Auger House, Cross Lane,
Wallasey, Wirral, CH45 8RH

Tel: 0151 630 5886
Fax: 0151 630 5884

admin@auger.co.uk
www.auger.co.uk

Site Investigation Report

Auger Ref:

176136.1.2.BSI

Job Information	
Client	Structural Surveys Ltd
Client ref	QG1S1287571
Visit date	07/11/2024
Report date	29/11/2024

Job Summary

- CCTV survey undertaken. Read more.
- Drainage repairs required. Read more.
- Trial Hole depth not reached. Read more.

Job Information

Overview

Brief	Auger were commissioned by Structural Surveys Ltd to undertake a site investigation and CCTV inspection of the underground drainage within the area of concern (AOC) at the property.

Findings

Trial Hole Findings	**Trial Hole 1** Within TH1 we revealed the footing but we were unable to reach the required depth in TH1 because we encountered rocky ground which our engineer could not auger through at 1.4m. The Trial Hole was excavated in the proposed location. We took soil and root samples. These measurements are shown in Trial Hole Log 1 below. **Trial Hole 2** Within TH2 we revealed the footing but we were unable to reach the required depth in TH2 because we encountered rocky ground which our engineer could not auger through at 1.4m. The Trial Hole was excavated in the proposed location. We took soil and root samples. These measurements are shown in Trial Hole Log 2 below. **Aborted Trial Hole** The proposed trial hole at the front of the property was to gain the footing of the main house and the bay window, however upon attending site we found a large amount of vegetation preventing access, we also found there is a cellar in the area. If the loss adjuster wishes for the trial hole in this location a specialist should remove large amounts of vegetation and 2 men can return to excavate a deep trial hole in the area,
Drain Survey	We carried out a CCTV survey of the below ground drainage system, our findings of which are as follows: **Line 1 - From MH1 upstream to WG1** Our survey of line 1 revealed root ingress and the WG connection bossed into the main line restricting flow and allowing an escape of water, we have therefore been unable to survey upstream on the main line. **Line 2 - From MH1 upstream to RWG1** Our survey of line 2 revealed root ingress to the cast iron pipework 5m upstream to the gully. The survey also revealed broken pipework directly upstream of MH1 **Line 3 - From MH1 downstream to MH2** Our survey of line 3 revealed no significant defects to the pipework on this line which could be allowing an escape of water. This pipework has previously been lined. We found MH2 was holding water, extensive jetting was successful in clearing the main trap and also revealed the rodding cap stuck in the line prevent flow which we have now removed, there is a connection within the MH we have been unable to survey due the MH being 1.7m deep, this line runs to a WC internally.

Recommendations

Refer Back to Client

It is recommended that the following repairs are carried out to prevent an escape of water from the system:

Line 1
Excavate and replace WG1 and 1m of 100mm pipework including a branch connection at a depth no greater than 1.0m through concrete.

Install a 100mm patch directly upstream of MH1 to the branch.

We will then need to conduct a further CCTV investigation upstream on this line.

Line 2
Excavate and replace RWG1 and 3m of 100mm pipework at a depth no greater than 1.0m through concrete.

Install a 100mm patch liner directly upstream of MH1 to seal the pipework into the cast iron.

MH2
Deep MH entry required to survey the connection.

Please note that the further CCTV investigation may reveal additional defects to the drainage system. This will be reported whilst on-site and could potentially cause an increase in repair costs and provide further inconvenience to the customer/occupants.

Auger have not allowed or will not be held responsible for any alteration or modification to the above ground drainage following the removal of the existing gully and reinstatement of a new gully. The customer must ensure that the above ground drainage correctly expels into the gully pot and avoids overcrowding the gully with numerous downpipes which could lead to the gully overflowing.

During the clean-up/reinstatement process we will endeavour to leave the area we are working in clean and tidy and as close to how we found it as possible. There will always be an element of general debris/mud/waste that will build up in the area which cannot be prevented. There may however be elements of this process that are outside our remit i.e., Repainting or cleaning. If this is the case, then we will need to speak to the customer's insures to help in this regard.

We will now refer the claim back to the client in order to progress the claim.

Repair Caveats

Once repairs have been undertaken the customer should ensure the drainage system is periodically inspected in the future for any deterioration and kept free flowing / free of blockages. Any damage noted during future inspections should be repaired immediately in accordance with current Building Regulations.

With any repair process, complications and unforeseen circumstances can arise. These scenarios will be reported whilst on-site and could potentially cause an increase in repair costs and inconvenience.

Where any excavation reinstatement of the surface is required, the reinstatement will always attempt to match the previous surface patterns and colouring, however we cannot guarantee an exact match.

If any of the above lining recommendations fail then excavation and replacement of the pipework would be required. This would severely increase the cost of repairs and would provide greater inconvenience to the residents. The relining of a severe joint displacement is normally unadvised due to the potential for complications in the future.

