

Based on the information given above, it was considered unnecessary to carry out further chemical testing for the whole gamut of chemicals / hazards in the ground.

Consequently, soils from the site were not taken back to a specialist laboratory and subjected to rigorous testing for phenols, toluene, cyanides, toxic metals, other heavy and often found metals, sulphides, sulphates and arsenic on industrial sites as this area was always given over to agricultural and housing needs..

DISCUSSION OF SITE CONDITIONS

The exploratory holes revealed a sequence of made ground, to 1.0 metre depth across the site, overlying a mixture of orange and brown clay and with some traces of gravel, probably known as the Kempton Park formation but at the very extreme of this band at 4 metre depth. The monolithic orange brown clay may well overlie the deep London Blue Clay some 10 to 15 metres down.

The made ground was generally granular, sandy silty clay consisting primarily of clay and flint gravel with varying amounts of sand and silt. This material was firm and was encountered to a depth of 1.00m.

The Atterberg Limit tests show that the cohesive materials in boreholes WS 01 and WS 02 are generally close to the low to medium Modified Plasticity Index as in most of London and, therefore, not critical in the preparation of foundation data etc.

We concluded that the N values for the material removed from the boreholes and trial pits would vary with depth and we estimated that safe working N values should be considered as 130 kN / m2 at 1.0 metre depth and 170 kN / m2 at 4.0 metre depth

Ground water was checked on subsequent occasions within the one standpipe and found to non-existent in the WS01 borehole.
It should be noted that, within the period September ot October when this report was prepared, it was an exceptionally dry period and this would have a great influence on the standing water levels.
However, we feel confident that the formation of a concrete raft foundations etc (U Shaped Box) down to a depth of 4.0 metres will not be substantially affected by water in the bottom of the foundation dig.

RECOMMENDATIONS

1/ Extending the existing shallow, " under hall way " basement to a fully demised area, i.e. a deeper basement, should be constructed in a concrete raft foundation and connected up with concreted vertical walls formed as discrete underpins in the classical way of forming such elements.

The construction mentioned above will be formed in the monolithic clay strata with little if any water penetrating into the dig.

It is proposed that the raft foundation and walling will be suitably restrained by ground floor level additional steels so that the box can carry the nett increased, projected 140 to 150 kN/m2 bearing values to the undersides of the footings.

We do not consider that the substructure should be piled or have strip footing foundations as this would weaken the box action needed at this level.
These higher cost solutions are needed above existing, nominal requirements for four storey terraced houses with walls made up of dense 225 to 340 mm brickwork with light timber flooring / insulation and some studwork and skimmed double plasterboards to sides etc.

a/ Assumption of zero skin friction within the top 2.7 metres of ground (made ground and brown London clay max value) whilst the possible effects of negative skin friction have been discounted.

b/ N value take as 130 to 170. Use angle of wall friction $\delta' = 0.75\ \emptyset'$ and a coefficient of earth pressure k to be 1.5.

c/ Standing ground water table level to be assumed as below 6.0 metres.

2/ There is no appreciable variable depth of made ground over this site. We would suggest that ground floor slabs needed to be extended only as they are suspended timber joists over the whole demise.

3/ Access to basement is through the existing basement door and front bay basement window.

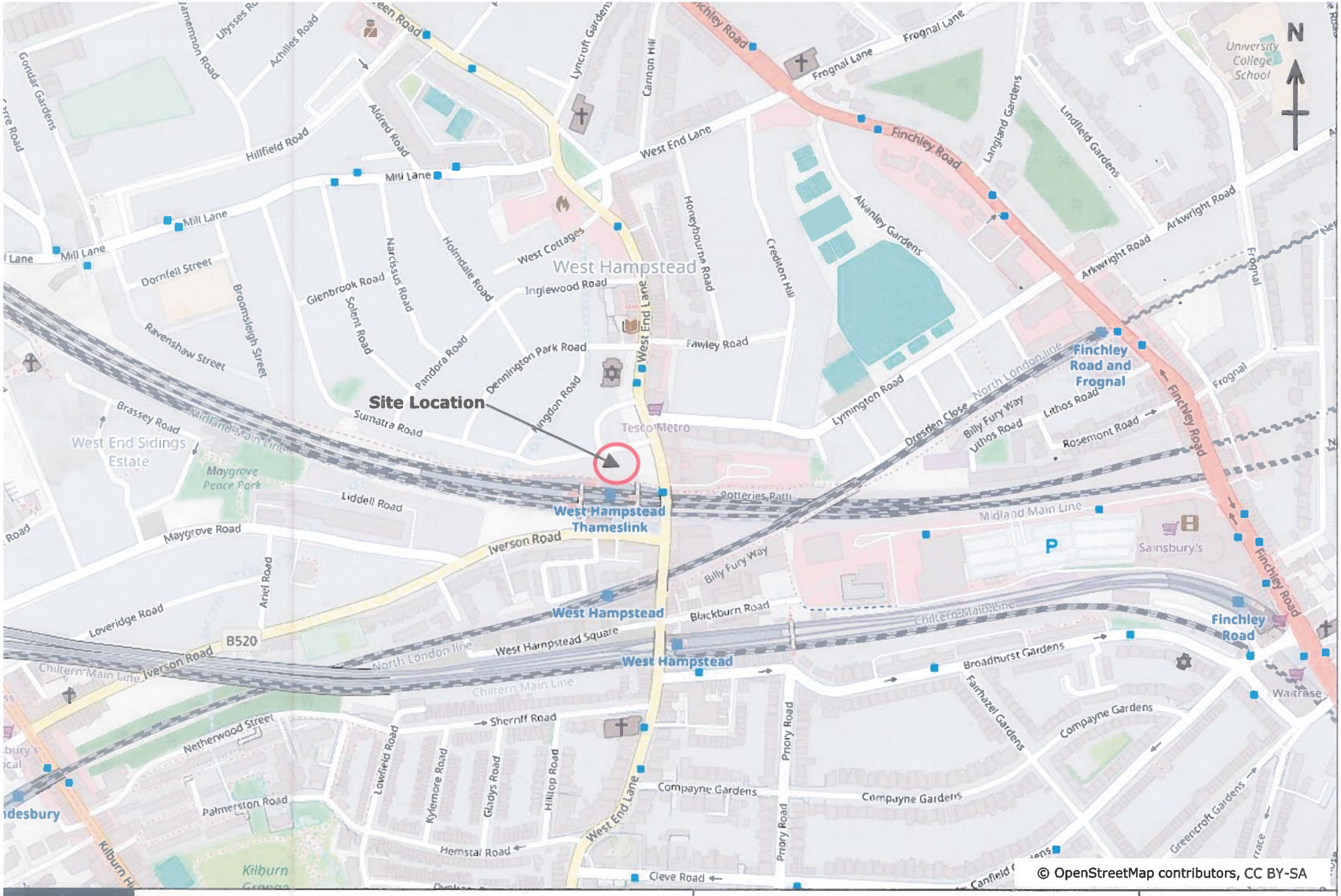
4/ We would suggest that all sub structure concrete is designed for sulphate resisting requirements and the site-delivered concrete has ground granulated blast furnace slag (ggbfs) or similar cement replacement materials etc. incorporated in lieu of ground cement etc..

