[redacted]

Site Investigation Report

[redacted]

	[redacted]
	4

Job Summary

- CCTV survey undertaken. Read more.
- Drainage repairs Read more.

Auger Site Investigations Ltd T/A Auger, Registered Office: Hanover Buildings, 11-13 Hanover Street, Liverpool, Merseyside, L1 3DN
Director: David Brewster BSc. C.Eng. M.I.Struct.E. Company No: 3088958 VAT No: 659 6999 43

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	Our engineers were only able to complete the deep trial hole to the rear of the building due to timing and the configuration of drainage on site. **Trial Hole 2** Trial hole 2 was conducted as a deep trial hole to the rear of the property - our engineers were able to excavate the trial hole down to a depth of 2.7 and then augered to a depth of 3.0m. The footing was found to start at approximately 0.25m and extended beyond the 2.7m reached by our engineers. Due to the depths encountered our engineers were unable to determine the exact underside, save that it is deeper than 2.7m. Given the dimensions encountered to the rear there is a chance that similar conditions will be found in a trial hole to the front.
Drain Survey	We carried out a CCTV survey of the below ground drainage system, our findings of which are as follows: **Line 1 - From Manhole 1 (MH1) upstream to Soil Vent Pipe (SVP)** Our survey of line 1 revealed no significant defects to the pipework on this line which could be allowing an escape of water. **Line 2 - From MH1 upstream to Surface Water Gully (SWG) 1** 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 Waste Gully (WG) 1** Our survey of line 3 revealed no significant defects to the pipework on this line which could be allowing an escape of water. **Line 4 - From MH1 downstream to MH2** Our survey of line 4 revealed joint displacements and cracking throughout the line. Due to the depth of MH2 our engineer was unable to survey the lines to WG2 and SWG2.

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 4** Install 4m of 150mm liner directly downstream of MH1 to just before the branch connection. Install 4m of 150mm liner directly upstream of MH2 to just before the branch connection. Deep manhole entry and an additional man will be required to install the liner. CCTV survey upstream from MH2 to check for further defects on the WG2 and SWG2 lines. 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.* *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.* *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.*

