

Site Investigation Report

Auger Ref:

138280.1.USI



Job Information

Client	Crawford & Co
Client ref	SU2201802
Visit date	01/08/2022
Report date	01/08/2022

Job Summary

- ✓ CCTV survey undertaken. [Read more.](#)
- ! Drainage repairs required. [Read more.](#)
- ✓ 2 trial holes undertaken. [Read more.](#)



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We invest in people Gold

Job Information

Overview

Brief	Auger were commissioned by Crawford & Co to undertake a site investigation and CCTV inspection of the underground drainage within the area of concern (AOC) at the property.
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Findings

Trial Hole Findings	TH1 and TH2 were completed in the proposed locations and the requested samples were collected whilst on site.
Visual Inspection	A visual inspection of the site revealed MH1, which was noted to be constructed out of brick, has a defective drainage channel. This was a large diameter LWA main. The visible defects identified are affecting the function of the system.
Drain Survey	We carried out a CCTV survey of the below ground drainage system, our findings of which are as follows: Line 1 - From SVP downstream to MH1 Our survey of line 1 revealed joint displacements (see fig 3.1) Line 2 - From MH2 upstream to the head of the line (disused) Our survey of line 2 revealed no significant defects to the pipework on this line which could be allowing an escape of water. Line 3 - From MH1 upstream to WG Our survey of line 3 revealed no significant defects to the pipework on this line which could be allowing an escape of water. The above mentioned defects to the below ground drainage system have been caused by ground movement.

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 the SVP restbend and 1m of 100mm pipework directly downstream at a depth no greater than 1.0m through concrete. Then install 3m of 100mm liner directly downstream of the excavation. Our investigations revealed potential defects within drainage lines that we understand to be LWA assets. These defects could be leading to an escape of water into the surrounding ground. If the Loss Adjuster/Engineer is of the opinion that these defects are an influence in the cause of subsidence to the building structures, we recommend you inform the LWA of the problem and request that they (the LWA) inspect and repair their asset. We cannot undertake any further inspection or repair of LWA assets without the express approval of the LWA. We will now refer the claim back to the client in order to progress the claim.
Repair Caveats	<i>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.</i> <i>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.</i> <i>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.</i> <i>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. If any issues arise in the future regarding this pipework, then excavation within the property would be required to replace the defective area of pipework. This in turn would result in major inconvenience to the occupier and a potentially large repair bill.</i> <i>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.</i>