Prepared by

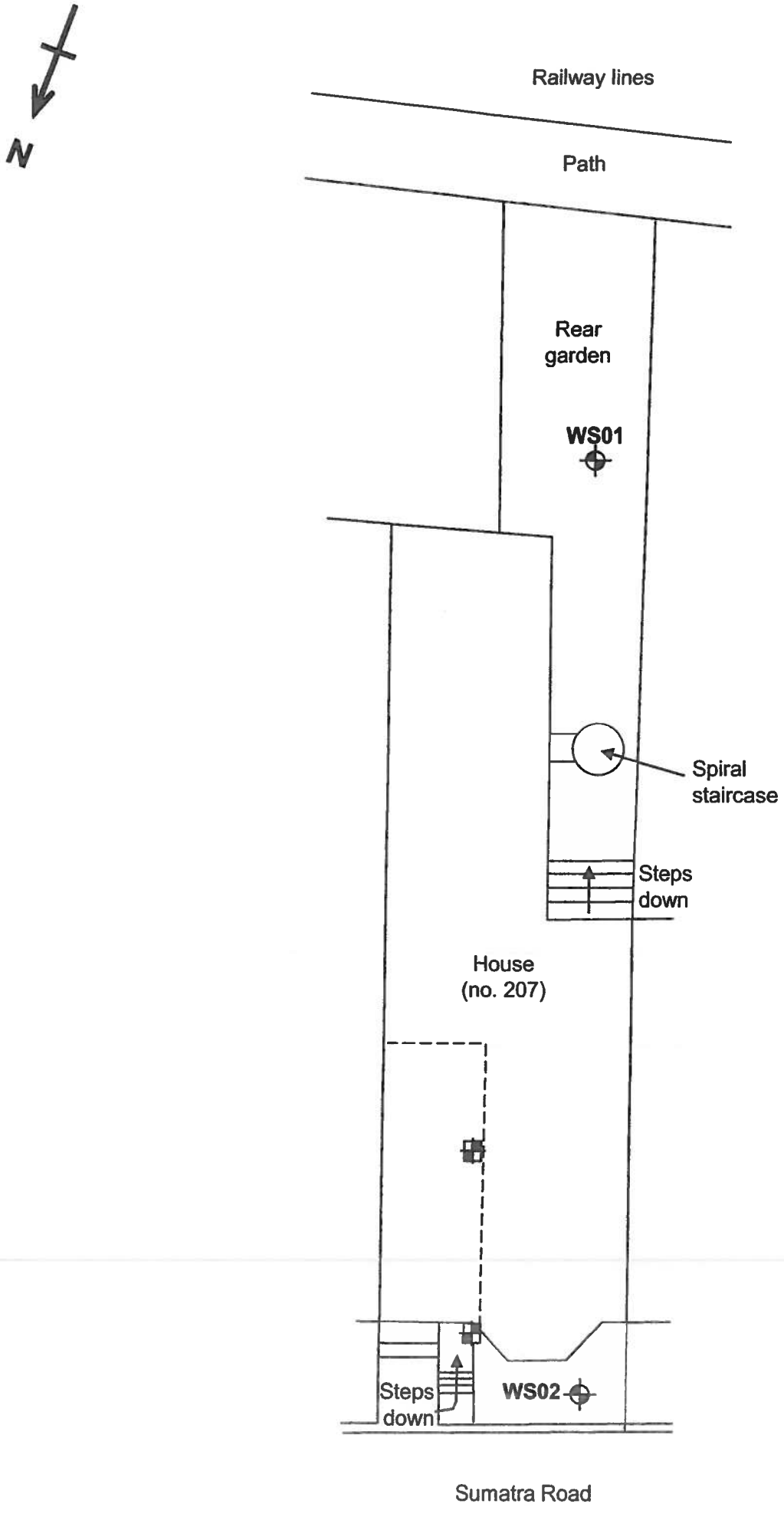
Konstanty Zablocki B.Sc. (Hons.), C. Eng. MICE
for and on behalf of
SOARBOND LTD.,

Reference: 1381/Soils Report 1
10th. October 2018

APPENDIX A



ASHDOWN SITE INVESTIGATION LIMITED	Site: 207 Sumatra Road, West Hampstead, London	Site Location Plan. Not To Scale
		Figure 1 R18-13243