Recommendations have been made to reline or patch reline sections of the drainage system at the property. This process combines a number of chemicals in a resin, which then harden in a fibreglass matting to create a new section of drain within the original. The reaction creates ***a strong smell which can linger for up to 72 hours*** *once works are completed - this is not harmful. It is recommended that any areas where smells are experienced are kept well ventilated until the odour subsides.*

The above recommendations allow for the replacement of gullies & connected underground drainage only. The insured should be made aware that the aesthetic appearance of this gully may be different from what is currently in place.

Photographs

Trial Hole 1

Fig 1.1: Trial Hole 1 Location

Fig 1.2: Trial Hole 1 Footing

Trial Hole 2

Fig 2.1: Trial Hole 2 Location

Fig 2.2: Trial Hole 2 Footing

CCTV Stills

Fig 3.1: Root ingress and bossed in connection

Site Photos

Fig 4.1: Rear of the property

Fig 4.2: Vegetation in the proposed area of trial hole

Fig 4.3: Vegetation to be removed

Fig 4.4: MH2 blocked, now clear

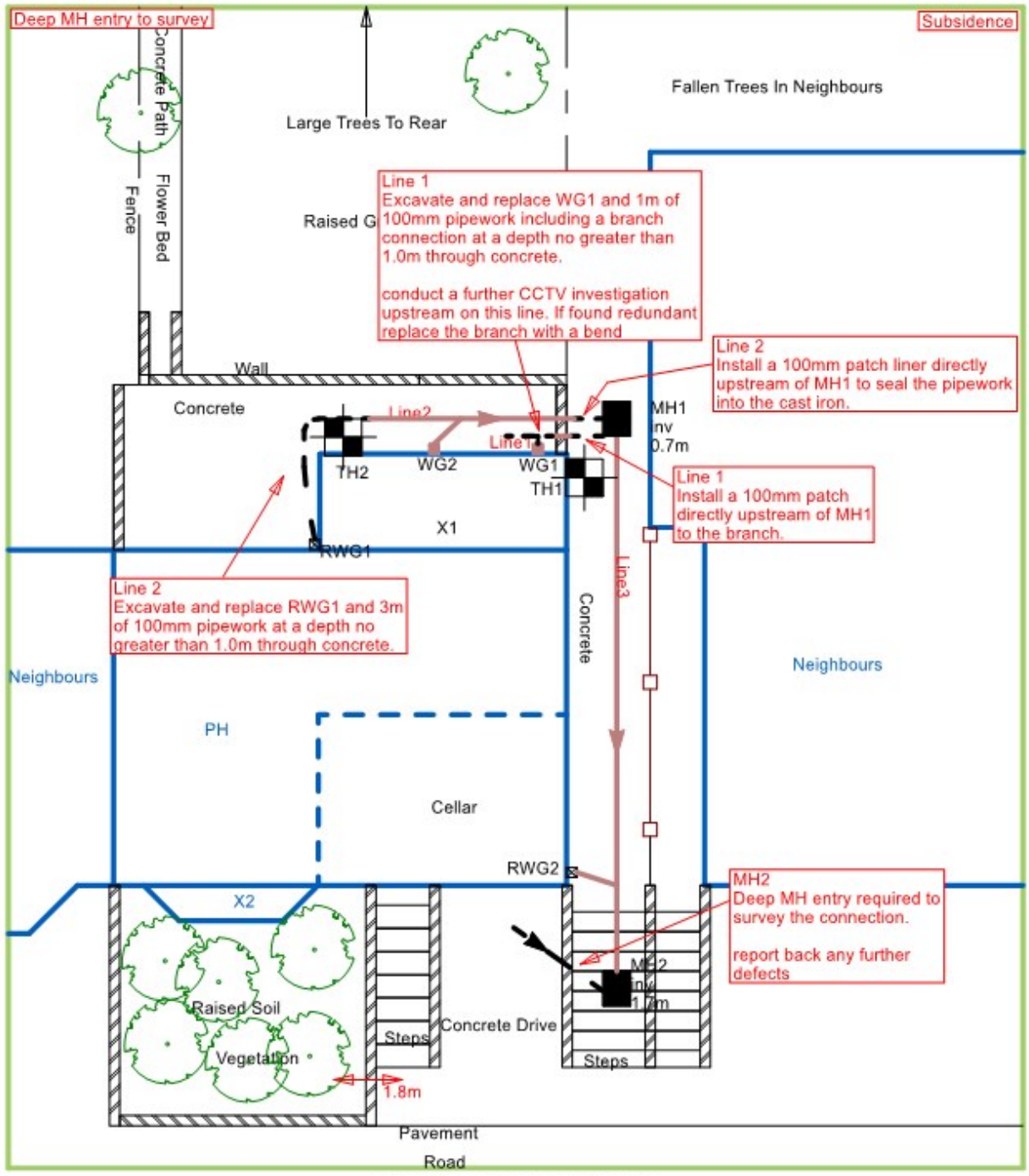
Fig 4.5: MH1

auger

Proposed Layout

Job Ref: 176136.1

Date: 08/11/2024



FRONT OF PROPERTY

This drawing should be used for diagrammatic purposes only. Auger are not responsible or liable for any 3rd party works undertaken using the details outlined in this drawing. Confirmation of the drainage configuration can only be confirmed by excavation or detailed technical survey.

