

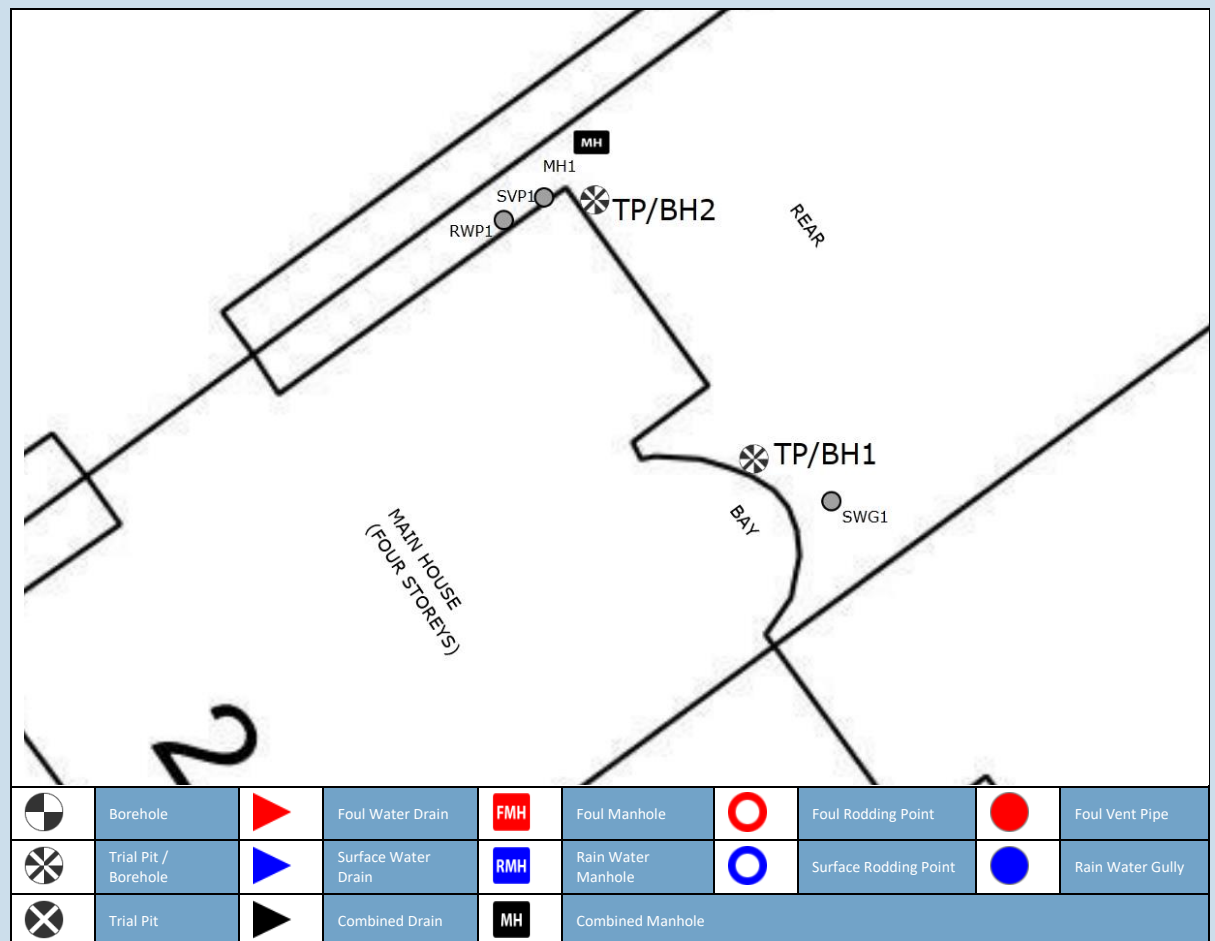
GEOTECHNICAL

for Subsidence Management Services

2 Elms Avenue, Muswell Hill, London, N10 2JP

Client: Subsidence Management Services
Client Contact: Chris Sherwin
Client Ref: IFS-AVI-SUB-21-0093348
Policy Holder: Mr and Mrs Richard and Maria Corrigan
Report Date: 20 July 2021
Our Ref: C61701G27685

Site Plan



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Foundation Detail

Diagram illustrating the cross-section of a wall structure with dimensions:

- Total height: 1.40m*
- Brickwork section height: 0.60m
- Horizontal joint thickness: 0.05m
- Concrete base height: 0.35m
- Horizontal joint thickness: 0.10m
- Dark base layer height: 0.20m*
- Wall width: 1.20m

* These values are estimated

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Site Observations

GENERAL:

Site Investigation works undertaken on 19 July 2021 during dry weather (i.e. no rain).

HEALTH AND SAFETY:

Negative signal obtained in Power, Radio and Genny mode on the Cable Avoidance Tool (CAT) (TP/BH1).

Negative signal obtained in Power, Radio and Genny mode on the Cable Avoidance Tool (CAT) (TP/BH2).

FOUNDATIONS:

At 0.30m bgl UNDERSIDE OF BAY FOUNDATION in TP/BH1.