ASHDOWN SITE INVESTIGATION	Site: 207 Sumatra Road, West Hampstead	Exploratory Hole Location Plan. Not To Scale	Figure 2 R18-13243

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: 207 Sumatra Road, West Hampstead, London

Job Number: R18-13243

Start Date: 24/09/2018

End Date: 24/09/2018

Borehole Number: **WS01**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Legend	Depth	Stratum Description
						0.00	Paving slab.
	D	0.20				0.05	MADE GROUND: Dark brown gravelly slightly sandy silty clay. Gravel is angular to subrounded fine to coarse flint brick and concrete.
						0.20	MADE GROUND: Grey gravel of crushed concrete
						0.30	MADE GROUND: Brown and dark brown gravelly slightly sandy silty clay. Gravel is angular to subangular fine to coarse brick, concrete, flint and charcoal-like material. Sand is fine to coarse.
	D	0.80					
	V	1.00		>130		1.00	Very stiff brown and orange brown CLAY. (London Clay Formation)
	D	1.20					
	H	1.20		210			
	H	1.40		250			
	H	1.60		>250			
	D	1.80					
	H	1.80		>250			
	V	2.00		>130			
	H	2.20		>250			
	D	2.50					
	H	2.50		195			
	H	2.80		195			
	V	3.00		>130			
	H	3.20		195			
	D	3.50					
	H	3.50		170			
	H	3.80		170			
							with light brown gravel of clay between 4.00m and 4.10m depth.
	D	4.50					
	H	4.50		225			
						5.00	

Samples and In Situ Testing

Dynamic Probe Blows/100mm 0 5 10 15 20 25 30

Continued on next sheet

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: Standpipe installed to 5.00m depth; 5.00m to 3.00m slotted pipe with gravel surround; 3.00m to ground level plain pipe with bentonite seal; completed with end cap and security cover.

Excavation Method: WLS

Borehole Diameter: Various

Made By: RJ

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: 207 Sumatra Road, West Hampstead, London

Job Number: R18-13243

Start Date: 24/09/2018

End Date: 24/09/2018

Borehole Number: **WS01**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
								Very stiff brown and orange brown CLAY. (London Clay Formation)
	D	5.50						
	H	5.50		250				
	D	5.80						
	H	5.80		250				
							6.00	End of borehole at 6.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: Standpipe installed to 5.00m depth; 5.00m to 3.00m slotted pipe with gravel surround; 3.00m to ground level plain pipe with bentonite seal; completed with end cap and security cover.

Excavation Method: WLS

Borehole Diameter: Various

Made By: RJ

ASHDOWN SITE INVESTIGATION
L • I • M • I • T • E • D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: 207 Sumatra Road, West Hampstead, London

Job Number: R18-13243

Start Date: 24/09/2018

End Date: 24/09/2018

Borehole Number: **WS02**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
							0.10	MADE GROUND: Dark brown gravelly slightly sandy silty clay. Gravel is angular to subrounded fine to coarse brick, flint and charcoal-like material. Sand is fine to coarse.
	D	0.80					0.80	Stiff to very stiff orange brown silty sandy CLAY. Sand is fine to coarse. (London Clay Formation)
	D	1.00						
	D	1.50					1.50	End of borehole at 1.50m
	P	1.50	1.95	17				
	P	1.95	2.25	38				
	P*	2.25	2.30	8				

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: P* - blow count for 50mm penetration only.

Excavation Method: WLS

Borehole Diameter: Various

Made By: RJ

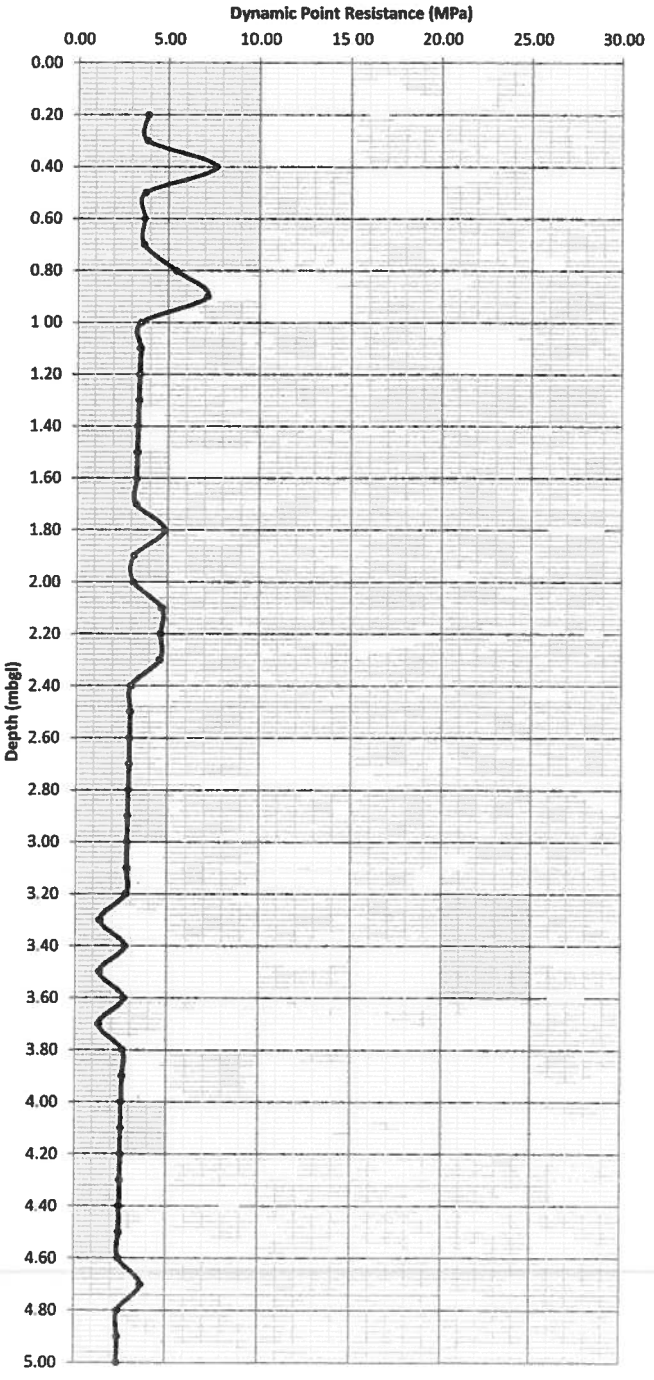
ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE 207 Sumatra Road, West Hampstead, London **Report Ref.** R18-13243