Photographs

Trial Hole 2

Fig 1.1: Trial Hole 2 Location

Fig 1.2: Trial Hole 2 Footing

CCTV Stills

Fig 2.1: Line 4

Fig 2.2: Line 4

Site Photos

Fig 3.1: MH2

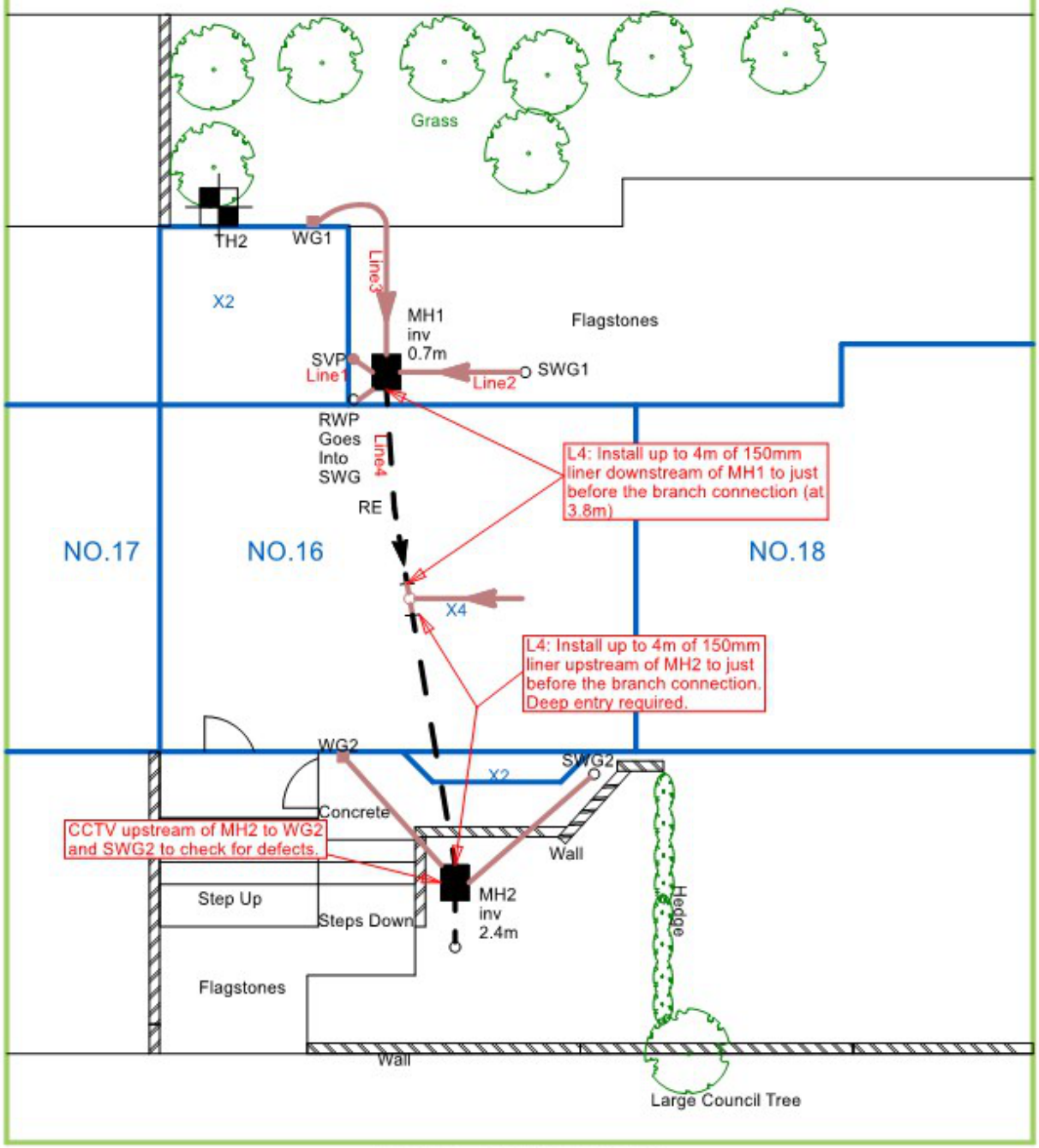
auger

Proposed Layout

Date: 04/07/2024

Deep Entry

Subsidence



FRONT OF PROPERTY

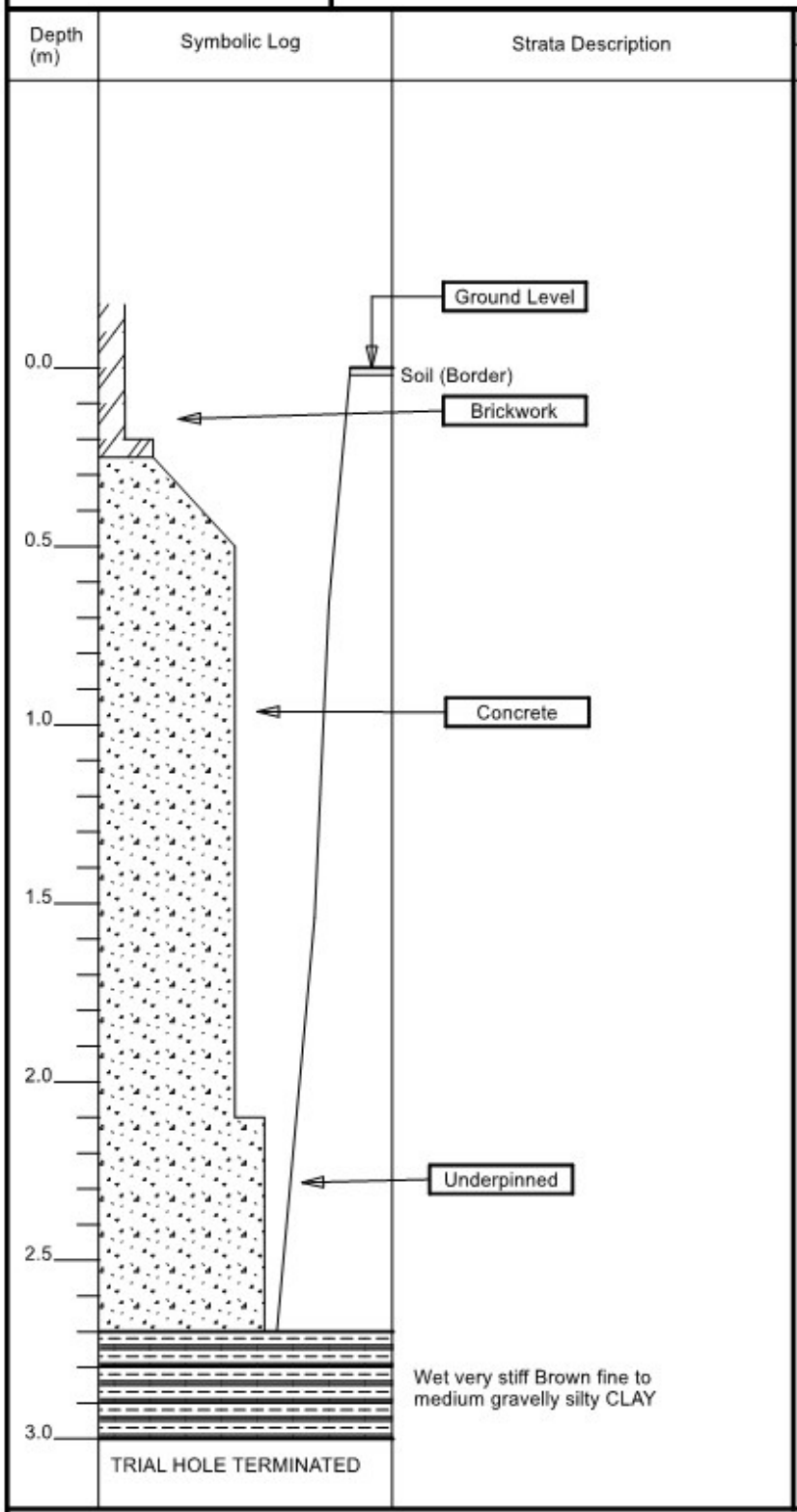
LEGEND

- = 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.2

Location: Rear middle of rear extension

[redacted]



Insitu Tests		Soil Sample	Root Sample
SV(19)			
120kpa			
128kpa		Soil @ 2.7m	Root @ 2.7m
132kpa			

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

16/07/2024

Dear Sirs

Root ID

The samples you sent in relation to the above on 03/07/2024 have been examined. Their structures were referable as follows:

TH2, 2.7m		
6 no.	Examined root: HEDERA (Ivy) - or the related FATSIA (a robust shrub with fig-like leaves).	Dead*.
5 no.	Examined root: the family POLYGONACEAE (includes the invasive Russian Vine and Japanese Knotweed).	Alive, recently*.
	Unfortunately all with insufficient cells for identification.	

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.

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

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

Report commissioned by auger

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	[redacted]
SI Date	01/07/2024
Issue Date	01/07/2024
Report Date	10/07/2024
Auger Reference	[redacted]
Insurance Company	Arch Insurance
LA Claim Reference	[redacted]
LA Co. Reference	Crawford & Co

Checked and approved	10/07/2024	Wayne Honey	[redacted]

UKAS TESTING 2788

GEOTECHNICAL SITE & TESTING LABORATORIES

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

GSTL Contract Number	[redacted]
Report Date	10/07/2024
Auger Reference	[redacted]

TH Trial Hole	Sample Type	Depth (m)	Sample Description
TH2	D	2.70	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 +