At 1.40m bgl ESTIMATED UNDERSIDE OF HOUSE FOUNDATION in TP/BH2.

BOREHOLE:

At 0.40m bgl base of hand excavated trial pit in TP/BH1.

At 4.00m bgl target depth achieved in TP/BH1.

At 1.20m bgl base of hand excavated trial pit in TP/BH2.

At 4.00m bgl base of hand excavated trial pit in TP/BH2.

ROOTS:

At 0.30m to 0.80m bgl occasional roots of live appearance encountered and sampled in TP/BH1.

At 0.80m to 2.30m bgl no roots encountered. Extensive inspection of soil samples encountered no roots in TP/BH1.

At 2.30m to 2.80m bgl occasional roots of live appearance encountered and sampled in TP/BH1.

At 2.80m to 4.00m bgl no roots encountered. Extensive inspection of soil samples encountered no roots in TP/BH1.

At 0.30m to 1.40m bgl occasional roots of live appearance encountered in TP/BH2.

At 1.40m to 1.70m bgl occasional roots of live appearance encountered and sampled in TP/BH2.

At 1.70m to 4.00m bgl no roots encountered. Extensive inspection of soil samples encountered no roots in TP/BH2.

IN SITU TESTING:

Hand Penetrometer (PEN) undertaken at 0.30m bgl (TP/BH 1) within the window sampler at maximum 0.50m intervals.

Hand Shear Vane (SV) undertaken at 0.30m bgl (TP/BH 1) within the hand excavated trial pit and thereafter in the window sample borehole at maximum 1.00m intervals.

Hand Penetrometer (PEN) undertaken at 1.40m bgl (TP/BH 2) within the window sampler at maximum 0.50m intervals.

Hand Shear Vane (SV) undertaken at 1.40m bgl (TP/BH 2) within the hand excavated trial pit and thereafter in the window sample borehole at maximum 1.00m intervals.

WATER STRIKES:

No water strikes (NWS) encountered.

The groundwater observations do not necessarily indicate equilibrium conditions. It should be appreciated that groundwater levels are subject to both seasonal and weather induced variations. Other effects such as construction activities may also change groundwater levels.

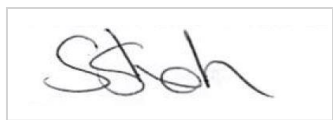
SOIL ANALYSIS

for Subsidence Management Services

2 Elms Avenue, London, N10 2JP

Client: Subsidence Management Services
Claim Number: 4501396609
Policy Holder: Mr and Mrs Richard and Maria Corrigan
Report Date: 13/08/2021
Our Ref: L21742

Compiled By:

Name	Position	Signature
Saira Dougan	Laboratory Technician	

Checked By:

Name	Position	Signature
Bob Walker	Laboratory Manager	

Date samples received: 29-Jul-21
Water Content Test Date: 04-Aug-21
Atterberg Limits Test Date: 05-Aug-21

Oedometer Test Date: 12-Aug-21



9265

Notes relating to soils testing

Unless otherwise stated, all soil testing was undertaken by Environmental Services at unit 10H Maybrook Business Park, B76 1AL for SubsNetUK of Unit 4 Linnet Court, Cawledge Business Park, Alnwick, NE66 2GD

Soil samples have been prepared in accordance with BS1377:Part 1: 2016 Section 7

Descriptions of soil samples within the laboratory have been undertaken generally in accordance with BS5930:2015. Descriptions of soil samples fall outside of the scope of UKAS accreditation and may have been shortened to remove tertiary components for ease of reference.

The graphical representation of 40% of the LL and the numerical representation of the modified plasticity index (mod. PI) fall outside of the scope of UKAS accreditation.

Following the issue of this soil analysis report, samples will be retained for at least 28 days should additional testing, or referencing, be required. It should be noted that any tests undertaken on soils retained subsequent to the issue of this report may not give an accurate indication of the in-situ conditions of the sample.

This Soil Analysis Report may not be reproduced, in part or in full, without written approval of the laboratory.

The results contained herein relate only to items tested and no others. Additionally as the laboratory is not responsible for the sampling process it takes no responsibility for the condition of the samples and all samples are tested "as received".

Where samples of the same test type are not tested on the same day, or the testing spans multiple days, the test date states the day of the final test or the test date of the final sample.

All information above the laboratory reference on the cover page of this report are as provided by the customer and the laboratory is not responsible for any errors or omissions therein.

Water Content Tests are undertaken in accordance with ISO 17892:Part 1:2014

The Liquid Limit test is undertaken in accordance with BS1377:Part 2:1990 Section 4.4 using an 80g cone with a 30° tip. Sieve percentages reported in blue denote that the sample has been sieved otherwise it has been prepared from its natural state.

Unless otherwise specified herein, the one-point cone penetrometer method has been used with increasing water content. Atterberg results depicted in green have not been tested and are duplicates of the preceding sample, included for reference only.