Test Location Reference	WS01

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
0.10				
0.20	2	0.05	4.09	3.92
0.30	2	0.05	4.09	3.87
0.40	4	0.03	8.17	7.63
0.50	2	0.05	4.09	3.77
0.60	2	0.05	4.09	3.72
0.70	2	0.05	4.09	3.67
0.80	3	0.03	6.13	5.44
0.90	4	0.03	8.17	7.17
1.00	2	0.05	4.09	3.54
1.10	2	0.05	4.09	3.50
1.20	2	0.05	4.09	3.46
1.30	2	0.05	4.09	3.42
1.40	2	0.05	4.09	3.38
1.50	2	0.05	4.09	3.34
1.60	2	0.05	4.09	3.30
1.70	2	0.05	4.09	3.27
1.80	3	0.03	6.13	4.85
1.90	2	0.05	4.09	3.20
2.00	2	0.05	4.09	3.16
2.10	3	0.03	6.13	4.69
2.20	3	0.03	6.13	4.64
2.30	3	0.03	6.13	4.60
2.40	2	0.05	4.09	3.03
2.50	2	0.05	4.09	3.00
2.60	2	0.05	4.09	2.97
2.70	2	0.05	4.09	2.94
2.80	2	0.05	4.09	2.91
2.90	2	0.05	4.09	2.88
3.00	2	0.05	4.09	2.86
3.10	2	0.05	4.09	2.83
3.20	2	0.05	4.09	2.80
3.30	1	0.10	2.04	1.39
3.40	2	0.05	4.09	2.75
3.50	1	0.10	2.04	1.36
3.60	2	0.05	4.09	2.70
3.70	1	0.10	2.04	1.34
3.80	2	0.05	4.09	2.65
3.90	2	0.05	4.09	2.63
4.00	2	0.05	4.09	2.60
4.10	2	0.05	4.09	2.58
4.20	2	0.05	4.09	2.56
4.30	2	0.05	4.09	2.54
4.40	2	0.05	4.09	2.52
4.50	2	0.05	4.09	2.49
4.60	2	0.05	4.09	2.47
4.70	3	0.03	6.13	3.68
4.80	2	0.05	4.09	2.43
4.90	2	0.05	4.09	2.41
5.00	2	0.05	4.09	2.39



Notes:

Hammer Mass	63.5 kg
Fall Height	0.76 m
Cone Area	0.0019 m^2
E_{theor}	473 J
Energy Ratio	0.82
Anvil Mass	1 kg
Rod Mass	8.79 kg/m

ASHDOWN SITE INVESTIGATION LTD

Dynamic Probe Record

SITE 207 Sumatra Road, West Hampstead, London **Report Ref.** R18-13243

Test Location Reference	WS01

Depth (mbgl)	Blows (per 100mm)	Average Penetration per Blow (m)	Unit Point Resistance (MPa)	Dynamic Point Resistance (MPa)
5.10	2	0.05	4.09	2.37
5.20	3	0.03	6.13	3.53
5.30	2	0.05	4.09	2.34
5.40	2	0.05	4.09	2.32
5.50	2	0.05	4.09	2.30
5.60	3	0.03	6.13	3.42
5.70	2	0.05	4.09	2.26
5.80	2	0.05	4.09	2.25
5.90	3	0.03	6.13	3.35
6.00	2	0.05	4.09	2.21
6.10				
6.20				
6.30				
6.40				
6.50				
6.60				
6.70				
6.80				
6.90				
7.00				
7.10				
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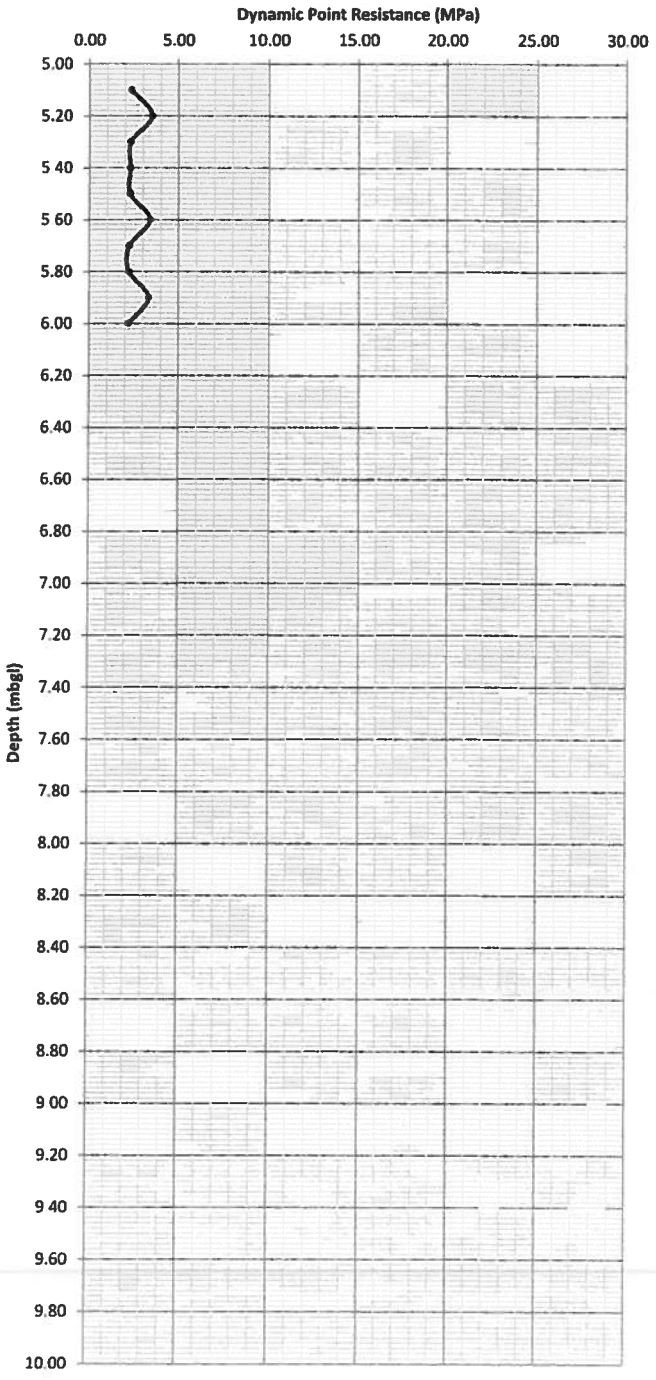