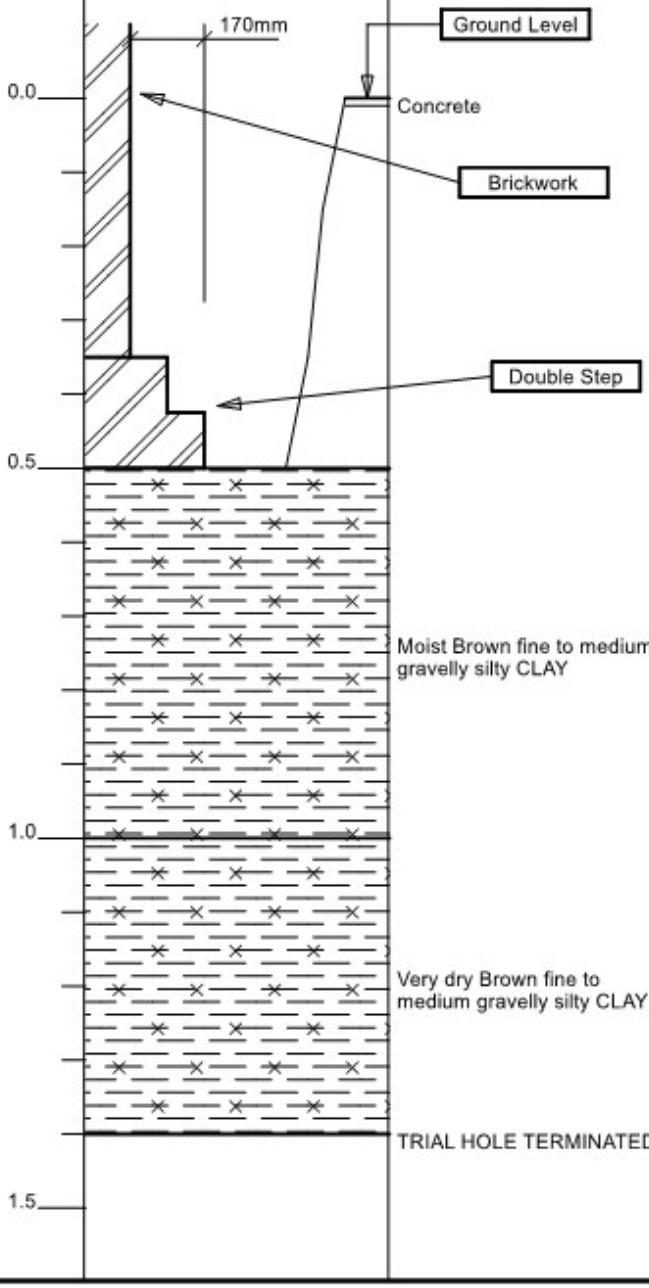
LEGEND

- = Manhole (MH)
- = Inspection Chamber (IC)
- = Inspection Point (IP)
- = Blockage / Collapse
- = Soil Vent Pipe (SVP) / WC
- = Combined Waste Gully (CWG) / Foul Waste Gully (FWG)
- = Rainwater Gully (RWG)
- = Rainwater Pipe (RWP)
- = Lines not to be repaired
- = Lines to be repaired
- = Assumed water mains feed
- = Walls
- = Fences
- = Building Outline
- = Trial hole
- = Borehole
- = Direction of flow
- = Gate / Door
- = Shrubs / Bush
- = Hedge
- = Tree
- = Steps