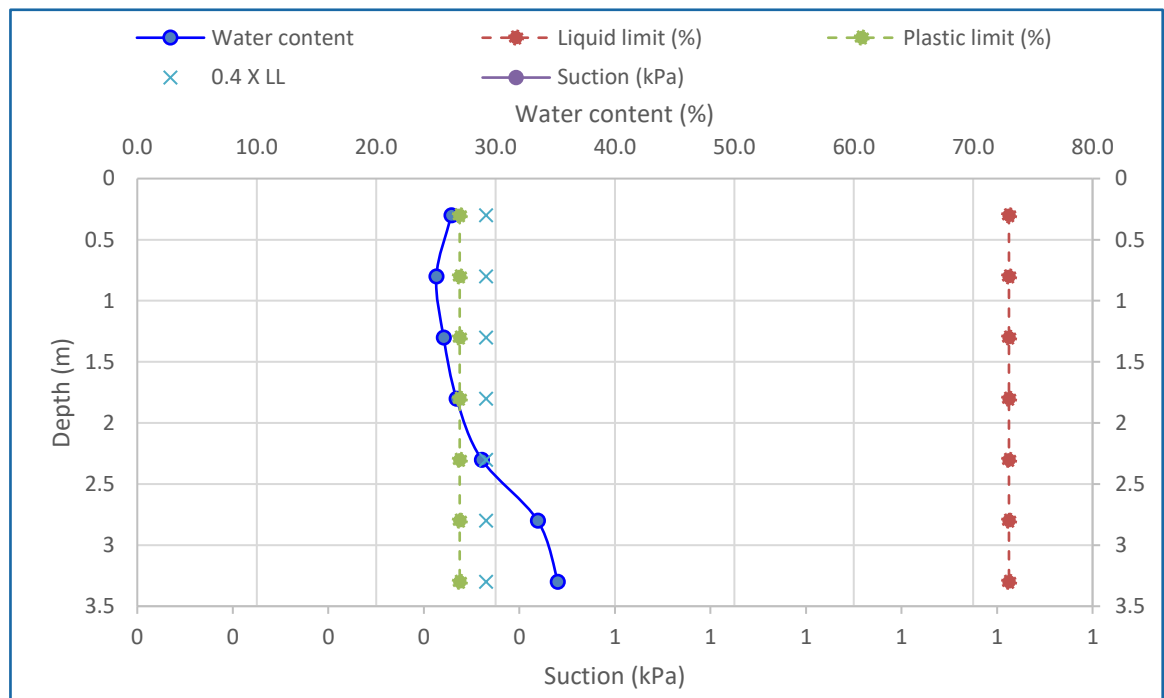
The Plastic Limit test and the determination of the Plasticity Index is undertaken in accordance with BS1377:Part 2:1990. Where a plastic limit has been denoted with an asterisk (*) then it has been derived from the liquid limit and has not been tested.

The Oedometer swell/strain test method is based upon BS1377:Part 5:1990 Section 4.4 'Determination of swelling and collapse characteristics' and unless otherwise stated is undertaken on a remoulded, disturbed, sample.

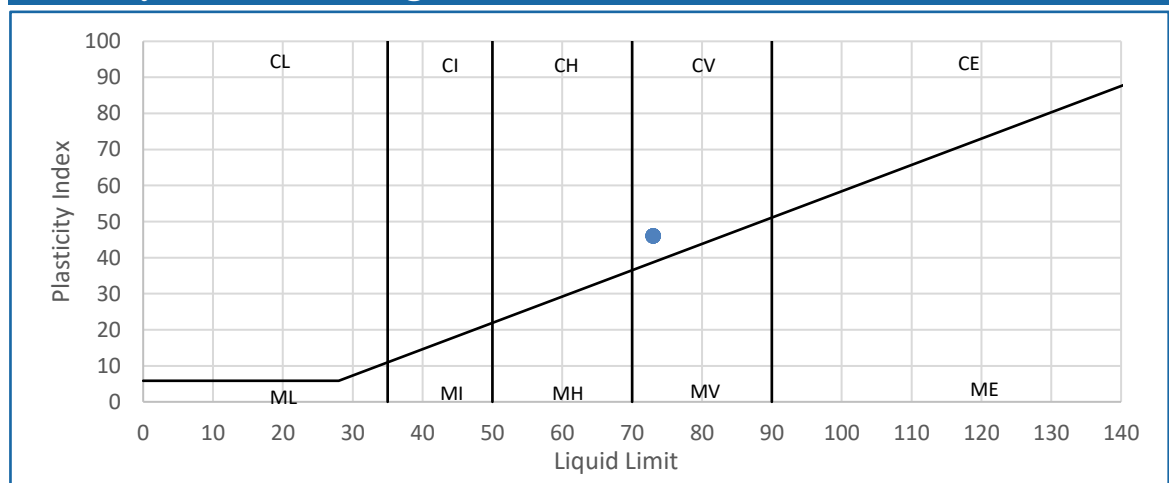
The Oedometer Swell/Strain Test is undertaken in a controlled environment within a temperature range of 16°C and 24°C