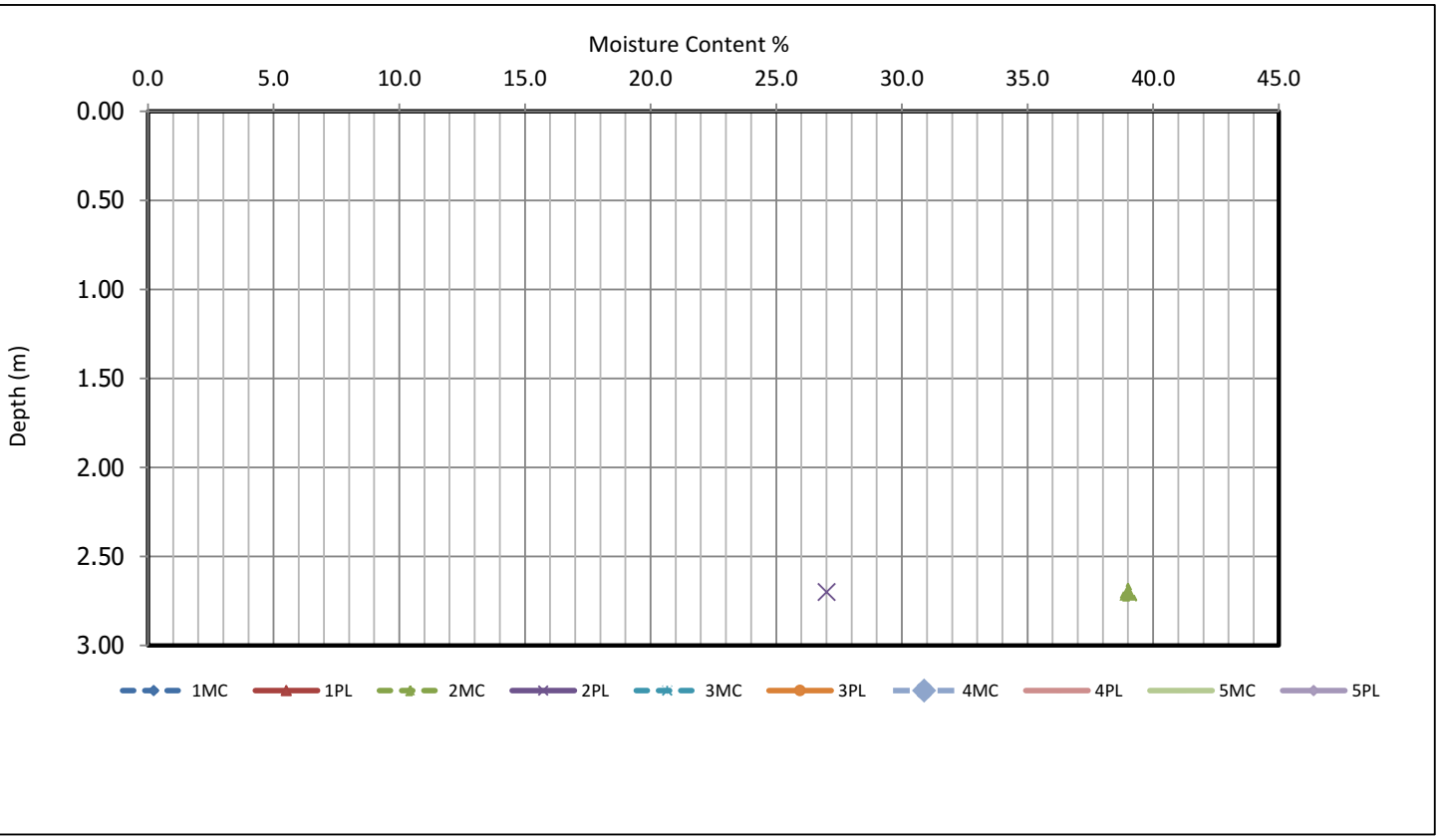
GSTL Contract Number	[redacted]	
Report Date	**10/07/2024**	
Auger Reference	[redacted]	
Remarks	NP - (Non-Plastic), # - (Liquid Limit and Plastic Limit Wet Sieved)	