Trial Hole Log No.1

Location: Rhs rear corner of extension

Job Ref: 176136.1.2.BSI

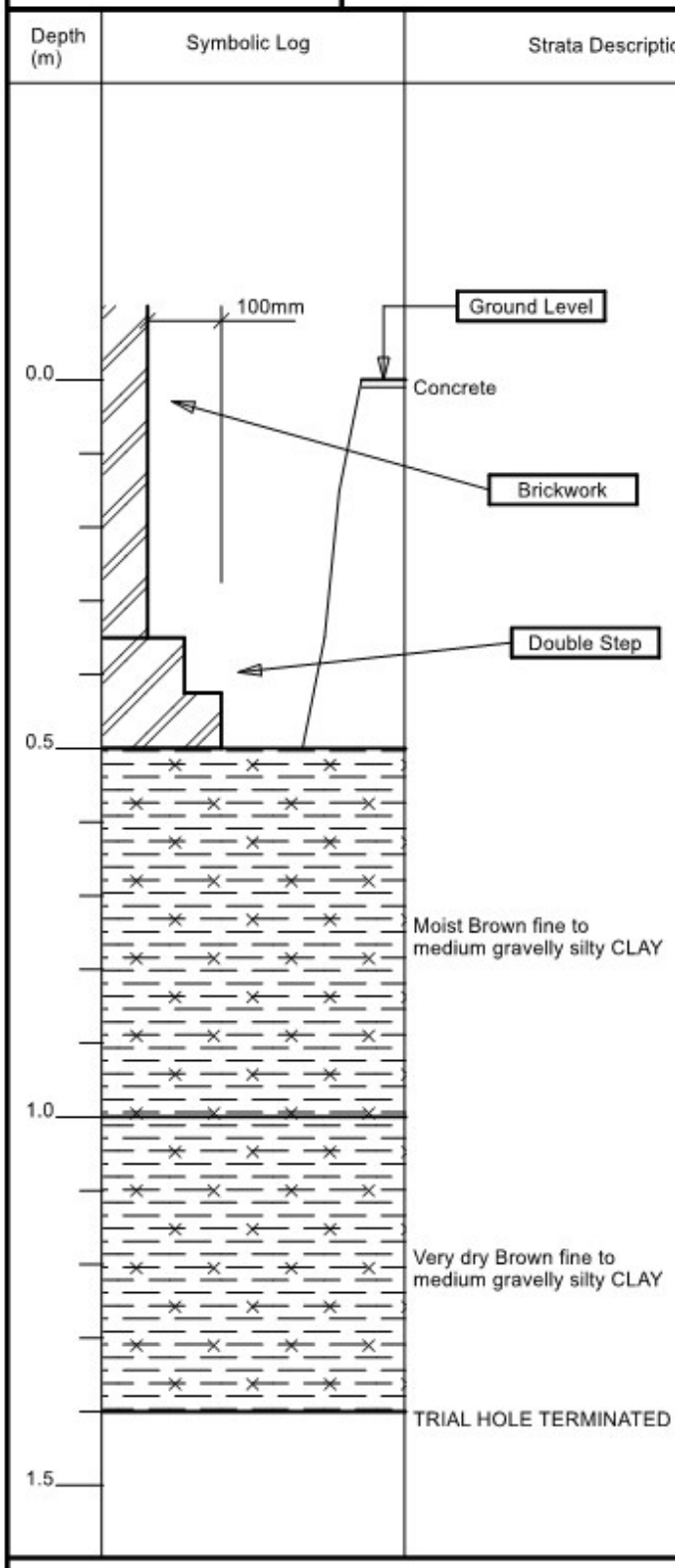


Depth (m)	Symbolic Log	Strata Description	Insitu Tests SV(19)	Soil Sample	Root Sample
0.0		Ground Level; 170mm; Concrete; Brickwork; Double Step			
0.5		Moist Brown fine to medium gravelly silty CLAY	74kpa	Soil @ 0.5m	Root @ 0.5m
1.0		Very dry Brown fine to medium gravelly silty CLAY	140kpa	Soil @ 1m	Root @ 1m
1.5		TRIAL HOLE TERMINATED			

Trial Hole Log No.2

Location: Rear left corner of extension

Job Ref: 176136.1.2.BSI



Insitu Tests		Soil Sample	Root Sample
SV(19)			
82kpa		Soil @ 0.5m	Root @ 0.5m
140kpa		Soil @ 1m	Root @ 1m

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**Geotechnical Testing Analysis Report**	auger environmental + claims mgmt + subsidence + drainage +
Unit 3 & 4, Heol Aur, Dafen Ind Estate, Dafen Llanelli, Carmarthenshire, SA14 8QN	***The testing results contained within this report have been performed by GSTL a UKAS accredited laboratory on behalf of Auger.**	**Auger House, Cross Lane, Wallasey, Wirral, CH45 8RH**

Summary Of Claim Details

Policy Holder	
GSTL Job Reference	75802
SI Date	
Issue Date	
Report Date	19/11/2024
Auger Reference	176136.1.4.RSS
Insurance Company	Folgate Insurance
LA Claim Reference	QG1S1287571
LA Co. Reference	Structural Surveys Ltd

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Checked and approved	19/11/2024	R.John

GSTL
GEOTECHNICAL SITE & TESTING LABORATORIES

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.4 & 5.3)
DESCRIPTIONS

auger
environmental
claims mgmt
subsidence
drainage

GSTL Contract Number	**75802**	
Report Date	**19/11/2024**	
Auger Reference	**176136.1.4.RSS**	

TH Trial Hole	Sample Type	Depth (m)	Sample Description
TH1	D	0.50	Brown fine to medium gravelly silty CLAY
TH1	D	1.00	Brown fine to medium gravelly silty CLAY
TH2	D	0.50	Brown fine to medium gravelly silty CLAY
TH2	D	1.00	Brown fine to medium gravelly silty CLAY