Samples from BH1

Lab Ref	Depth (m)	MC (%)	LL (%)	PL (%)	PI (%)	.425 mm(%)	mod. PI (%)	Av. Suc. (kPa)	Description
1	0.3	26.3	73	27	46	100	46		Firm to stiff brown/orange-brown/grey veined CLAY with rare gravel and sand. Gravel is fine
2	0.8	25.0	73	27	46	100	46		Stiff brown/orange-brown/grey veined CLAY with rare gravel and sand. Gravel is fine
3	1.3	25.7	73	27	46	100	46		Stiff brown/orange-brown/grey veined CLAY with rare gravel and sand. Gravel is fine
4	1.8	26.7	73	27	46	100	46		Stiff brown/grey veined CLAY with rare gravel and sand. Gravel is fine
5	2.3	28.8	73	27	46	100	46		Firm to stiff brown/grey veined CLAY with rare gravel and sand. Gravel is fine
6	2.8	33.5	73	27	46	100	46		Stiff brown/grey veined CLAY with rare gravel and sand. Gravel is fine
7	3.3	35.2	73	27	46	100	46		Stiff brown/orange-brown/grey veined CLAY with rare gravel and sand. Gravel is fine

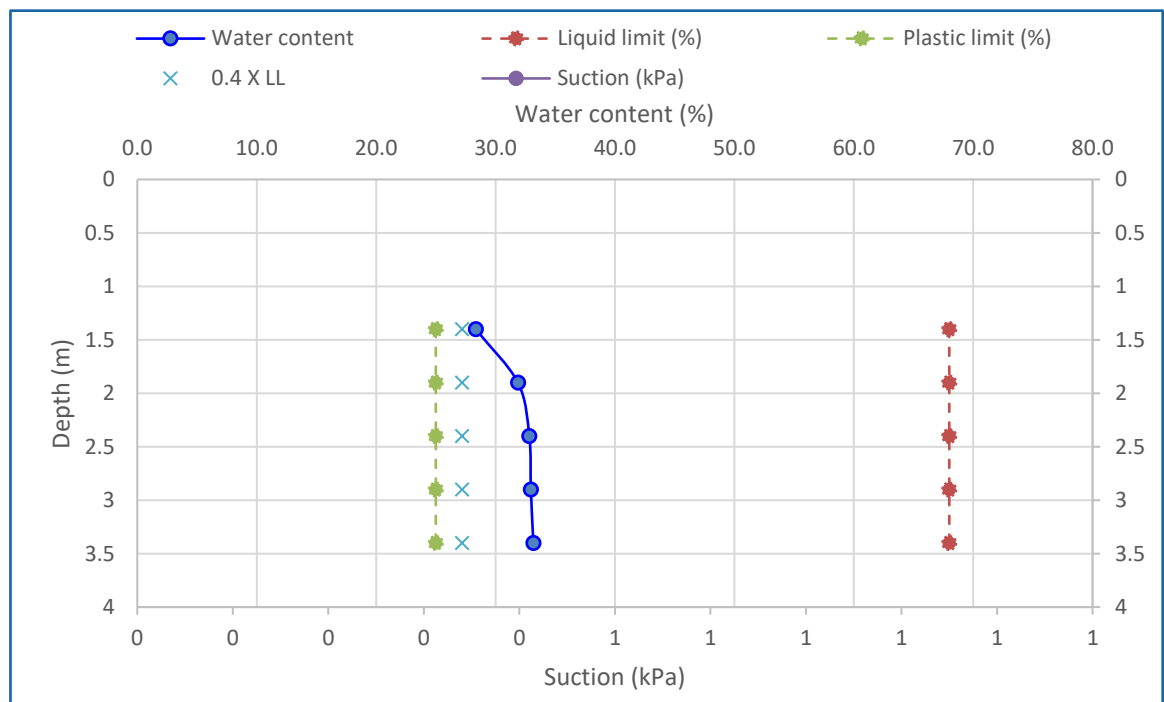