Notes:

Hammer Mass	63.5 kg
Fall Height	0.76 m
Cone Area	0.0019 m^2
E_{theor}	473 J
Energy Ratio	0.82
Anvil Mass	1 kg
Rod Mass	8.79 kg/m

ASHDOWN SITE INVESTIGATION LIMITED

Soil Classification Summary

Site Name:	207 Sumatra Road, West Hampstead, London	Job No:	R18-13243

BH/TP No.	Depth (m)	Nat. Moist. Cont. (w %)	Equiv. Moist. Cont. (wa %)	Atterberg Limits			Class'n	Cons. Index (Ic)	% passing 425 µm sieve	Visual Description of Sample
				Wl %	Wp %	Ip %				
WS01	1.20	28		87	21	66	CV	0.89*	100	Stiff brown CLAY.
WS01	2.50	30		82	24	58	CV	0.90*	100	Stiff brown CLAY.
WS01	3.50	32		83	26	57	CV	0.89*	100	Stiff dark brown CLAY.
WS02	1.00	27		77	21	56	CV	0.89*	100	Stiff orange brown CLAY.

Test Method: Classification Tests BS1377: Part 2: 1990: Method 4.4, 5.3 and 5.4

Sheet No. 1

* Consistency index based on natural moisture content and not the equivalent moisture content.

Unit A2
Windmill Road
Ponswood Industrial Estate
St Leonards on Sea
East Sussex
TN38 9BY
Telephone: (01424) 718618

cs@elab-uk.co.uk
info@elab-uk.co.uk

2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	18-19785
Issue:	1
Date of Issue:	02/10/2018
Contact:	Lab Results
Customer Details:	Ashdown Site Investigation Ltd Unit 3 The Grain Store Ditchling Common Business Park Ditchling Common West Sussex BN6 8SG
Quotation No:	Q15-00267
Order No:	P18-6731
Customer Reference:	R18-13243
Date Received:	27/09/2018
Date Approved:	02/10/2018
Details:	207 Sumatra Road, West Hampstead, London
Approved by:	

John Wilson, Operations Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

ELAB

Sample Summary

Report No.: 18-19785

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
151788	WS01 4.50	24/09/2018	27/09/2018	Clay	
151789	WS02 1.50	24/09/2018	27/09/2018	Silty clayey loam	

ELAB

UKAS TESTING 2683

mCERTS

Results Summary

Report No.: 18-19785

ELAB Reference	151788	151789
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	WS01	WS02
Sample Depth (m)	4.50	1.50
Sampling Date	24/09/2018	24/09/2018

Determinand	Codes	Units	LOD		
Anions					
Water Soluble Sulphate	M	g/l	0.02	2.22	0.21
Inorganics					
Total Sulphur	N	%	0.01	0.11	0.02
Acid Soluble Sulphate (SO4)	U	%	0.02	0.53	0.04
Miscellaneous					
pH	M	pH units	0.1	7.9	7.9

ELAB

UKAS TESTING
2683

mCERTS

Method Summary

Report No.: 18-19785

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
pH	M	Air dried sample	02/10/2018	113	Electromeric
Acid Soluble Sulphate	U	Air dried sample	02/10/2018	115	Ion Chromatography
Water soluble anions	M	Air dried sample	01/10/2018	172	Ion Chromatography
Total organic carbon/Total sulphur	N	Air dried sample	01/10/2018	216	IR

Tests marked N are not UKAS accredited

ELAB

UKAS TESTING 2683

mCERTS

Report Information

Report No.: 18-19785

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis (dried at < 30°C)
ELAB are unable to provide an interpretation or opinion on the content of this report.
The results relate only to the items tested
PCB congener results may include any coeluting PCBs
Uncertainty of measurement for the determinands tested are available upon request

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

NOTES FOR THE INTERPRETATION OF EXPLORATORY HOLE RECORDS

1 Symbols and abbreviations

Samples

U	'Undisturbed' Sample: - 100mm diameter by 450mm long. The number of blows to drive in the sampling tube is shown after the test index letter in the SPT column.
Uo	Sample not obtained.
U*	Full penetration of sample not obtained.
Pi	Piston Sample: 'Undisturbed' sample 100mm diameter by 600mm long.
D	Disturbed Sample.
R	Root Sample.
B	Bulk Disturbed Sample.
W	Water Sample.
J	Jar Sample (sample taken in amber glass jar fitted with gas tight lid)
T	Tub Sample
Vi	Vial Sample

In situ Testing

S	Standard penetration test (SPT): Using the split spoon sampler.
C	Standard Penetration Test (SPT): using a solid cone instead of the sampler - conducted usually in coarse grained soils or weak rocks.
V	Shear Vane Test: Undrained shear strength (cohesion) (kN/m^2) shown within the Vane/Pen Test and N Value column.
H	Hand penetrometer Test: Undrained shear strength (cohesion) (kN/m^2) shown within the Vane/Pen Test and N Value column.
P	Perth Penetrometer Test: Number of blows for 300mm penetration shown under Vane/Pen Test and N Value column.

