

Site Investigation Report

Auger Ref:



Job Information	
Client	Crawford & Co
Client ref	
Visit date	18/03/2022
Report date	21/03/2022

Job Summary	
✓	CCTV survey undertaken. Read more.
!	Drainage repairs required. Read more.
✓	2 trial holes undertaken. Read more.



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.
Findings	
Trial Hole Findings	Within TH1, we also took footing measurements from the projection of the front elevation. These measurements are shown in Trial Hole Log 1b below. The footings exposed during TH1 were brick step outs on top of loose concrete. During the excavation to expose the footing of the two storey addition we encountered a broken drain pipe, however as this was outside the AOC we did not further investigate this drain, should this be required then a cost and scope for this can be completed on request
Visual Inspection	A visual inspection of MH1 revealed the outlet of this run is an interceptor trap, this was partially blocked and causing the channel of the manhole to retain water. In addition the chamber walls appear to be falling in and the pointing between the bricks are non-existent. We believe a section of the chamber wall has broken off, fell in the channel and caused the blocking of the trap. Furthermore RWG1 was seen to be a back inlet gully whereby the inlet was a 50mm plastic pipe serving the rainwater downpipe and the outlet was also a 50mm plastic pipe leading into (we assume) MH1. However the outlet of this gully was blocked and due to the diameter of the pipe we were unable to cleanse and survey this run. We would inform the client that 50mm pipework should not be used as a substitute to 100mm below ground pipework. Therefore we recommend the downstream pipework serving this gully is renewed in 100mm pipework. This action should however be completed on a private basis as this is classed as poor workmanship.
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 Outside AOC Our survey of line 1 revealed joint displacements. 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 Install a 100mm patch liner 6m upstream of MH1 to cover the displacement. Manhole 1 Excavate and replace the interceptor trap with 100mm straight pipework. This will involve removing the chamber wall and installing a 100mm patch liner after completion in order to connect the new to existing pipework. Re-bench and re-channel MH1. Also the top of the chamber the bricks are loose, please replace the defective bricks and reform the upper level of the chamber, this may involve lifting/ breaking the paving slabs to facilitate this work. Should this happen then this will prolong the claim and incur further costs. Due to the depth of the chamber special health and safety measures must be undertook. Interceptor traps were originally designed to keep foul smells from entering the property. It is now generally accepted that they should be removed as they are a major cause of blockages within a drainage system. Auger like most drainage contractors and Water and Sewerage Companies replace these traps with a straight section of pipe to prevent blockages. In some circumstances this does result in smells becoming apparent in the property as it occasionally highlights existing defects with internal traps and seals. Auger is unable to take responsibility if this happens after work is completed. Smells in the house will not be covered under policy terms and if this occurs customers will need to employ their own plumber to resolve the issue. If this is of concern please discuss the matter with your account manager before repairs commence. We will now refer back to the client in order to progress the claim.
	<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>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> <i>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>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.</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>