Plasticity Chart for Casagrande Classification

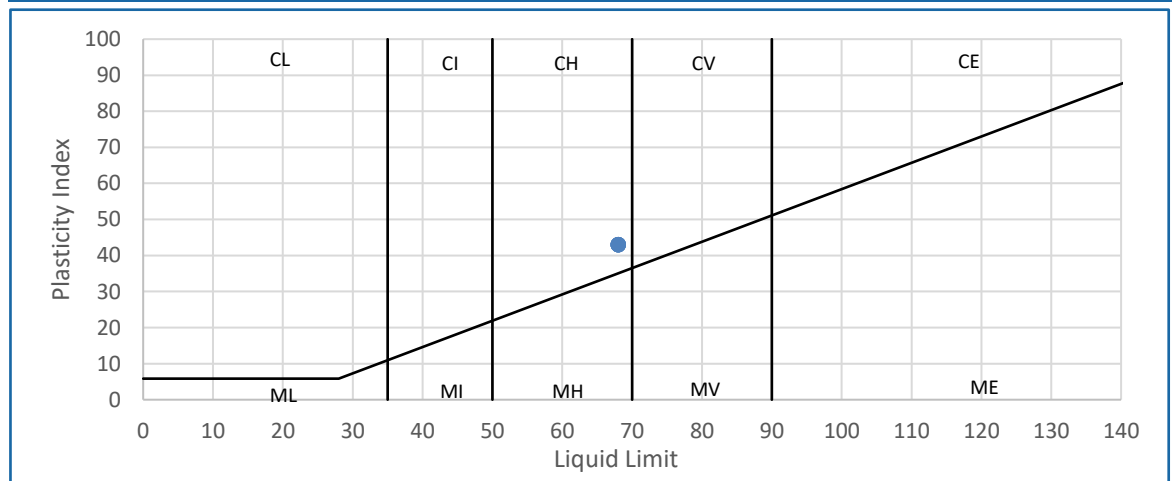


Samples from BH2

Lab Ref	Depth (m)	MC (%)	LL (%)	PL (%)	PI (%)	.425 mm(%)	mod. PI (%)	Av. Suc. (kPa)	Description
8	1.4	28.3	68	25	43	100	43		Firm to stiff brown/orange-brown CLAY with rare gravel and sand. Gravel is fine
9	1.9	31.9	68	25	43	100	43		Firm to stiff brown/orange-brown/grey veined CLAY with rare gravel and sand. Gravel is fine
10	2.4	32.8	68	25	43	100	43		Firm to stiff brown/orange-brown/grey veined CLAY with rare gravel and sandy coating. Gravel is fine and medium.
11	2.9	33.0	68	25	43	100	43		Firm, soft in places, brown/orange-brown/grey veined CLAY with rare gravel and sandy coating. Gravel is fine and medium.
12	3.4	33.2	68	25	43	100	43		Firm to stiff brown/grey veined CLAY with rare gravel and sand. Gravel is fine



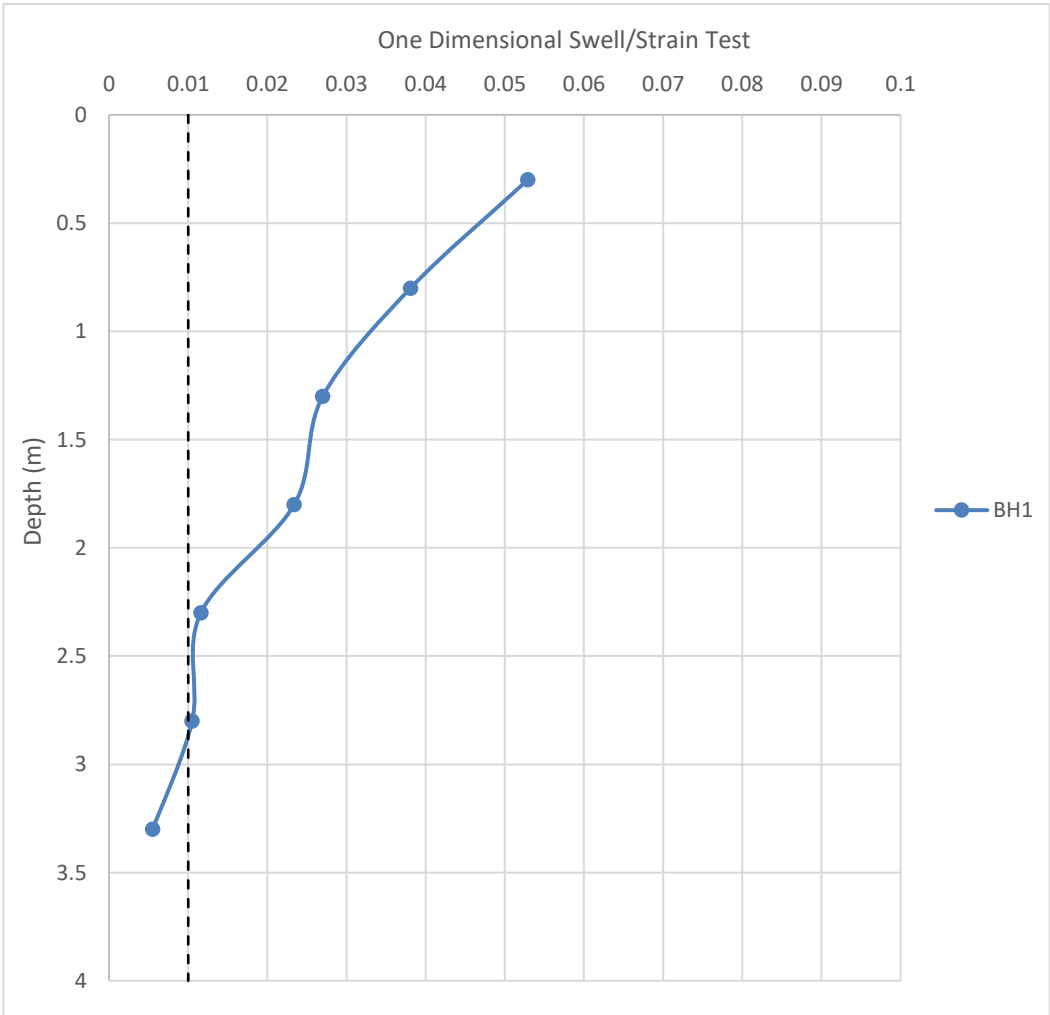
Plasticity Chart for Casagrande Classification