Test Operator
Jason Smith

GSTL
GEOTECHNICAL SITE & TESTING LABORATORIES

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.4 & 5.3)

auger
environmental + claims mgmt + subsidence + drainage +

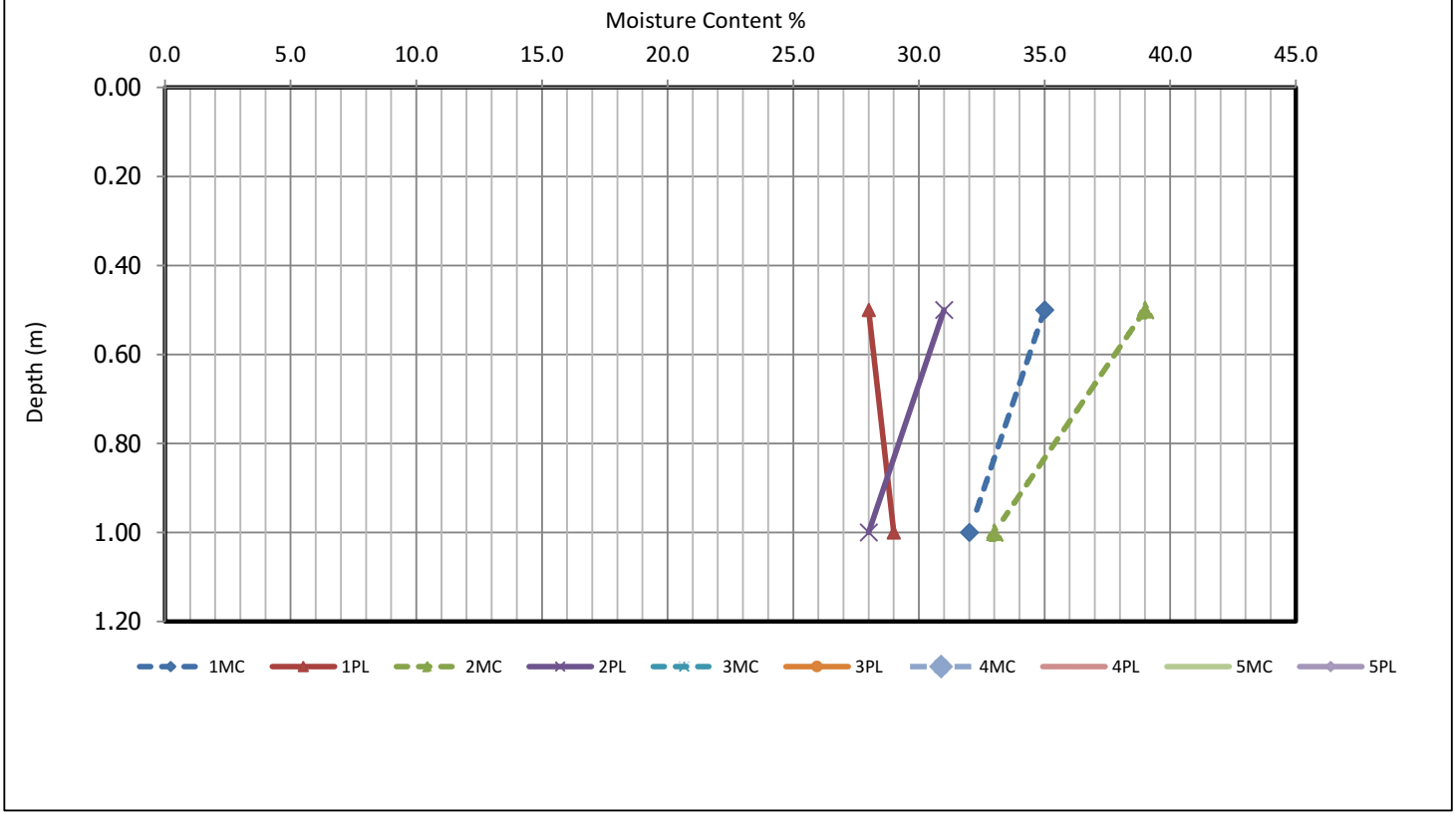
GSTL Contract Number	**75802**	
Report Date	**19/11/2024**	
Auger Reference	**176136.1.4.RSS**	
Remarks	NP - (Non-Plastic), # - (Liquid Limit and Plastic Limit Wet Sieved)	

TH Trial Hole	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing .425mm %	NHBC Chapter 4.2	Remarks
TH1	D	0.50	35	83	28	55	98	HIGH VCP	CV Very High Plasticity
TH1	D	1.00	32	81	29	52	99	HIGH VCP	CV Very High Plasticity
TH2	D	0.50	39	82	31	51	98	HIGH VCP	CV Very High Plasticity
TH2	D	1.00	33	93	28	65	98	HIGH VCP	CE Extremely High Plasticity