Excavation Method

CP	Cable Percussion Borehole
WLS	Dynamic Sampler Borehole using windowless sampler tubes
WS	Dynamic Sampler Borehole using window sampler tubes
TP	Trial Pit excavated using mechanic excavator
HDP	Trial Pit excavated using hand tools

2 Soil Description

Description and classification of soils has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of soil, Part 1 Identification and description (BS EN ISO 14688-1:2002+A1:2013) and Part 2 Principles of classification (BS EN 14688-2:2004+A1:2013) as well as the BS5930:2015 code of Practice for Ground Investigations.

3 Rock Description

Description and classification of rocks has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of rock, Part 1 Identification and classification (BS EN ISO 14689-1:2003) as well as the BS5930:2015 code of Practice for Ground Investigations.

4 Chalk Description

Chalk description is based on BS EN ISO 14688, BS EN ISO 14689 and BS5930. The classification of chalk generally follows the guidance offered by the Construction Industry Research and Information Association (CIRIA) C574, 'Engineering in Chalk'. This is based on assessment of chalk density, discontinuity and aperture spacing, and the proportion of intact chalk to silt of chalk. See additional chalk classification notes.

APPENDIX B

Railway lines

Path

Rear Garden

BOREHOLE 1.

TRIAL PIT 1. (BY OTHERS)

PHOTOS 2+3

EXISTING BASEMENT

HOUSE 207

TRIAL PIT 2. (BY OTHERS)

PHOTOS 4+5.

BOREHOLE 2.

Site Plan
Scale 1:200 @A3

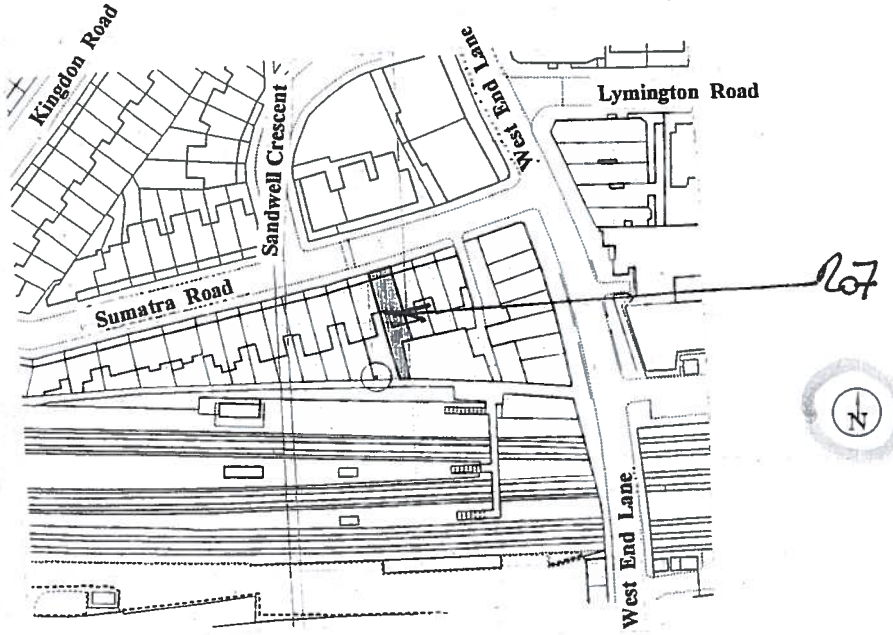
Scale 1 : 200 @A3

1 3 5 7 9

0m 2 4 6 8 10m

1

BOREHOLE LOCATIONS TO 207 SUMATRA ROAD, WEST HAMPSTEAD, LONDON NW6 1PF



Location Plan
Scale 1:1250 @A3

Scale 1 : 1250 @A3

5

0m 10 20 30 40 50 60 70 80 90 100m

SOARBOND Ltd.
Chartered Engineers
17 Clarendon Road,
London
London W6 1AA
tel 020 8987 8443
mobile 07879 583 888
email