Summary of Oedometer Testing for BH1

Lab Ref	Depth (m)	Strain	Heave (mm)	Remarks
1	0.3	0.0529	7.9	
2	0.8	0.0381	9.5	
3	1.3	0.027	6.8	
4	1.8	0.0234	5.9	
5	2.3	0.0116	2.9	
6	2.8	0.0105	2.6	
7	3.3	0.0055	0	

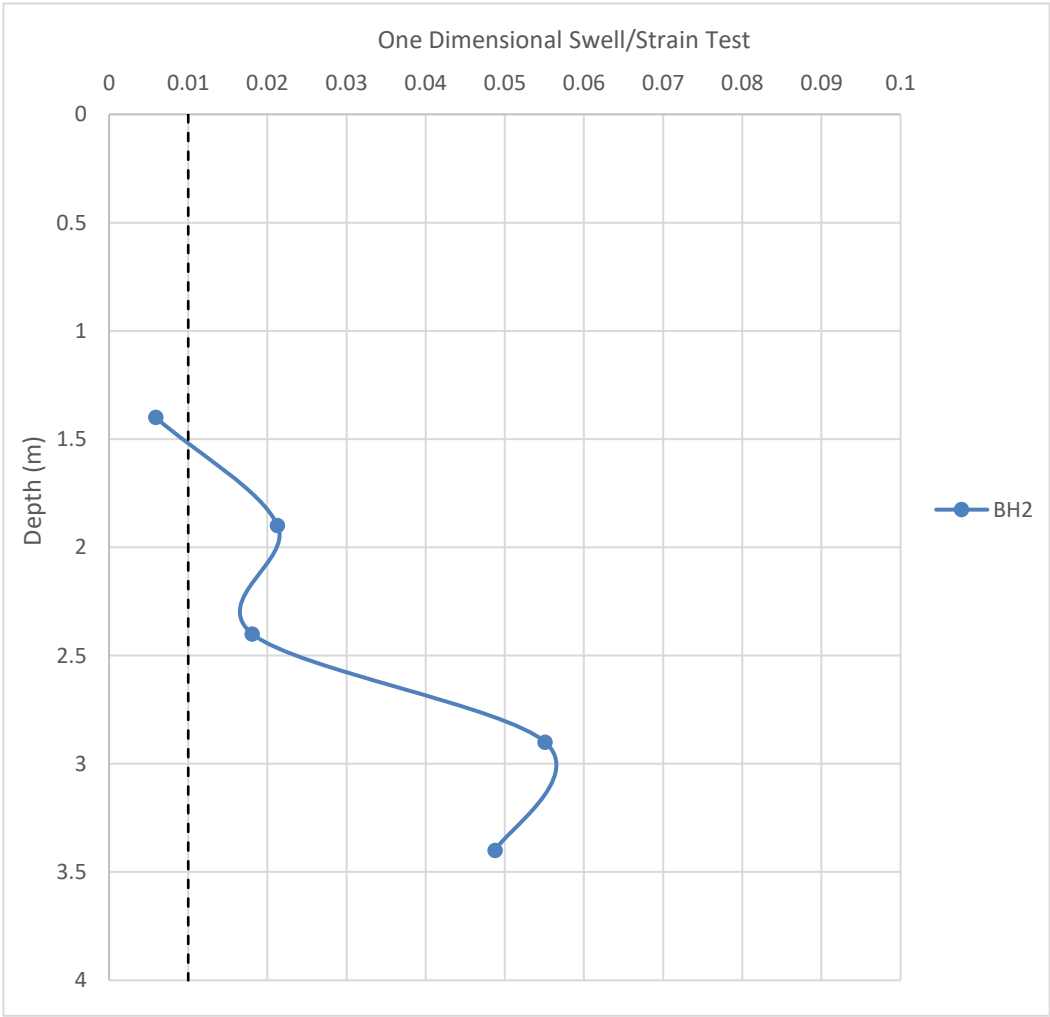
BH 1 estimate of heave	36mm
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Summary of Oedometer Testing for BH2

Lab Ref	Depth (m)	Strain	Heave (mm)	Remarks
8	1.4	0.0059	0	
9	1.9	0.0213	5.3	
10	2.4	0.0181	4.5	
11	2.9	0.0551	13.8	
12	3.4	0.0488	12.2	

BH 2 estimate of heave	36mm
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Deviating Samples

The table below details any samples deviating from laboratory procedure or deviating in condition to an extent whereby the validity of results may be affected. A test denoted "I" is likely to have had testing abandoned but where a test result has been provided a non-standard procedure may have been used, details of which will be provided upon request.