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

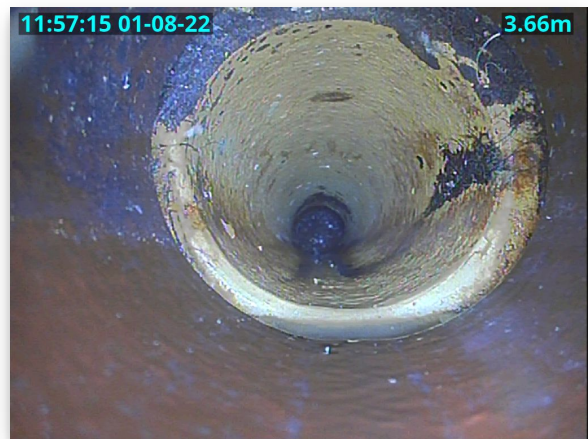


CCTV Stills

Fig 3.1: Line 1



Fig 3.2: Line 1



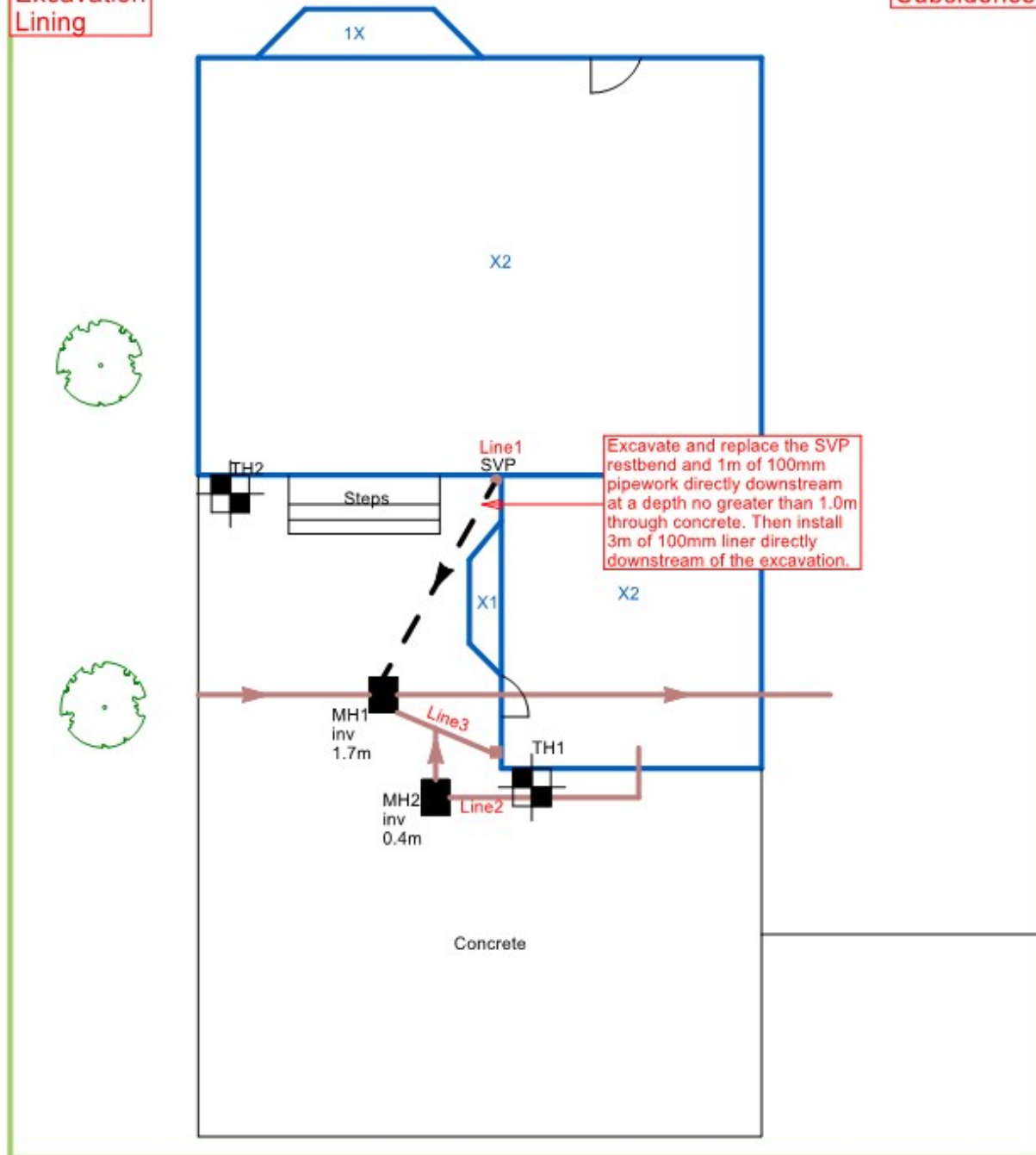
Site Photos

Fig 4.1: Excavation Location



Excavation
Lining

Subsidence



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

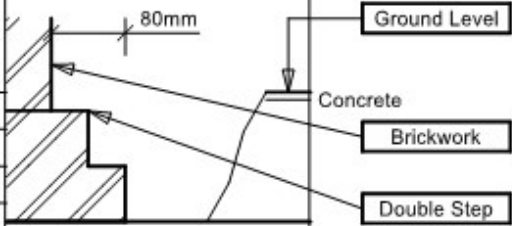
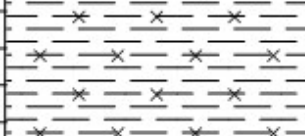
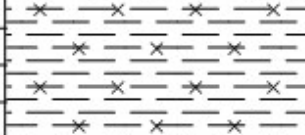
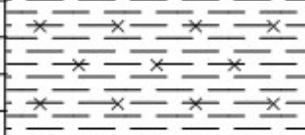
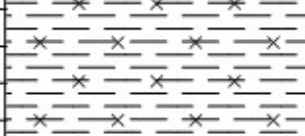
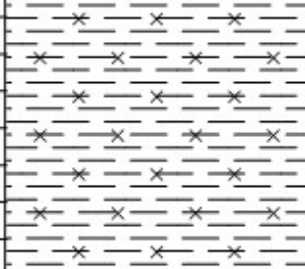
				
				
				
				
				
				



Trial Hole Log No.1

Location: Rear right corner of rear projection

Job Ref:
138280.1.USI

Depth (m)	Symbolic Log	Strata Description	Insitu Tests		Soil Sample	Root Sample
			SV(19)			
0.0		Ground Level Concrete Brickwork Double Step				
0.5			70kpa		Soil @ 0.35m	
1.0			76kpa		Soil @ 0.85m	
1.5			82kpa		Soil @ 1.35m	
2.0		Brown fine to medium gravelly silty CLAY	86kpa		Soil @ 1.85m	
2.5			70kpa		Soil @ 2.35m	
3.0		TRIAL HOLE TERMINATED	64kpa 64kpa		Soil @ 2.85m	