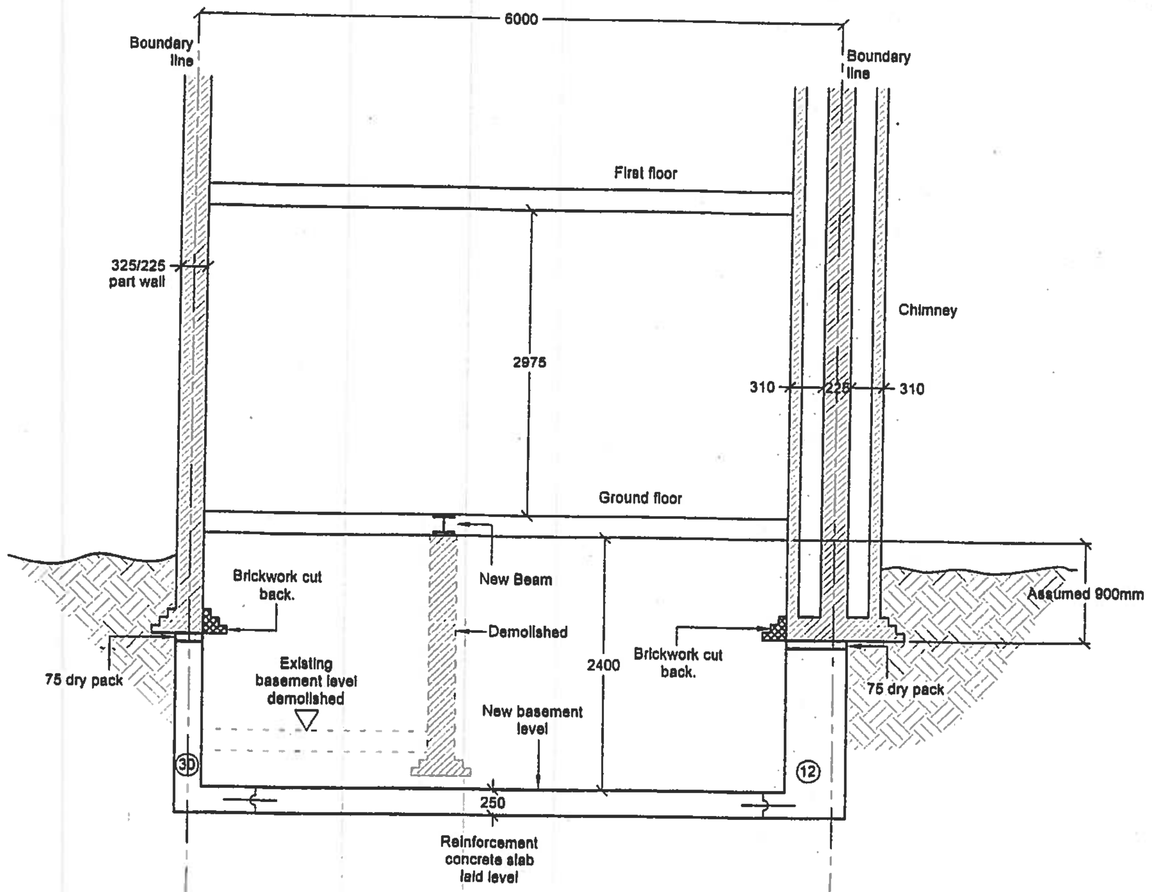
Job title
Redevelopment at
207 Sumatra Road
West Hampstead
London NW6 1PF

Drawing title
Existing Site Plan And Location Plan

Client
Professor Kerry Hamilton

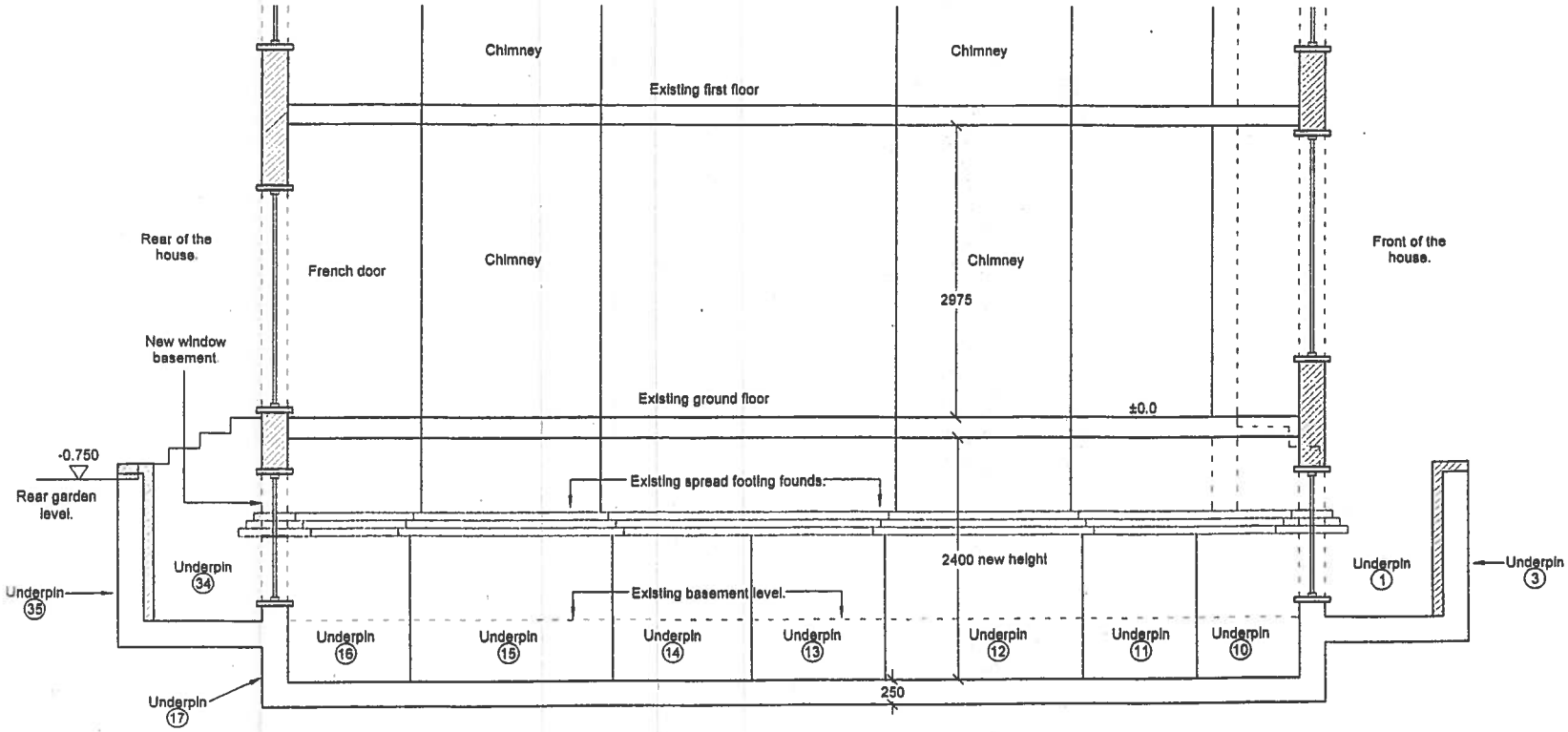
Drawn by	Date
P. Obrzut	August 2017
Chk'd	Date
W.K.J. Zablocki	August 2017
Job number	Scale @ A3
1381	1:200,1250