LAB REF	CONDITION	WC	ATT	SUC	OED
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Key

D	Delay in sample receipt
C	Contaminated sample
B	Sample not bagged correctly
S	Sample too sandy (unsuitable for testing)
G	Sample too gravelly (unsuitable for testing)
V	Sample too soft (unsuitable for preparation)
L	Sample too silty
I	Insufficient sample
O	Too much organic content (unsuitable for testing)
N	Non-standard procedure used
H	Sample depth too shallow
X	Testing result too similar to above sample

References

The following provides a brief interpretation of the test results by comparison of the results to published classifications. The Atterberg Limit test may be used to classify the plasticity of soils; the plasticity classes defined in BS5930:2015 "Code of Practice for Site Investigations" are as follows.

CL (ML)	CLAY and CLAY/SILT of Low plasticity
CI (MI)	CLAY and CLAY/SILT of Intermediate plasticity
CH (MH)	CLAY and CLAY/SILT of High plasticity
CV (MV)	CLAY and CLAY/SILT of Very High plasticity
CE (ME)	CLAY and CLAY/SILT of Extremely High plasticity
O	The letter O is added to prefixes to symbolise a significant proportion of organic matter.
NP	Non-plastic

The Plasticity Index (PI) Result obtained from the Atterberg Limit tests may also be used to classify the potential for volume change of fine soils, in accordance with the National House Building Council's standards - Chapter 4.2 (2003) "Building Near Trees", as summarised below.

Modified PI < 10	Non Classified.
Modified PI = 10 to <20	Low volume change potential.
Modified PI = 20 to <40	Medium volume change potential.
Modified PI = 40 or greater	High volume change potential.

The 2003 edition of Chapter 4.2 also permits use of the Plasticity Index without modification. The classifications for this are grouped by soil type (soils with similar visual soils description and using unmodified Plasticity Indices).

ROOT IDENTIFICATION

for Subsidence Management Services

2 Elms Avenue, Muswell Hill, London, N10 2JP

Client: Subsidence Management Services
Client Contact: Chris Sherwin
Claim Number: 4501396609
Client Reference: IFS-AVI-SUB-21-0093348
Policy Holder: Mr and Mrs Richard and Maria Corrigan
Report Date: 22 July 2021
Our Ref: R42480



Intec
Parc Menai, Bangor,
Gwynedd, North Wales
LL57 4FG
Tel: 01248 672652

Sub Sample	Species Identified		Root Diameter	Starch
TP/BH1:				
0.3-0.8m	<i>Platanus</i> spp.	1	1.5 mm	Abundant
2.3-2.8m	broadleaved species, too decayed for positive identification	2	1 mm	Absent
TP/BH2:				
1.4-1.7m	<i>Platanus</i> spp.	3	1 mm	Low

Comments:

- 1 - Plus 3 others also identified as *Platanus* spp.
- 2 - Plus 3 others the same.
- 3 - Plus 1 other also identified as *Platanus* spp.

Platanus spp. include London plane and Oriental plane.

Signed: R J Shaw

Unless we are otherwise instructed in writing, the above sample material will normally be disposed of 6 years after the date of this report.

Drainage Investigation Report

For Subsidence Management Services

Client Aviva

Risk Address: 2 Elms Avenue, Muswell Hill, London, N10 2JP

Visit Date: 13/08/2021

Client Reference: IFS-AVI-SUB-21-0093348

Our Reference: C61701 D21072

Report Date: 19/08/2021

Report Content: Front Page
Site Plan
CCTV Coding
Drain Overview
Quote



RUN	Start From :	MH1	Finish at :	Buried MH2	Pipe Ø:	100mm
A	Invert Level (m):	n/a	Invert Level (m):	n/a	Material:	Clay
STORM	Condition grade:	B	Direction:	Downstream	Responsibility:	Home Owner
<i>Distance</i>	<i>Code</i>	<i>Hydraulic Test - Not Tested</i>				
0.00	SN	Start Node from MH1				
0.00	CC	Crack Circumferential				
0.57	CC	Crack Circumferential				
1.22	CC	Crack Circumferential				
1.86	CC	Crack Circumferential				
3.04	CC	Crack Circumferential				
3.65	CC	Crack Circumferential				
5.09	FN	Finish Node at Buried MH2				
RUN	Start From :	MH1	Finish at :	Buried MH2	Pipe Ø:	100mm
B	Invert Level (m):	n/a	Invert Level (m):	n/a	Material:	Liner
FOUL	Condition grade:	A	Direction:	Downstream	Responsibility:	Home Owner
<i>Distance</i>	<i>Code</i>	<i>Hydraulic Test - Not Tested</i>				
0.00	SN	Start Node from MH1				
2.58	JN	Junction at 9 o'clock				
4.90	FN	Finish Node at Buried MH2				
RUN	Start From :	MH1	Finish at :	Vent Pipe	Pipe Ø:	100mm
C	Invert Level (m):	n/a	Invert Level (m):	n/a	Material:	Clay
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner
<i>Distance</i>	<i>Code</i>	<i>Hydraulic Test - Not Tested</i>				
0.00	SN	Start Node from MH1				
0.40	FN	Finish Node at Vent				
RUN	Start From :	MH1	Finish at :	RWG1	Pipe Ø:	100mm
D	Invert Level (m):	n/a	Invert Level (m):	n/a	Material:	Plastic
STORM	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner
<i>Distance</i>	<i>Code</i>	<i>Hydraulic Test - Pass</i>				
0.00	SN	Start Node from MH1				
0.57	LR	Line of drain deviates right 90°				
5.97	LR	Line of drain deviates right 90°				
7.03	FN	Finish Node at RWG1				
RUN	Start From :	MH1	Finish at :	FWG1	Pipe Ø:	100mm
E	Invert Level (m):	n/a	Invert Level (m):	n/a	Material:	Plastic
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner
<i>Distance</i>	<i>Code</i>	<i>Hydraulic Test - Pass</i>				
0.00	SN	Start Node from MH1				
0.34	LR	Line of drain deviates right 90°				
1.63	FN	Finish Node at FWG1				