Photographs

Trial Hole 1

Fig 1.1: Trial Hole 1 Location



Fig 1.2: Trial Hole 1 Footing



Fig 1.3: Trial Hole 1



Trial Hole 2

Fig 2.1: Trial Hole 2 Location



Fig 2.2: Trial Hole 2 Footing



Site Photos

Fig 3.1: MH1

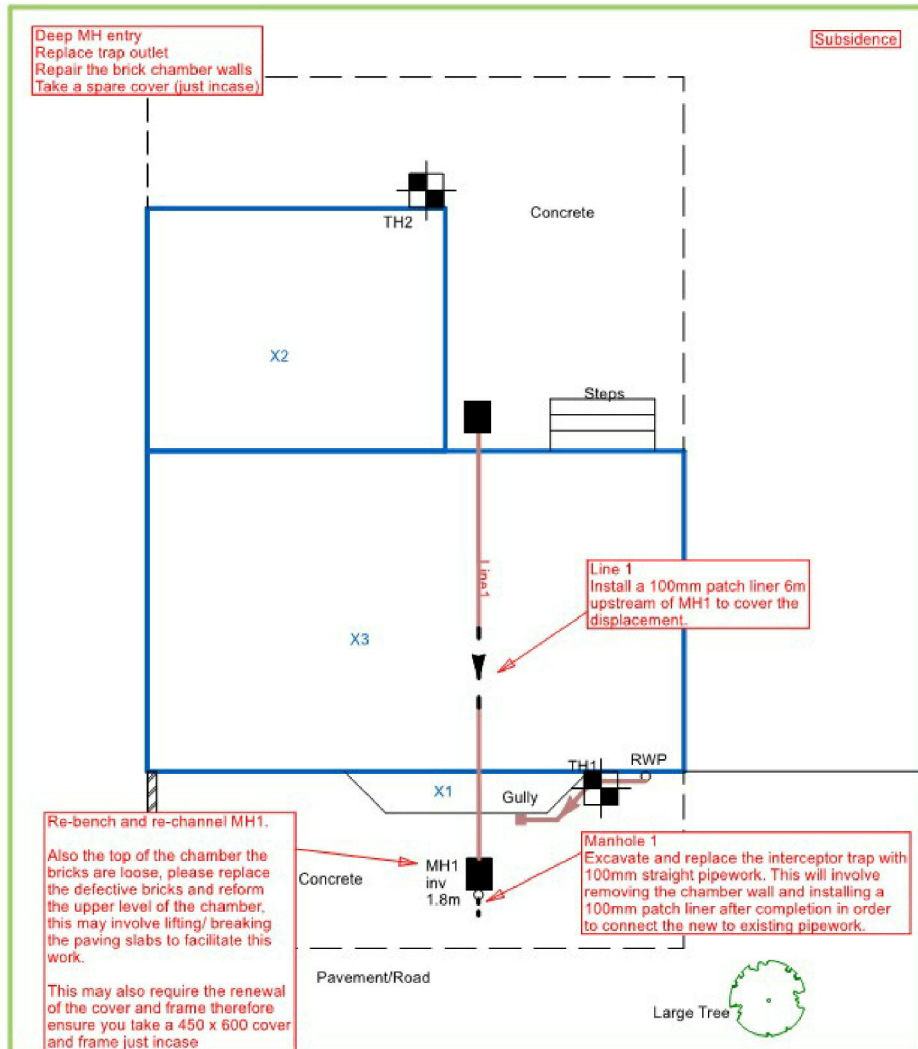


Fig 3.2: Defective MH1 chamber walls



CCTV Survey – Inspection Listings (WRc Guidelines Applied)

L1			
Direction	Upstream	From	MH1
Pipe Size (mm)	100	Depth (m)	1.8
Pipe Material	PF	To	U/S
0.0m	Start of Survey Length		
4.8m	Joint Displacement - Medium		
5.9m	Deformed 10%		
5.9m	Finish of Survey Length		



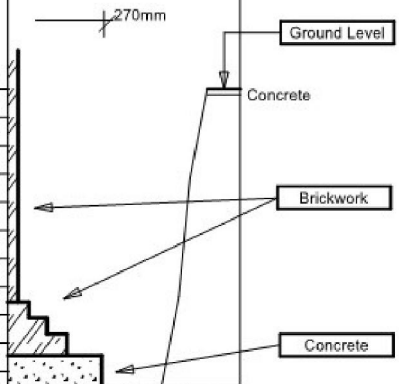
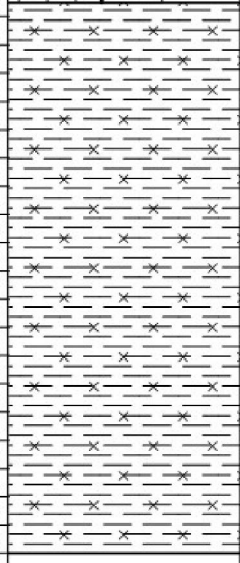
This drawing should be used for diagrammatic purposes only. Auger are not responsible or liable for any 3rd party works undertaken using the details outlined in this drawing.
Confirmation of the drainage configuration can only be confirmed by excavation or detailed technical survey.

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



Trial Hole Log No.1

Location: Front right corner of three storey property

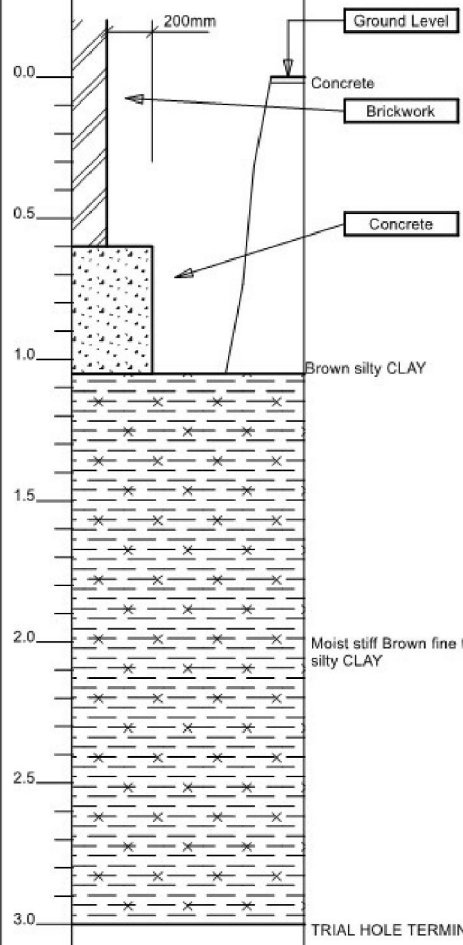
Depth (m)	Symbolic Log	Strata Description	Insitu Tests		Soil Sample	Root Sample
			SV(19)			
0.0		Ground Level				
		Concrete				
0.5		Brickwork				
		Concrete				
1.0			76kpa		Soil @ 1.05m	
1.5			90kpa		Soil @ 1.55m	Root @ 1.55m
2.0		Dry very stiff Brown fine to medium gravelly silty CLAY	108kpa		Soil @ 2.05m	Root @ 2.05m
2.5			120kpa		Soil @ 2.55m	Root @ 2.55m
3.0		TRIAL HOLE TERMINATED	122kpa			