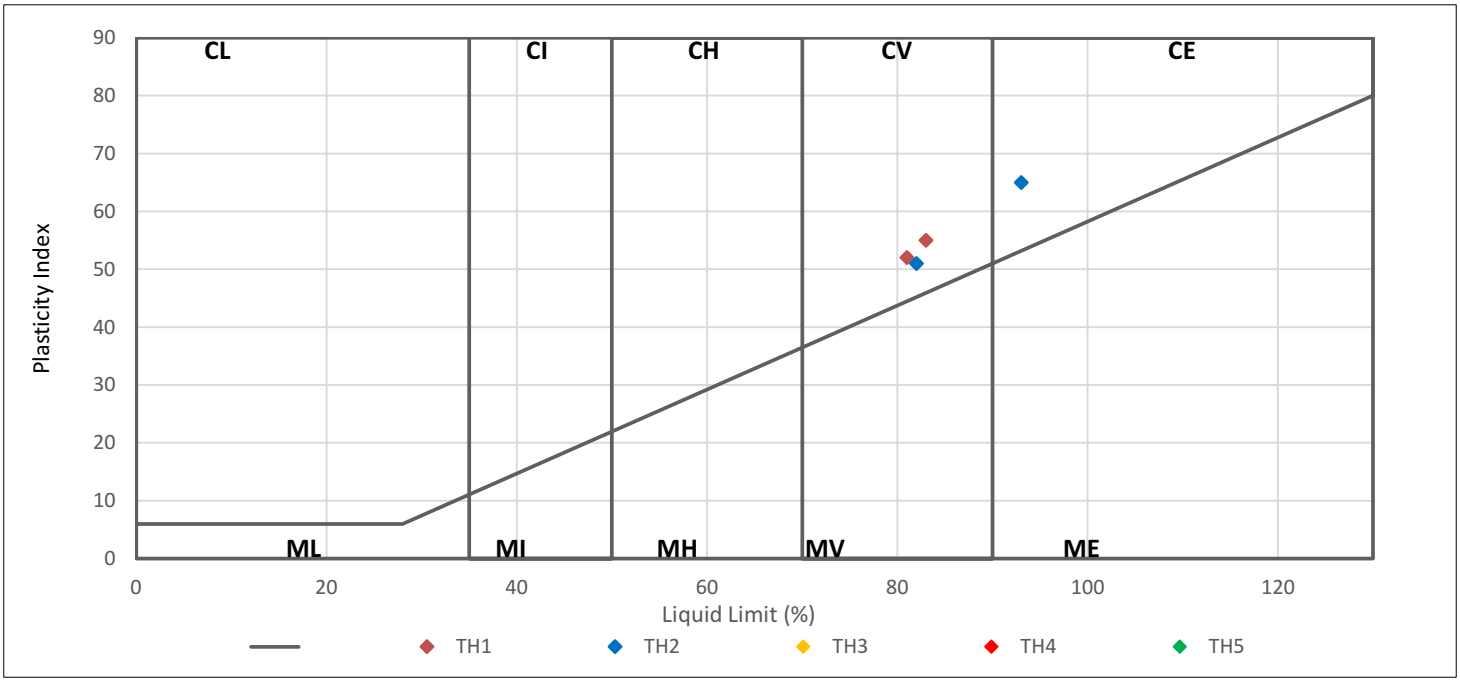
Modified Plasticity Index (PI) <10	: Non Classified
Modified PI = 10 to <20	: Low volume change potential (LOW VCP)
Modified PI = 20 to <40	: Medium volume change potential (Med VCP)
Modified PI = 40 or greater	: High volume change potential (HIGH VCP)

The Atterberg Limits May also be used to classify the volume change potential of fine soils using the National House building system, as given in the NHBC's Standards Chapter 4.2 (2003) "Building Near Trees"

Test Operator
Jason Smith



PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Modified Plasticity Index (PI) <10	: Non Classified
Modified PI = 10 to <20	: Low volume change potential (LOW VCP)
Modified PI = 20 to <40	: Medium volume change potential (Med VCP)
Modified PI = 40 or greater	: High volume change potential (HIGH VCP)

The Atterberg Limits May also be used to classify the volume change potential of fine soils using the National House building system, as given in the NHBC's Standards Chapter 4.2 (2003) "Building Near Trees"