Trial Hole Log No.2

Location: Rear right corner of main house

Job Ref:
138280.1.USI

Depth (m)	Symbolic Log	Strata Description	Insitu Tests		Soil Sample	Root Sample
			SV(19)			
0.0		Ground Level				
		Concrete				
		Brickwork				
		Double Step				
			86kpa		Soil @ 0.2m	Root @ 0.2m
0.5		Brown fine to medium gravelly silty CLAY	94kpa		Soil @ 0.7m	Root @ 0.7m
1.0		Brown fine to medium gravelly silty CLAY	100kpa		Soil @ 1.2m	Root @ 1.2m
1.5		Brown fine to medium gravelly sandy silty CLAY	84kpa		Soil @ 1.7m	
2.0		Brown fine to medium gravelly sandy silty CLAY	78kpa		Soil @ 2.2m	
2.5		Brown sandy silty CLAY	74kpa		Soil @ 2.7m	
3.0		TRIAL HOLE TERMINATED	74kpa			



Laboratory Report



Contract Number: 60733

Client Ref: **138280.1.2**

Client PO:

Date Received: **01-08-2022**

Date Completed: **16-08-2022**

Report Date: **16-08-2022**

Client: **Auger Solutions**

Auger House

Cross Lane

Wallasey

Wirral

CH45 8RH

This report has been checked and approved by:

Richard John

Quality/Technical Manager

Contract Title: **138280.1.2**

For the attention of: **ADMIN**

Test Description	Qty
Natural Moisture Content (AUGER)	12
- * UKAS	
Plasticity Index	8
- * UKAS	
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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.

Approved Signatories:

Brendan Evans (Office Administrator) - Emma Sharp (Business Support Manager) - Paul Evans (Director)

Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)

Wayne Honey (Human Resources/ Health and Safety Coordinator)

GEO Site & Testing Services Ltd

Units 3-4, Heol Aur, Dafen, Llanelli, Carmarthenshire, Wales SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

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

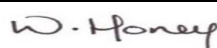
Policy Holder	Unknown
Risk Address	Unknown
SI Date	01/08/2022
Issue Date	01/08/2022
Report Date	11/08/2022
Auger Reference	138280.1.2.RSS
Insurance Company	Arch Insurance
LA Claim Reference	SU2201802
LA Co. Reference	Crawford & Co