Address:

2 Elms Avenue, Muswell Hill, London, N10 2JP

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CCTV Survey

SubsNetUK

[illegible]

The CCTV survey was undertaken in general accordance with the Manual of Sewer Classification and the WRc Drain Repair Book.

The following presents a summary of the findings with recommendations to repair and/or return the drains to a serviceable state, where necessary.

Drain Run A: MH1 Downstream to MH2 (Storm)

Pipe Diameter: 100mm

Responsibility: Home Owner

Hydraulic Pressure Test: Not Tested

CCTV Survey Result: Structural damage

Recommended Repair:

1) To prepare the drain line and insert 4m of structural liner to cover defects.

Drain Run B: MH1 Downstream to MH2 (Foul)

Pipe Diameter: 100mm

Responsibility: Home Owner

Hydraulic Pressure Test: Not Tested

CCTV Survey Result: No structural damage

Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run C: MH1 Upstream to Vent Pipe

Pipe Diameter: 100mm

Responsibility: Home Owner

Hydraulic Pressure Test: Not Tested

CCTV Survey Result: No structural damage

Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run D: MH1 Upstream to RWG1

Pipe Diameter: 100mm

Responsibility: Home Owner

Hydraulic Pressure Test: PASS

CCTV Survey Result: No structural damage

Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run E: MH1 Upstream to FWG1

Pipe Diameter: 100mm

Responsibility: Home Owner

Hydraulic Pressure Test: PASS

CCTV Survey Result: No structural damage

Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Address:

2 Elms Avenue, Muswell Hill, London, N10 2JP

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Drainage Overview 2

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Drain Run F: MH1 Upstream to Possibly Disused

Pipe Diameter: 100mm

Classification: General

Responsibility: Home Owner
Hydraulic Pressure Test: Not Tested
CCTV Survey Result: No structural damage but unable to pass bend
Recommended Repair:

- 1) Excavate and replace 1m of pipework upstream of MH1 to remove bend
- 2) Carry out a further CCTV survey upstream and report findings

Drain Run G: RWG2 Downstream to Soakaway
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Not Tested
CCTV Survey Result: No structural damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

NOTE: The re-instatement will be carried out on a like-for-like basis but where concrete or tarmac has been re-instated these surfaces will not match to the existing surface and will be seen as its new material.

Water Main Test	From	To	Result	Notes
	ESV	ISV	PASS	No drop in 10 minutes

Address:	2 Elms Avenue, Muswell Hill, London, N10 2JP
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	Quote	
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RUN / LOCATION: RUN A					
Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1133	Van pack HPWJ & CCTV in preparation of lining	nr	£148.44	1.00	£148.44

Classification: General

UK1135	Drain Lining - Initial Set-Up Fee (0-3.0m)	nr	£332.64	1.00	£332.64
UK1140	Drain Lining - 100mm. Install Structural liner into existing 100mm underground drain. 3mm Wall thickness.	m	£55.52	1.00	£55.52
Total (Excl VAT)					£536.60

RUN / LOCATION: **RUN F**

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK0605	Excavate & remove isolated length. Replace in new 110mm PVCu. Bed, surround & backfill. n.e. 1000mm deep.	nr	£131.47	1.00	£131.47
UK0880	Short Radius Bend. Remove existing item and replace with new 110mm PVCu.	nr	£14.89	2.00	£29.78
UK1060	Extra over pipework for surrounding drain run in 100mm thick concrete.	m	£14.40	1.00	£14.40
UK0025	Protection Temporary works to floors, 1000 gauge polythene.	m2	£1.79	2.00	£3.59
UK8120300	Hardcore Filling to excavations over 250 mm average thick.	m	£35.35	1.00	£35.35
UK2050005	Disposal by hand excavated contaminated/saturated material off site.	m3	£45.30	1.00	£45.30
UK1045	Removal, set aside and reinstatement of concrete slab paving n.e 100mm thick.	m2	£24.61	1.00	£24.61
	CCTV survey of underground drainage & report (where undertaken as part of other drainage works on site)	nr	£165.00	1.00	£165.00
Total (Excl VAT)					£449.50

REPAIR ESTIMATE TOTALS:

Run / Location	Amount (£)
RUN A	£536.60
RUN F	£449.50
Total (Excl VAT)	£986.10

Address: 2 Elms Avenue, Muswell Hill, London, N10 2JP