— 190mm



Trial Hole Log No.2

Location: Rear right corner of rear extension

Depth (m)	Symbolic Log	Strata Description	Insitu Tests		Soil Sample	Root Sample
			SV(19)			
0.0		Ground Level				
		Concrete				
		Brickwork				
0.5		Concrete				
1.0		Brown silty CLAY	70kpa		Soil @ 1.05m	
1.5			86kpa		Soil @ 1.55m	
2.0		Moist stiff Brown fine to medium gravelly silty CLAY	104kpa		Soil @ 2.05m	
2.5			116kpa		Soil @ 2.55m	
3.0		TRIAL HOLE TERMINATED	120kpa			



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

07/04/2022

Dear Sirs

Root ID

The samples you sent in relation to the above on 18/03/2022 have been examined. Their structures were referable as follows:

TH1, 1.55m		
4 no.	Examined root: the family Rosaceae, subfamily POMOIDEAE (a group of closely related trees: Malus (Apple), Pyrus (Pear), Crataegus (Hawthorn), Sorbus (Rowan, Whitebeam, Service tree), Mespilus (Medlar), and some shrubs (Pyracantha (Firethorn), Chaenomeles (Japonica), Cydonia (Quince), Amelanchier, Cotoneaster)).	Alive, recently*.
TH1, 2.05m		
3 no.	Examined root: the family Rosaceae, subfamily POMOIDEAE (as listed above).	Alive, recently*.
TH1, 2.55m		
1 no.	Examined root: the family SALICACEAE (Salix (Willows) and Populus (Poplars)).	Alive, recently*.
3 no.	Unfortunately all with insufficient cells for identification.	

Click here for more information: [POMOIDEAE](#) [SALICACEAE](#)

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.

** Try out our web site on www.botanical.net **

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

Report commissioned by





Geotechnical Testing Analysis Report



environmental
claims mgmt
subsidence
drainage

*The testing results contained within this report have been performed by GSTL a UKAS accredited laboratory on behalf of Auger.

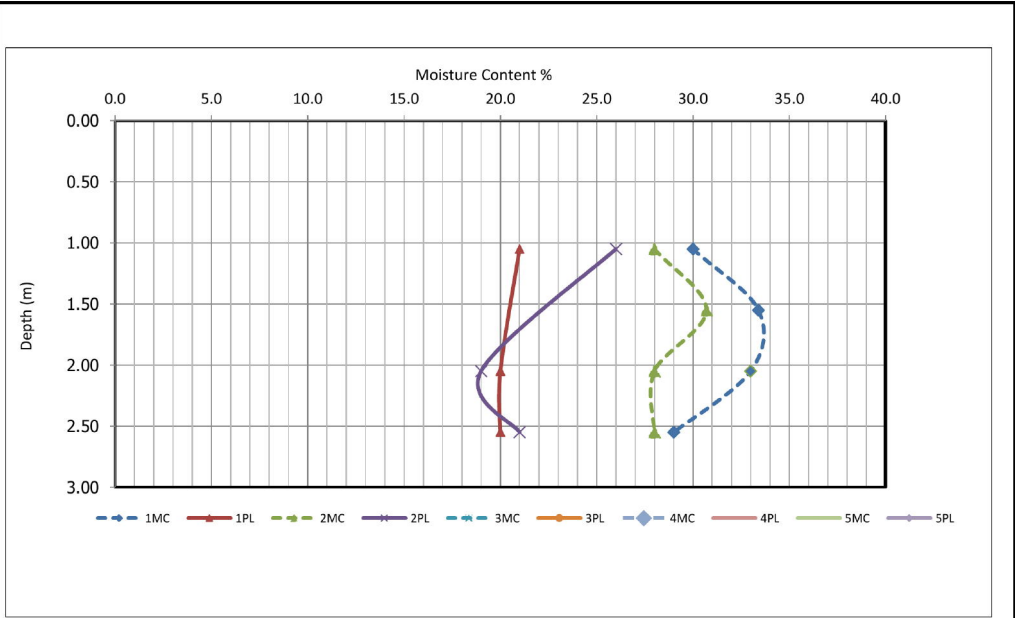
Summary Of Claim Details

Policy Holder	Unknown
Risk Address	Unknown
SI Date	18/03/2022
Issue Date	18/03/2022
Report Date	28/03/2022
Auger Reference	
Insurance Company	Aviva
LA Claim Reference	
LA Co. Reference	Crawford & Co