Test Operator
Jason Smith

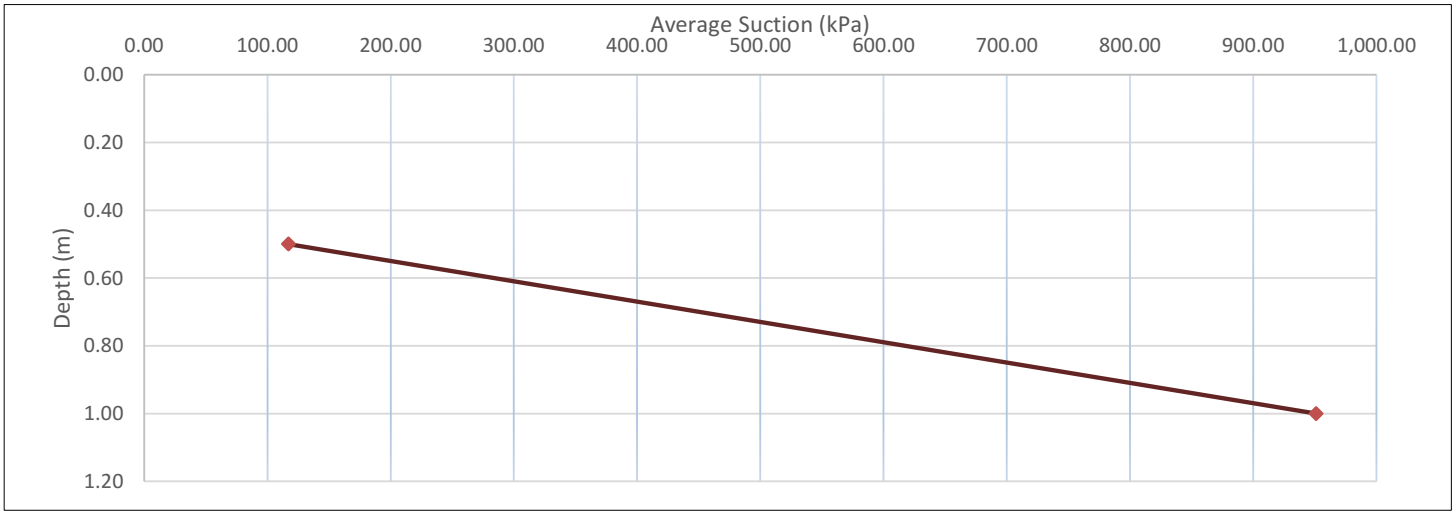
GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	SUMMARY OF SOIL CLASSIFICATION TESTS, BRE Information Paper IP 4/93 February 1993 (CI/SfB p1), BRE Information Paper Digest 412 ci/sFb (A3s) February 1996	auger environmental claims mgmt subsidence drainage
GSTL Contract Number	**75802**	
Report Date	**19/11/2024**	
Auger Reference	**176136.1.4.RSS**	
Remarks	D - Disturbed (Recompacted 2.5kg Rammer), U - Undisturbed Sample	

TH Trial Hole	Depth (m)	Filter Paper Location	Filter Paper	Sample Prep Method	Test Duration (Days)	Water Content (%)	Soil Suction Pk (kPa)	Average Soil Suction Pk (kPa)	Cumalative Heave Potential (mm) from bottom of the hole
TH1	0.50	Top	I	D	5	44.5	119	117	23
TH1		Middle	II	D	5	44.6	117		
TH1		Bottom	III	D	5	44.7	115		
TH1	1.00	Top	I	D	5	29.9	958	951	17
TH1		Middle	II	D	5	29.9	951		
TH1		Bottom	III	D	5	30.0	945		

Heave potential is calculated from the bottom of the hole and heaves above the bottom of the hole are reported as a cumalative value.

The values reported for heave above only apply to the strata the suction and plasticity have been performed on. The shallowest depth reported is assumed to be a strata thickness to GL and Heave is calculated based on that layer thickness, if the next sample is in 0.5m increments the heave is calculated based on the layer thickness of 0.5m and depths 1m from the sample above will include heave over 1m.

Consideration should be made for other stratas where values are not reported and when working out the heave potential over the entire trial hole.



Test Operator
Jason Smith

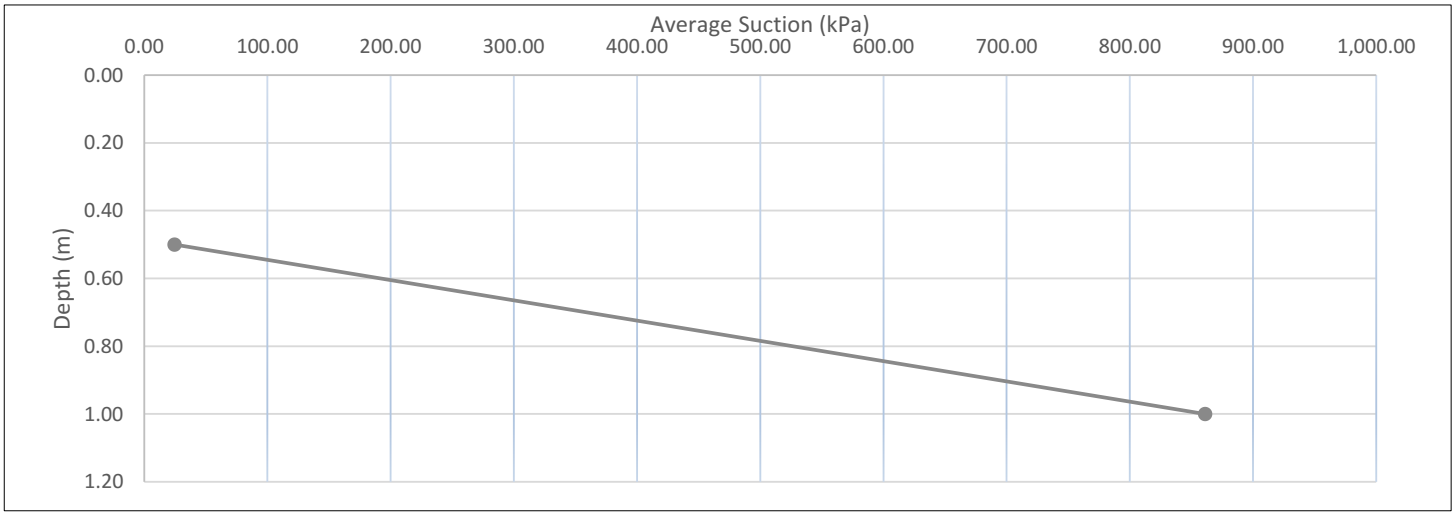
GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	SUMMARY OF SOIL CLASSIFICATION TESTS, BRE Information Paper IP 4/93 February 1993 (CI/SfB p1), BRE Information Paper Digest 412 ci/sFb (A3s) February 1996	auger environmental + claims mgmt + subsidence + drainage +
GSTL Contract Number	**75802**	
Report Date	**19/11/2024**	
Auger Reference	**176136.1.4.RSS**	
Remarks	D - Disturbed (Recompacted 2.5kg Rammer), U - Undisturbed Sample	