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Checked and approved

16/08/2022

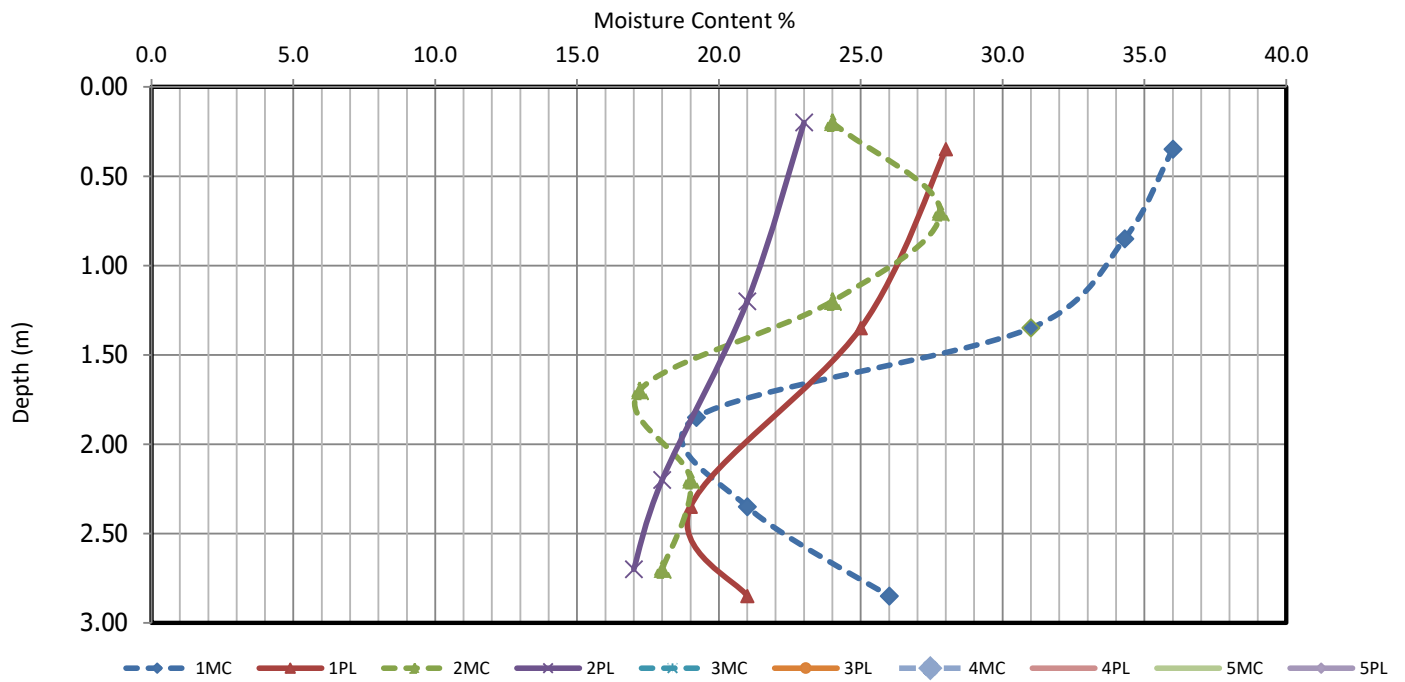
Wayne Honey



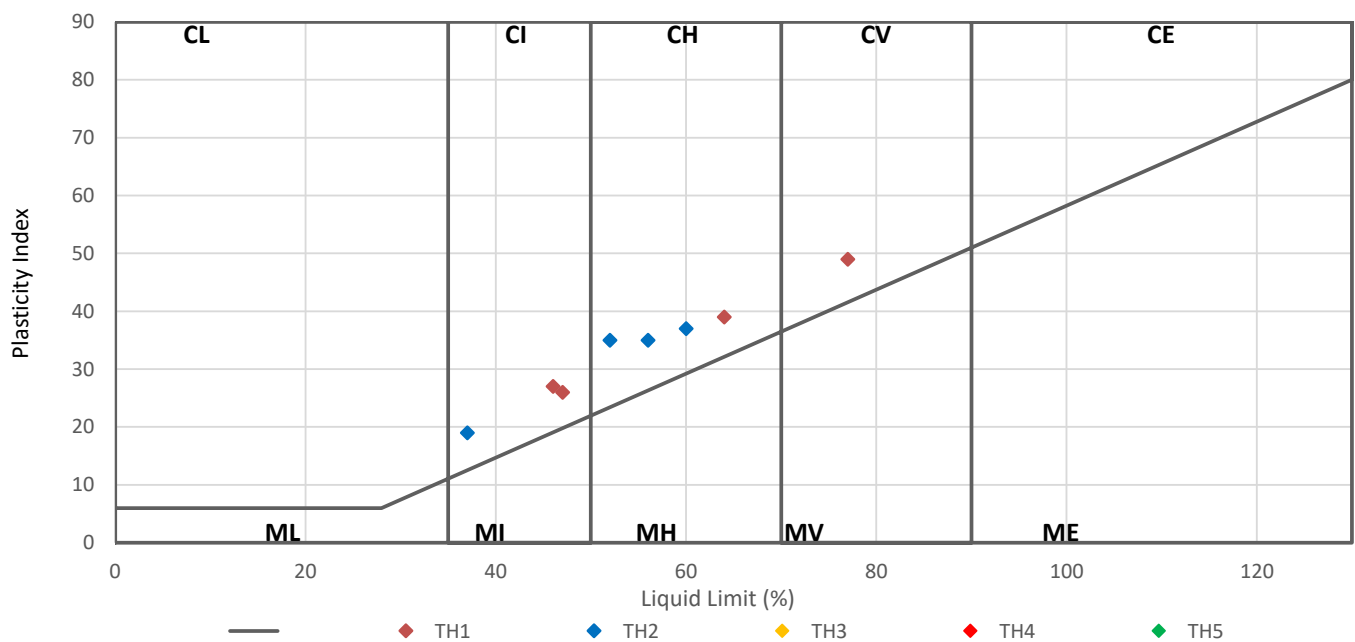


Test Operator
Jason Smith

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



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)

Auger Solutions

Auger House

Cross Lane

WALLASEY

Wirral CH45 8RH

Enterprise House
49-51 Whiteknights Road
Reading
RG6 7BB

Tel: (0118) 986 9552 *(Direct line)*

E-mail: richardsons@botanical.net

Web: www.botanical.net

Your ref: **138280-1-1**

Our ref: **83/8514**

19/08/2022

Dear Sirs

Root ID

The samples you sent in relation to the above on 01/08/2022 have been examined. Their structures were referable as follows:

TH2, 0.2m		
1 no.	Examined root: ACER (Maples, Sycamores). Very THIN.	Dead*.
1 no.	Microscopic examination showed insufficient cells for recognition.	
TH2, 0.7m		
2 no.	Examined root: ACER (Maples, Sycamores). Under 0.1mm in diameter.	Dead*.
9 no.	Unfortunately all with insufficient cells for identification.	
TH2, 1.2m		
2 no.	Examined root: again, we cannot rule out ACER (Maples, Sycamores). Less than 0.05mm in diameter.	Dead*.

ALL of the roots described above were very immature. Slightly tentative identifications. Please also note that the 'dead' results of those thinner samples could well be unreliable.

Click here for more information: [ACER](#)

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

Yours faithfully

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.

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