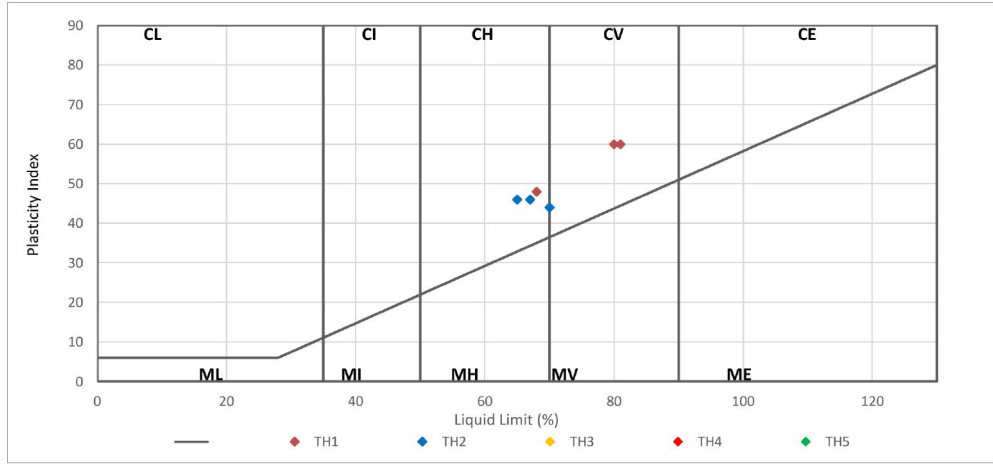
This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of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

	Checked	29/03/2022	Wayne Honey	
	Approved	29/03/2022	Paul Evans	





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	Checked	29/03/2022	Wayne Honey
Luke Williams	Approved	29/03/2022	Paul Evans



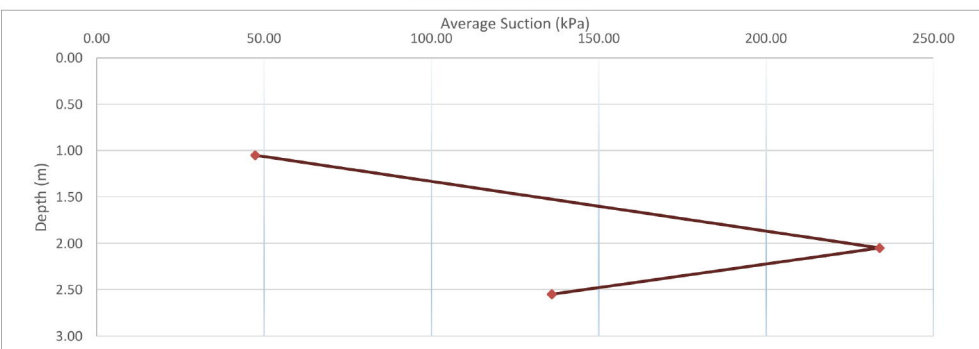
GSTL Contract Number		
Risk Address	Unknown	
Auger Reference		
Remarks	D - Disturbed (Recompacted 2.5kg Rammer), U - Undisturbed Sample	

[illegible]

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



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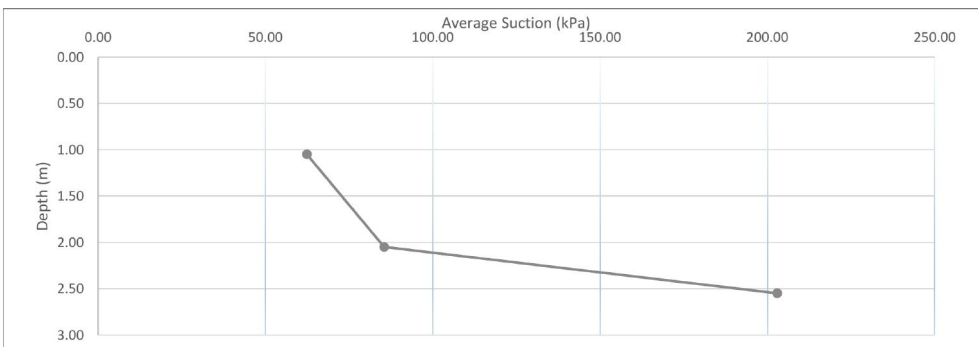
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