TH Trial Hole	Depth (m)	Filter Paper Location	Filter Paper	Sample Prep Method	Test Duration (Days)	Water Content (%)	Soil Suction Pk (kPa)	Average Soil Suction Pk (kPa)	Cumalative Heave Potential (mm) from bottom of the hole
TH2	0.50	Top	I	D	5	75.4	25	24.6	22
TH2	0.50	Middle	II	D	5	75.7	25		
TH2	0.50	Bottom	III	D	5	75.9	24		
TH2	1.00	Top	I	D	5	30.6	868	861	22
TH2	1.00	Middle	II	D	5	30.6	861		
TH2	1.00	Bottom	III	D	5	30.7	854		

Heave potential is calculated from the bottom of the hole and heaves above the bottom of the hole are reported as a cumalative value.

The values reported for heave above only apply to the strata the suction and plasticity have been performed on. The shallowest depth reported is assumed to be a strata thickness to GL and Heave is calculated based on that layer thickness, if the next sample is in 0.5m increments the heave is calculated based on the layer thickness of 0.5m and depths 1m from the sample above will include heave over 1m.

Consideration should be made for other stratas where values are not reported and when working out the heave potential over the entire trial hole.



Test Operator
Jason Smith

Richardson's Botanical Identifications

Root identification
Vegetation surveys
Tree/Building investigations
Plant taxonomy

Dr Ian B K Richardson
BSc, MSc, PhD, MRSB, FLS
James Richardson
BSc (Hons. Biology)

Enterprise House
49-51 Whiteknights Road
Reading
RG6 7BB
[redacted]

Auger Solutions
Auger House
Cross Lane
WALLASEY
Wirral CH45 8RH

Your ref: **176136-1-3**

Our ref: 89/0309

22/11/2024

Dear Sirs

Root ID

The samples you sent in relation to the above on 07/11/2024 have been examined. Their structures were referable as follows:

TH1, 0.5m		
2 no.	Examined root: the family SALICACEAE (Salix (Willows) and Populus (Poplars)).	Alive, recently*.
1 no.	Examined root: a SHRUB. We cannot rule out BUDDLEJA (bushes, sometimes large, with spikes consisting of tiny pink, white or blue scented flowers) - or - ARBUTUS (includes 'Strawberry tree' - large evergreen shrubs/small trees with tiny bell-shaped flowers and strawberry-like fruits that appear in Autumn). Slightly tentative.	Alive, recently*.
5 no.	Unfortunately all with insufficient cells for identification.	
TH1, 1.0m		
3 no.	Examined root: the family SALICACEAE (as listed above).	Alive, recently*.
2 no.	Both samples revealed too few cells for microscopic identification.	
TH2, 0.5m		
4 no.	Examined root: the family SALICACEAE (as listed above).	Alive, recently*.
1 no.	Examined root: FRAXINUS (Ash).	Alive, recently*.
TH2, 1.0m		
3 no.	Examined root: the family SALICACEAE (as listed above).	Alive, recently*.
2 no.	Both samples revealed too few cells for microscopic identification.	

Click here for more information: FRAXINUS SALICACEAE

I trust this is of help. Please call us if you have any queries; our Invoice is enclosed.

Yours faithfully

[redacted]

Dr Ian B K Richardson

* Based mainly on the Iodine test for starch. Starch is present in some cells of a living woody root, but is more or less rapidly broken down by soil micro-organisms on death of the root, sometimes before decay is evident. This result need not reflect the state of the parent tree.

Identified with no information on vegetation, on or off site.