Drawing number
1381 – 08



Section B-B
Scale 1:50 @A3

SOARBOND Ltd.	
Job title: Redevelopment at 207 Sumatra Road West Hampstead London NW6 1PF	
Drawing title: Proposed Basement SECTION B-B	
Client: Professor Kerry Hamilton	
Drawn by: P. Obrzut	Date: August 2017
Chk'd: W.K.J. Zablocki	Date: August 2017
Job number: 1381	Scale @ A3: 1 : 50
Drawing number: 1381 - 31	



Proposed Section A-A

Scale 1:50 @A3

B

SOARBOND Ltd.
Chartered Engineers
17 Clarendon Road,
Ealing,
London W5 1AA
tel 020 8997 0662
mobile 07879 583 000
email soarbond@yahoo.co.uk

Job title
Redevelopment at
207 Sumatra Road
West Hampstead
London NW6 1PF

Drawing title
Proposed Section A-A

Client
Professor Kerry Hamilton

Drawn by	Date
P. Obrzut	August 2017
Chk'd	Date
W.K.J. Zoblocki	August 2017
Job number	Scale @ A3
1381	1 : 50

Drawing number
1381 – 32

PHOTO 12

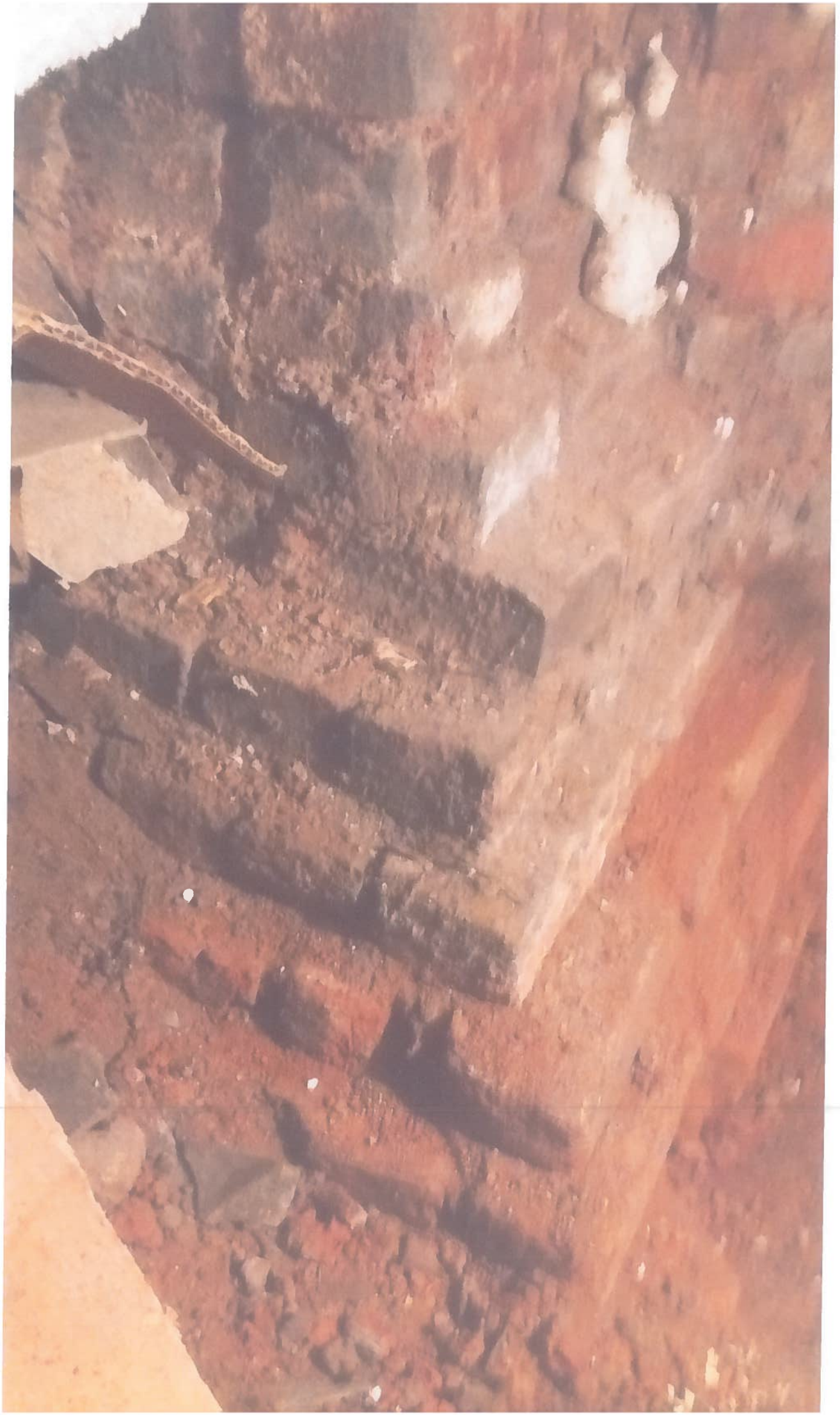


PHOTO 3

PHOTO 4

PHOTO 5