TH Trial Hole	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing .425mm %	NHBC Chapter 4.2	Remarks
TH2	D	2.70	39	79	27	52	98	HIGH VCP	CV Very High Plasticity

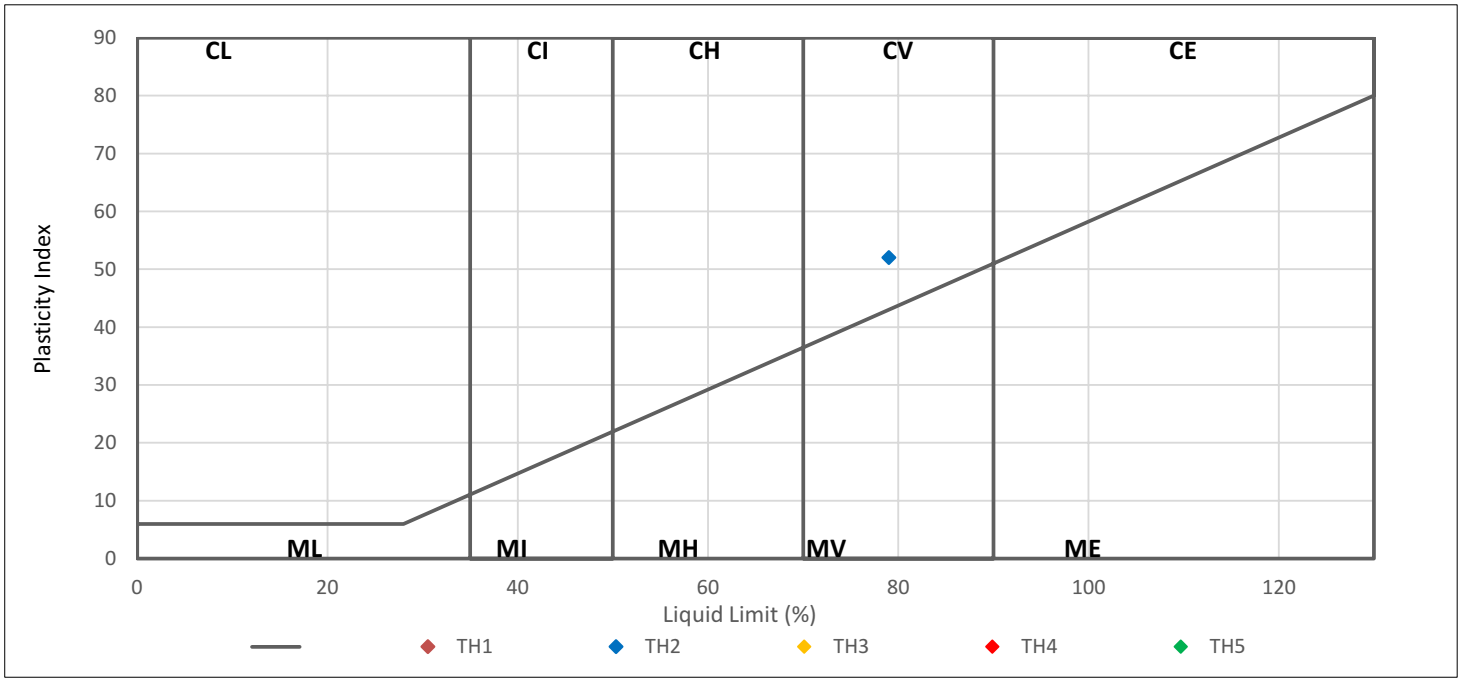
Modified Plasticity Index (PI) <10	: Non Classified
Modified PI = 10 to <20	: Low volume change potential (LOW VCP)
Modified PI = 20 to <40	: Medium volume change potential (Med VCP)
Modified PI = 40 or greater	: High volume change potential (HIGH VCP)

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



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